SimFQT

0.1.2

Generated by Doxygen 1.7.4

Sat Nov 26 2011 09:24:28

Contents

1 SimFQT Documentation

1.1 Getting Started

- Main features
- Installation
- Linking with SimFQT
- Users Guide
- Tutorials
- Copyright and License
- Make a Difference
- Make a new release
- People

1.2 SimFQT at SourceForge

- Project page
- Download SimFQT
- Open a ticket for a bug or feature
- Mailing lists
- Forums
  - Discuss about Development issues
  - Ask for Help
  - Discuss SimFQT

1.3 SimFQT Development

- Git Repository (Subversion is deprecated)
- Coding Rules
- Documentation Rules
- Test Rules

1.4 External Libraries

- Boost (C++ STL extensions)
- Python
- MySQL client
- SOCI (C++ DB API)

1.5 Support SimFQT

1.6 About SimFQT

SimFQT is a C++ project of airline pricing classes and functions, mainly targeting simulation purposes. N

SimFQT makes an extensive use of existing open-source libraries for increased functionality, speed and accuracy. In particular Boost (*C++ STL Extensions*) library is used.

The SimFQT project originates from the department of Operational Research and Innovation at Amadeus, Sophia Antipolis, France. SimFQT is released under the terms of the GNU Lesser General Public License (LGPLv2.1) for you to enjoy.

SimFQT should work on GNU/Linux, Sun Solaris, Microsoft Windows (with Cygwin, MinGW/MSYS, or Microsoft Visual C++ .NET) and Mac OS X operating systems.

Note

(N) - The SimFQT library is **NOT** intended, in any way, to be used by airlines for production systems. If you want to report issue, bug or feature request, or if you just want to give feedback, have a look on the right-hand side of this page for the preferred reporting methods. In any case, please do not contact Amadeus directly for any matter related to SimFQT.

2 People

2.1 Project Admins (and Developers)

- Gabrielle Sabatier <gsabatier@users.sourceforge.net> (N)
- Denis Arnaud <denis_arnaud@users.sourceforge.net> (N)
- Anh Quan Nguyen <quannaus@users.sourceforge.net> (N)

2.2 Retired Developers

- Mehdi Ayouni <mehdi.ayouni@gmail.com>
- Son Nguyen Kim <snguyenkim@users.sourceforge.net> (N)

2.3 Contributors

- Emmanuel Bastien <ebastien@users.sourceforge.net> (N)

2.4 Distribution Maintainers

- Fedora/RedHat: Denis Arnaud <denis_arnaud@users.sourceforge.net> (N)
- Debian: Emmanuel Bastien <ebastien@users.sourceforge.net> (N)

Note

(N) - Amadeus employees.

3 Coding Rules

In the following sections we describe the naming conventions which are used for files, classes, structures, local variables, and global variables.

3.1 Default Naming Rules for Variables

Variables names follow Java naming conventions. Examples:

- `lNumberOfPassengers`
- `lSeatAvailability`

3.2 Default Naming Rules for Functions

Function names follow Java naming conventions. Example:

- `int myFunctionName (const int& a, int b)`

3.3 Default Naming Rules for Classes and Structures

Each new word in a class or structure name should always start with a capital letter and the words should be separated with an under-score. Abbreviations are written with capital letters. Examples:

- `MyClassName`
- `MyStructName`

3.4 Default Naming Rules for Files

Files are named after the C++ class names.

Source files are named using `.cpp` suffix, whereas header files end with `.hpp` extension. Examples:

- `FlightDate.hpp`
- `SegmentDate.cpp`

3.5 Default Functionality of Classes

All classes that are configured by input parameters should include:

- default empty constructor
- one or more additional constructor(s) that takes input parameters and initializes the class instance
- setup function, preferably named `'setup'` or `'set_parameters'`

Explicit destructor functions are not required, unless they are needed. It shall not be possible to use any of the other member functions unless the class has been properly initiated with the input parameters.

4 Copyright and License

4.1 GNU LESSER GENERAL PUBLIC LICENSE

4.1.1 Version 2.1, February 1999

```
Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]
```

4.2 Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that

any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

4.3 TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and

data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent

and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

4.3.1 NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LI-

ABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

4.3.2 END OF TERMS AND CONDITIONS

4.4 How to Apply These Terms to Your New Programs

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library 'Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

Source

5 Documentation Rules

5.1 General Rules

All classes in SimFQT should be properly documented with Doxygen comments in include (`.hpp`) files. Source (`.cpp`) files should be documented according to a normal standard for well documented C++ code.

An example of how the interface of a class shall be documented in SimFQT is shown here:

```
/*!
 * \brief Brief description of MyClass here
 *
 * Detailed description of MyClass here. With example code if needed.
 */
class MyClass {
public:
  //! Default constructor
  MyClass(void) { setup_done = false; }

  /*!
   * \brief Constructor that initializes the class with parameters
   *
   * Detailed description of the constructor here if needed
   *
   * \param[in] param1 Description of \a param1 here
   * \param[in] param2 Description of \a param2 here
   */
  MyClass(TYPE1 param1, TYPE2 param2) { setup(param1, param2); }

  /*!
   * \brief Setup function for MyClass
   *
   * Detailed description of the setup function here if needed
   *
   * \param[in] param1 Description of \a param1 here
   * \param[in] param2 Description of \a param2 here
   */
  void setup(TYPE1 param1, TYPE2 param2);

  /*!
   * \brief Brief description of memberFunction1
   *
   * Detailed description of memberFunction1 here if needed
   *
   * \param[in]     param1 Description of \a param1 here
   * \param[in]     param2 Description of \a param2 here
   * \param[in,out] param3 Description of \a param3 here
   * \return Description of the return value here
   */
  TYPE4 memberFunction1(TYPE1 param1, TYPE2 param2, TYPE3 &param3);

private:

  bool _setupDone;         /*!< Variable that checks if the class is properly
                                initialized with parameters */
  TYPE1 _privateVariable1; //!< Short description of _privateVariable1 here
  TYPE2 _privateVariable2; //!< Short description of _privateVariable2 here
};
```

5.2 File Header

All files should start with the following header, which include Doxygen's \file, \brief and \author tags, $Date$ and $Revisions$ CVS tags, and a common copyright note:

```
/*!
 * \file
 * \brief Brief description of the file here
 * \author Names of the authors who contributed to this code
 * \date Date
 *
 * Detailed description of the file here if needed.
 *
 * ------------------------------------------------------------------------
 *
 * SimFQT - C++ Standard Airline IT Object Library
 *
 * Copyright (C) 2009-2010  (\see authors file for a list of contributors)
 *
 * \see copyright file for license information
 *
 * ------------------------------------------------------------------------
 */
```

5.3 Grouping Various Parts

All functions must be added to a Doxygen group in order to appear in the documentation. The following code example defines the group 'my_group':

```
/*!
 * \defgroup my_group Brief description of the group here
 *
 * Detailed description of the group here
*/
```

The following example shows how to document the function myFunction and how to add it to the group my_group:

```
/*!
 * \brief Brief description of myFunction here
 * \ingroup my_group
 *
 * Detailed description of myFunction here
 *
 * \param[in] param1 Description of \a param1 here
 * \param[in] param2 Description of \a param2 here
 * \return Description of the return value here
 */
TYPE3 myFunction(TYPE1 param1, TYPE2 &param2);
```

6 Main features

A short list of the main features of SimFQT is given below sorted in different categories. Many more features and functions exist and for these we refer to the reference documentation.

6.1 Fare calculation

- Calculation of fare from statistics on tickets/coupons

6.2 Fare rule engine

- Fare rules: storage, engine, management

6.3 Fare retrieval

- Retrieval of fares for specific booking requests or product assesment

6.4 Other features

- CSV input file parsing
- Memory handling

7 Make a Difference

Do not ask what SimFQT can do for you. Ask what you can do for SimFQT.

You can help us to develop the SimFQT library. There are always a lot of things you can do:

- Start using SimFQT
- Tell your friends about SimFQT and help them to get started using it
- If you find a bug, report it to us. Without your help we can never hope to produce a bug free code.
- Help us to improve the documentation by providing information about documentation bugs
- Answer support requests in the SimFQT discussion forums on SourceForge. If you know the answer to a question, help others to overcome their SimFQT problems.
- Help us to improve our algorithms. If you know of a better way (e.g., that is faster or requires less memory) to implement some of our algorithms, then let us know.

- Help to port SimFQT to new platforms. If you manage to compile SimFQT on a new platform, then tell how you did it.
- Send us your code. If you have a good SimFQT compatible code, which you can release under the LGPL, and you think it should be included in SimFQT, then send it to the communauty.
- Become an SimFQT developer. Send us an e-mail and tell what you can do for SimFQT.

8 Make a new release

8.1 Introduction

This document describes briefly the recommended procedure of releasing a new version of SimFQT using a Linux development machine and the SourceForge project site.

The following steps are required to make a release of the distribution package.

8.2 Initialisation

Clone locally the full Git project:

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

8.3 Branch creation

Create the branch, on your local clone, corresponding to the new release (say, 0.5.0):

```
cd ~/dev/sim/simfqtgit
git checkout trunk
git checkout -b 0.5.0
```

Update the version in the various build system files, replacing 99.99.99 by the correct version number:

```
vi CMakeLists.txt
vi autogen.sh
```

Update the version and add a change-log in the ChangeLog and in the RPM specification files:

```
vi ChangeLog
vi simfqt.spec
```

8.4 Commit and publish the release branch

Commit the new release:

```
cd ~/dev/sim/simfqtgit
git add -A
git commit -m "[Release 0.5.0] Release of version 0.5.0."
git push
```

8.5 Update the change-log in the trunk as well

Update the change-log in the ChangeLog and RPM specification files:

```
cd ~/dev/sim/simfqtgit
git checkout trunk
vi ChangeLog
vi simfqt.spec
```

Commit the change-logs and publish the trunk (main development branch):

```
git commit -m "[Doc] Integrated the change-log of the release 0.5.0."
git push
```

8.6 Create distribution packages

Create the distribution packages using the following command:

```
cd ~/dev/sim/simfqtgit
git checkout 0.5.0
rm -rf build && mkdir -p build
cd build
cmake -DCMAKE_INSTALL_PREFIX=/home/user/dev/deliveries/simfqt-0.5.0 \
 -DWITH_STDAIR_PREFIX=/home/user/dev/deliveries/stdair-stable \
 -DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON ..
make check && make dist
```

This will configure, compile and check the package. The output packages will be named, for instance, `simfqt-0.5.0.tar.gz` and `simfqt-0.5.0.tar.bz2`.

8.7 Generation the RPM packages

Optionally, generate the RPM package (for instance, for Fedora/RedHat):

```
cd ~/dev/sim/simfqtgit
git checkout 0.5.0
rm -rf build && mkdir -p build
cd build
cmake -DCMAKE_INSTALL_PREFIX=/home/user/dev/deliveries/simfqt-0.5.0 \
 -DWITH_STDAIR_PREFIX=/home/user/dev/deliveries/stdair-stable \
 -DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON ..
make dist
```

To perform this step, rpm-build, rpmlint and rpmdevtools have to be available on the system.

```
cp simfqt.spec ~/dev/packages/SPECS \
  && cp simfqt-0.5.0.tar.bz2 ~/dev/packages/SOURCES
cd ~/dev/packages/SPECS
rpmbuild -ba simfqt.spec
rpmlint -i ../SPECS/simfqt.spec ../SRPMS/simfqt-0.5.0-1.fc15.src.rpm \
  ../RPMS/noarch/simfqt-* ../RPMS/i686/simfqt-*
```

8.8 Update distributed change log

Update the `NEWS` and `ChangeLog` files with appropriate information, including what has changed since the previous release. Then commit and push the changes into the Simfqt's Git repository.

8.9 Create the binary package, including the documentation

Create the binary package, which includes HTML and PDF documentation, using the following command:

```
make package
```

The output binary package will be named, for instance, `simfqt-0.5.0-Linux.tar.bz2`. That package contains both the HTML and PDF documentation. The binary package contains also the executables and shared libraries, as well as C++ header files, but all of those do not interest us for now.

8.10 Upload the files to SourceForge

Upload the distribution and documentation packages to the SourceForge server. Check SourceForge help page on uploading software.

8.11 Upload the documentation to SourceForge

In order to update the Web site files, either:

- synchronise them with rsync and SSH:

  ```
  cd ~/dev/sim/simfqtgit
  git checkout 0.5.0
  rsync -aiv doc/html/ doc/latex/refman.pdf joe,simfqt@web.sourceforge.net:htdocs/
  ```

  where `-aiv` options mean:

  - `-a`: archive/mirror mode; equals `-rlptgoD` (no `-H`, `-A`, `-X`)
  - `-v`: increase verbosity
  - `-i`: output a change-summary for all updates

  - Note the trailing slashes (/) at the end of both the source and target directories. It means that the content of the source directory (`doc/html`), rather than the directory itself, has to be copied into the content of the target directory.

- or use the `SourceForge Shell service`.

8.12 Make a new post

- submit a new entry in the `SourceForge project-related news feed`
- make a new post on the `SourceForge hosted WordPress blog`
- and update, if necessary, `Trac tickets`.

8.13 Send an email on the announcement mailing-list

Finally, you should send an announcement to `simfqt-announce@lists.sourceforge.net` (see `https://lists.sourceforge.net/lists/listinfo/simfqt-announce` for the archives)

9 Installation

9.1 Table of Contents

9.2 Fedora/RedHat Linux distributions

Note that on Fedora/RedHat Linux distributions, RPM packages are available and can be installed with your usual package manager. For instance:

```
yum -y install simfqt-devel simfqt-doc
```

RPM packages can also be available on the SourceForge download site.

9.3 SimFQT Requirements

SimFQT should compile without errors or warnings on most GNU/Linux systems, on UNIX systems like Solaris SunOS, and on POSIX based environments for Microsoft Windows like Cygwin or MinGW with MSYS. It can be also built on Microsoft Windows NT/2000/XP/Vista/7 using Microsoft's Visual C++ .NET, but our support for this compiler is limited. For GNU/Linux, SunOS, Cygwin and MinGW we assume that you have at least the following GNU software installed on your computer:

- GNU Autotools:
  - autoconf,
  - automake,
  - libtool,
  - make, version 3.72.1 or later (check version with 'make --version')
- GCC - GNU C++ Compiler (g++), version 4.3.x or later (check version with 'gcc --version')
- Boost - C++ STL extensions, version 1.35 or later (check version with 'grep "define BOOST_LIB_VERSION" /usr/include/boost/version.hpp')
- MySQL - Database client libraries, version 5.0 or later (check version with 'mysql --version')
- SOCI - C++ database client library wrapper, version 3.0.0 or later (check version with 'soci-config --version')

Optionally, you might need a few additional programs: Doxygen, LaTeX, Dvips and Ghostscript, to generate the HTML and PDF documentation.

We strongly recommend that you use recent stable releases of the GCC, if possible. We do not actively work on supporting older versions of the GCC, and they may therefore (without prior notice) become unsupported in future releases of SimFQT.

9.4 Basic Installation

Briefly, the shell commands `./cmake .. && make install' should configure, build, and install this package. The following more-detailed instructions are generic; see the 'README' file for instructions specific to this package. Some packages provide this 'INSTALL' file but do not implement all of the features documented below.

The lack of an optional feature in a given package is not necessarily a bug. More recommendations for GNU packages can be found in the info page corresponding to "Makefile Conventions: (standards)Makefile Conventions".

The 'cmake' shell script attempts to guess correct values for various system-dependent variables used during compilation. It uses those values to create a 'Makefile' in each directory of the package. It may also create one or more '.h' files containing system-dependent definitions. Finally, it creates a 'CMakeCache.txt' cache file that you can refer to in the future to recreate the current configuration, and a file 'CMakeFiles' containing compiler output (useful mainly for debugging 'cmake').

It can also use an optional file (typically called 'config.cache' and enabled with '--cache-file=config.cache' or simply '-C') that saves the results of its tests to speed up reconfiguring. Caching is disabled by default to prevent problems with accidental use of stale cache files.

If you need to do unusual things to compile the package, please try to figure out how 'configure' could check whether to do them, and mail diffs or instructions to the address given in the 'README' so they can be considered for the next release. If you are using the cache, and at some point 'config.cache' contains results you don't want to keep, you may remove or edit it.

The file 'CMakeLists.txt' is used to create the 'Makefile' files.

The simplest way to compile this package is:

1. 'cd' to the directory containing the package's source code and type './cmake ..' to configure the package for your system. Running 'cmake' is generally fast. While running, it prints some messages telling which features it is checking for.

2. Type 'make' to compile the package.

3. Optionally, type 'make check'to run any self-tests that come with the package, generally using the just-built uninstalled binaries.

4. Type 'make install' to install the programs and any data files and documentation. When installing into a prefix owned by root, it is recommended that the package be configured and built as a regular user, and only the 'make install' phase executed with root privileges.

5. You can remove the program binaries and object files from the source code directory by typing 'make clean'. To also remove the files that 'configure' created (so you can compile the package for a different kind of computer), type 'make distclean'. There is also a 'make maintainer-clean' target, but that is intended mainly for the package's developers. If you use it, you may have to get all sorts of other programs in order to regenerate files that came with the distribution.

6. Often, you can also type 'make uninstall' to remove the installed files again. In practice, not all packages have

tested that uninstallation works correctly, even though it is required by the GNU Coding Standards.

9.5 Compilers and Options

Some systems require unusual options for compilation or linking that the ‘cmake’ script does not know about. Run ‘./cmake --help’ for details on some of the pertinent environment variables.

You can give ‘cmake’ initial values for configuration parameters by setting variables in the command line or in the environment. Here is an example:

```
./cmake  CC=c99 CFLAGS=-g LIBS=-lposix
```

See also

Defining Variables for more details.

9.6 Compiling For Multiple Architectures

You can compile the package for more than one kind of computer at the same time, by placing the object files for each architecture in their own directory. To do this, you can use GNU ‘make’. ‘cd’ to the directory where you want the object files and executables to go and run the ‘configure’ script. ‘configure’ automatically checks for the source code in the directory that ‘configure’ is in and in ‘..’. This is known as a "VPATH" build.

With a non-GNU ‘make’, it is safer to compile the package for one architecture at a time in the source code directory. After you have installed the package for one architecture, use ‘make distclean’ before reconfiguring for another architecture.

On MacOS X 10.5 and later systems, you can create libraries and executables that work on multiple system types--known as "fat" or "universal" binaries--by specifying multiple ‘-arch’ options to the compiler but only a single ‘-arch’ option to the preprocessor. Like this:

```
./configure CC="gcc -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
            CXX="g++ -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
            CPP="gcc -E" CXXCPP="g++ -E"
```

This is not guaranteed to produce working output in all cases, you may have to build one architecture at a time and combine the results using the ‘lipo’ tool if you have problems.

9.7 Installation Names

By default, ‘make install’ installs the package’s commands under ‘/usr/local/bin’, include files under ‘/usr/local/include’, etc. You can specify an installation prefix other than ‘/usr/local’ by giving ‘configure’ the option ‘--prefix=PREFIX’, where PREFIX must be an absolute file name.

You can specify separate installation prefixes for architecture-specific files and architecture-independent files. If you pass the option ‘--exec-prefix=PREFIX’ to ‘configure’, the package uses PREFIX as the prefix for installing programs and libraries. Documentation and other data files still use the regular prefix.

In addition, if you use an unusual directory layout you can give options like ‘--bindir=DIR’ to specify different values for particular kinds of files. Run ‘configure --help’ for a list of the directories you can set and what kinds of files go in them. In general, the default for these options is expressed in terms of ‘${prefix}’, so that specifying just ‘--prefix’ will affect all of the other directory specifications that were not explicitly provided.

The most portable way to affect installation locations is to pass the correct locations to ‘configure’; however, many packages provide one or both of the following shortcuts of passing variable assignments to the ‘make install’ command line to change installation locations without having to reconfigure or recompile.

The first method involves providing an override variable for each affected directory. For example, ‘make install prefix=/alternate/director
will choose an alternate location for all directory configuration variables that were expressed in terms of ‘${prefix}’. Any directories that were specified during ‘configure’, but not in terms of ‘${prefix}’, must each be overridden at install time for the entire installation to be relocated. The approach of makefile variable overrides for each directory variable is required by the GNU Coding Standards, and ideally causes no recompilation. However, some platforms have known limitations with the semantics of shared libraries that end up requiring recompilation when using this method, particularly noticeable in packages that use GNU Libtool.

The second method involves providing the ‘DESTDIR’ variable. For example, ‘make install DESTDIR=/alternate/directory’ will prepend ‘/alternate/directory’ before all installation names. The approach of ‘DESTDIR’ overrides is not required by the GNU Coding Standards, and does not work on platforms that have drive letters. On the other hand, it does better at avoiding recompilation issues, and works well even when some directory options were not specified in terms of ‘${prefix}’ at ‘configure’ time.

9.8 Optional Features

If the package supports it, you can cause programs to be installed with an extra prefix or suffix on their names by giving 'cmake' the option '--program-prefix=PREFIX' or '--program-suffix=SUFFIX'.

Some packages pay attention to '--enable-FEATURE' options to 'configure', where FEATURE indicates an optional part of the package. They may also pay attention to '--with-PACKAGE' options, where PACKAGE is something like 'gnu-as' or 'x' (for the X Window System). The 'README' should mention any '--enable-' and '--with-' options that the package recognizes.

For packages that use the X Window System, 'configure' can usually find the X include and library files automatically, but if it doesn't, you can use the 'configure' options '--x-includes=DIR' and '--x-libraries=DIR' to specify their locations.

Some packages offer the ability to configure how verbose the execution of 'make' will be. For these packages, running './configure --enable-silent-rules' sets the default to minimal output, which can be overridden with 'make V=1'; while running './configure --disable-silent-rules' sets the default to verbose, which can be overridden with 'make V=0'.

9.9 Particular systems

On HP-UX, the default C compiler is not ANSI C compatible. If GNU CC is not installed, it is recommended to use the following options in order to use an ANSI C compiler:

```
./configure CC="cc -Ae -D_XOPEN_SOURCE=500"
```

and if that doesn't work, install pre-built binaries of GCC for HP-UX.

On OSF/1 a.k.a. Tru64, some versions of the default C compiler cannot parse its '<wchar.h>' header file. The option '-nodtk' can be used as a workaround. If GNU CC is not installed, it is therefore recommended to try

```
./configure CC="cc"
```

and if that doesn't work, try

```
./configure CC="cc -nodtk"
```

On Solaris, don't put '/usr/ucb' early in your 'PATH'. This directory contains several dysfunctional programs; working

variants of these programs are available in ‘/usr/bin’. So,
if you need ‘/usr/ucb’ in your ‘PATH’, put it _after_ ‘/usr/bin’.

On Haiku, software installed for all users goes in ‘/boot/common’,
not ‘/usr/local’. It is recommended to use the following options:

```
./cmake -DCMAKE_INSTALL_PREFIX=/boot/common
```

9.10 Specifying the System Type

There may be some features ‘configure’ cannot figure out automatically,
but needs to determine by the type of machine the package will
run on. Usually, assuming the package is built to be run on
the _same_ architectures, ‘configure’ can figure that out,
but if it prints a message saying it cannot guess the machine
type, give it the ‘--build=TYPE’ option. TYPE can either be
a short name for the system type, such as ‘sun4’, or a canonical
name which has the form CPU-COMPANY-SYSTEM

where SYSTEM can have one of these forms:

- OS
- KERNEL-OS

See the file ‘config.sub’ for the possible values of each field.
If ‘config.sub’ isn’t included in this package, then this package
doesn’t need to know the machine type.

If you are _building_ compiler tools for cross-compiling, you
should use the option ‘--target=TYPE’ to select the type of
system they will produce code for.

If you want to _use_ a cross compiler, that generates code
for a platform different from the build platform, you should
specify the "host" platform (i.e., that on which the generated
programs will eventually be run) with ‘--host=TYPE’.

9.11 Sharing Defaults

If you want to set default values for ‘configure’ scripts to
share, you can create a site shell script called ‘config.site’
that gives default values for variables like ‘CC’, ‘cache_-
file’, and ‘prefix’. ‘configure’ looks for ‘PREFIX/share/config.site’
if it exists, then ‘PREFIX/etc/config.site’ if it exists. Or,
you can set the ‘CONFIG_SITE’ environment variable to the location
of the site script. A warning: not all ‘configure’ scripts
look for a site script.

9.12 Defining Variables

Variables not defined in a site shell script can be set in the environment passed to 'configure'. However, some packages may run configure again during the build, and the customized values of these variables may be lost. In order to avoid this problem, you should set them in the 'configure' command line, using 'VAR=value'. For example:

```
./configure CC=/usr/local2/bin/gcc
```

causes the specified 'gcc' to be used as the C compiler (unless it is overridden in the site shell script).

Unfortunately, this technique does not work for 'CONFIG_SHELL' due to an Autoconf bug. Until the bug is fixed you can use this workaround:

```
CONFIG_SHELL=/bin/bash /bin/bash ./configure CONFIG_SHELL=/bin/bash
```

9.13 'cmake' Invocation

'cmake' recognizes the following options to control how it operates.

- '--help', '-h' print a summary of all of the options to 'cmake', and exit.
- '--help=short', '--help=recursive' print a summary of the options unique to this package's 'configure', and exit. The 'short' variant lists options used only in the top level, while the 'recursive' variant lists options also present in any nested packages.
- '--version', '-V' print the version of Autoconf used to generate the 'configure' script, and exit.
- '--cache-file=FILE' enable the cache: use and save the results of the tests in FILE, traditionally 'config.cache'. FILE defaults to '/dev/null' to disable caching.
- '--config-cache', '-C' alias for '--cache-file=config.cache'.
- '--quiet', '--silent', '-q' do not print messages saying which checks are being made. To suppress all normal output, redirect it to '/dev/null' (any error messages will still be shown).
- '--srcdir=DIR' look for the package's source code in directory DIR. Usually 'configure' can determine that directory automatically.
- '--prefix=DIR' use DIR as the installation prefix.

See also

Installation Names for more details, including other options available for fine-tuning the installation locations.

- '--no-create', '-n' run the configure checks, but stop before creating any output files.

'cmake' also accepts some other, not widely useful, options. Run 'cmake' --help' for more details.

The 'cmake' script produces an ouput like this:

```
-- Requires Git without specifying any version
cmake -DCMAKE_INSTALL_PREFIX=/home/user/dev/deliveries/simfqt-0.5.0 \
 -DWITH_STDAIR_PREFIX=/home/user/dev/deliveries/stdair-stable \
 -DLIB_SUFFIX=64 -DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON ..
-- Current Git revision name: 0e31d63879056d26f01eb09757d232d247c42164 trunk
-- Requires Boost-1.41
-- Found Boost version: 1.44.0
-- Requires Readline without specifying any version
-- Found Readline version: 6.1
-- Requires MySQL without specifying any version
-- Using mysql-config: /usr/bin/mysql_config
-- Found MySQL version: 5.1.56
-- Requires SOCI-3.0
-- Using soci-config: /usr/bin/soci-config
-- SOCI headers are buried
-- Found SOCI with MySQL back-end support version: 3.0.0
-- Requires StdAir-0.35
-- Found StdAir version: 99.99.99
-- Requires Doxygen without specifying any version
-- Found Doxygen version: 1.7.4
-- Had to set the linker language for 'simfqtlib' to CXX
-- Test 'FQTTestSuite' to be built with 'FQTTestSuite.cpp'
--
-- ===============================================================
-- ---------------------------------
-- ---     Project Information     ---
-- ---------------------------------
-- PROJECT_NAME ................... : simfqt
-- PACKAGE_PRETTY_NAME ............ : SimFQT
-- PACKAGE ........................ : simfqt
-- PACKAGE_NAME ................... : SIMFQT
-- PACKAGE_BRIEF .................. : C++ Simulated Fare Quote System Library
-- PACKAGE_VERSION ................ : 99.99.99
-- GENERIC_LIB_VERSION ............ : 99.99.99
-- GENERIC_LIB_SOVERSION .......... : 99.99
--
-- ---------------------------------
-- ---     Build Configuration     ---
-- ---------------------------------
-- Modules to build ............... : simfqt
-- Libraries to build/install ..... : simfqtlib
-- Binaries to build/install ...... : simfqt;fareQuote
-- Modules to test ................ : simfqt
-- Binaries to test ............... : FQTTestSuitetst
--
-- * Module ....................... : simfqt
--   + Layers to build ............ : .;basic;bom;factory;command;service
```

```
--   + Dependencies on other layers :
--   + Libraries to build/install . : simfqtlib
--   + Executables to build/install : simfqt;fareQuote
--   + Tests to perform ........... : FQTTestSuitetst
--
-- BUILD_SHARED_LIBS ............. : ON
-- CMAKE_BUILD_TYPE .............. : Debug
--  * CMAKE_C_FLAGS .............. :
--  * CMAKE_CXX_FLAGS ............ : -Wall -Werror
--  * BUILD_FLAGS ................ :
--  * COMPILE_FLAGS .............. :
-- CMAKE_MODULE_PATH ............. : /home/localoriuser/dev/sim/simfqt/simfqtgit/config/
-- CMAKE_INSTALL_PREFIX .......... : /home/localoriuser/dev/deliveries/simfqt-99.99.99
--
-- * Doxygen:
--   - DOXYGEN_VERSION ............. : 1.7.4
--   - DOXYGEN_EXECUTABLE .......... : /usr/bin/doxygen
--   - DOXYGEN_DOT_EXECUTABLE ...... : DOXYGEN_DOT_EXECUTABLE-NOTFOUND
--   - DOXYGEN_DOT_PATH ............ :
--
-- ----------------------------------
-- --- Installation Configuration ---
-- ----------------------------------
-- INSTALL_LIB_DIR ............... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/lib
-- INSTALL_BIN_DIR ............... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/bin
-- INSTALL_INCLUDE_DIR ........... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/include
-- INSTALL_DATA_DIR .............. : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share
-- INSTALL_SAMPLE_DIR ............ : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share/simfq
-- INSTALL_DOC ................... : ON
--
-- ----------------------------------
-- ---   Packaging Configuration  ---
-- ----------------------------------
-- CPACK_PACKAGE_CONTACT ......... : Denis Arnaud <denis_arnaud - at - users dot sourceforge dot n
-- CPACK_PACKAGE_VENDOR .......... : Denis Arnaud
-- CPACK_PACKAGE_VERSION ......... : 99.99.99
-- CPACK_PACKAGE_DESCRIPTION_FILE . : /home/localoriuser/dev/sim/simfqt/simfqtgit/README
-- CPACK_RESOURCE_FILE_LICENSE .... : /home/localoriuser/dev/sim/simfqt/simfqtgit/COPYING
-- CPACK_GENERATOR ............... : TBZ2
-- CPACK_DEBIAN_PACKAGE_DEPENDS ... :
-- CPACK_SOURCE_GENERATOR ......... : TBZ2;TGZ
-- CPACK_SOURCE_PACKAGE_FILE_NAME . : simfqt-99.99.99
--
-- ---------------------------------
-- ---     External libraries    ---
-- ---------------------------------
--
-- * Boost:
--   - Boost_VERSION ............... : 104400
--   - Boost_LIB_VERSION ........... : 1_44
--   - Boost_HUMAN_VERSION ......... : 1.44.0
--   - Boost_INCLUDE_DIRS .......... : /usr/include
--   - Boost required components .. : program_options;date_time;iostreams;serialization;filesystem;
--   - Boost required libraries ... : optimized;/usr/lib/libboost_iostreams-mt.so;debug;/usr/lib/li
--
-- * Readline:
--   - READLINE_VERSION ............ : 6.1
--   - READLINE_INCLUDE_DIR ........ : /usr/include
--   - READLINE_LIBRARY ............ : /usr/lib/libreadline.so
--
-- * MySQL:
--   - MYSQL_VERSION ............... : 5.1.56
```

```
--   - MYSQL_INCLUDE_DIR ......... : /usr/include/mysql
--   - MYSQL_LIBRARIES ........... : /usr/lib/mysql/libmysqlclient_r.so
--
-- * SOCI:
--   - SOCI_VERSION ............... : 3.0.0
--   - SOCI_INCLUDE_DIR ........... : /usr/include/soci
--   - SOCIMYSQL_INCLUDE_DIR ...... : /usr/include/soci
--   - SOCI_LIBRARIES ............. : /usr/lib/libsoci_core.so
--   - SOCIMYSQL_LIBRARIES ........ : /usr/lib/libsoci_mysql.so
--
-- * StdAir:
--   - STDAIR_VERSION ............. : 99.99.99
--   - STDAIR_BINARY_DIRS ......... : /home/localoriuser/dev/deliveries/stdair-0.3.0/bin
--   - STDAIR_EXECUTABLES ......... : stdair
--   - STDAIR_LIBRARY_DIRS ........ : /home/localoriuser/dev/deliveries/stdair-0.3.0/lib
--   - STDAIR_LIBRARIES ........... : stdairlib;stdairuicllib
--   - STDAIR_INCLUDE_DIRS ........ : /home/localoriuser/dev/deliveries/stdair-0.3.0/include
--   - STDAIR_SAMPLE_DIR .......... : /home/localoriuser/dev/deliveries/stdair-0.3.0/share/stdair/s
--
-- Change a value with: cmake -D<Variable>=<Value>
-- ============================================================
--
-- Configuring done
-- Generating done
-- Build files have been written to: /home/localoriuser/dev/sim/simfqt/simfqtgit/build
```

It is recommended that you check if your library has been compiled and linked properly and works as expected. To do so, you should execute the testing process 'make check'. As a result, you should obtain a similar report:

```
[  0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
    Start 1: FQTTestSuitetst
1/1 Test #1: FQTTestSuitetst ..................   Passed    0.43 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) =   0.47 sec
[100%] Built target check_simfqttst
[100%] Built target check
```

Check if all the executed tests PASSED. If not, please contact us by filling a bug-report.

Finally, you should install the compiled and linked library, include files and (optionally) HTML and PDF documentation by typing:

```
make install
```

Depending on the PREFIX settings during configuration, you might need the root (administrator) access to perform this step.

Eventually, you might invoke the following command

```
make clean
```

to remove all files created during compilation process, or even

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir build
cd build
```

to remove everything.

10 Linking with SimFQT

10.1 Table of Contents

10.2 Introduction

There are two convenient methods of linking your programs with the SimFQT library. The first one employs the `'pkg-config'` command (see http://pkgconfig.freedesktop.org/), whereas the second one uses `'simfqt-config'` script. These methods are shortly described below.

10.3 Dependencies

The SimFQT library depends on several other C++ components.

10.3.1 StdAir

Among them, as for now, only StdAir has been packaged. The support for StdAir is taken in charge by a dedicated M4 macro file (namely, `'stdair.m4'`), from the configuration script (generated thanks to `'configure.ac'`).

10.4 Using the pkg-config command

'pkg-config' is a helper tool used when compiling applications and libraries. It helps you insert the correct compiler and linker options. The syntax of the 'pkg-config' is as follows:

```
pkg-config <options> <library_name>
```

For instance, assuming that you need to compile an SimFQT based program 'my_prog.cpp', you should use the following command:

```
g++ `pkg-config --cflags simfqt` -o my_prog my_prog.cpp \
 `pkg-config --libs simfqt`
```

For more information see the 'pkg-config' man pages.

10.5 Using the simfqt-config script

SimFQT provides a shell script called 'simfqt-config', which is installed by default in '$prefix/bin' ('/usr/local/bin') directory. It can be used to simplify compilation and linking of SimFQT based programs. The usage of this script is quite similar to the usage of the 'pkg-config' command.

Assuming that you need to compile the program 'my_prog.cpp' you can now do that with the following command:

```
g++ `simfqt-config --cflags` -o my_prog my_prog.cpp `simfqt-config --libs`
```

A list of 'simfqt-config' options can be obtained by typing:

```
simfqt-config --help
```

If the 'simfqt-config' command is not found by your shell, you should add its location '$prefix/bin' to the PATH environment variable, e.g.:

```
export PATH=/usr/local/bin:$PATH
```

10.6 M4 macro for the GNU Autotools

A M4 macro file is delivered with SimFQT, namely 'simfqt.m4', which can be found in, e.g., '/usr/share/aclocal'. When used by a 'configure' script, thanks to he 'AM_PATH_SIMFQT' macro (specified in the M4 macro file), the following Makefile variables are then defined:

- 'SIMFQT_VERSION' (e.g., defined to 0.2.0)
- 'SIMFQT_CFLAGS' (e.g., defined to '-I${prefix}/include')
- 'SIMFQT_LIBS' (e.g., defined to '-L${prefix}/lib -lsimfqt')

10.7 Using SimFQT with dynamic linking

When using static linking some of the library routines in SimFQT are copied into your executable program. This can lead to unnecessary large executables. To avoid having too large executable files you may use dynamic linking instead. Dynamic linking means that the actual linking is performed when the program is executed. This requires that the system is able to locate the shared SimFQT library file during your program execution. If you install the SimFQT library using a non-standard prefix, the 'LD_LIBRARY_PATH' environment variable might be used to inform the linker of the dynamic library location, e.g.:

```
export LD_LIBRARY_PATH=<SimFQT installation prefix>/lib:$LD_LIBRARY_PATH
```

11 Test Rules

This section describes rules how the functionality of the SimFQT library should be verified. In the 'tests' subdirectory test files are provided. All functionality should be tested using these test files.

11.1 The Test File

Each new SimFQT module/class should be accompanied with a test file. The test file is an implementation in C++ that tests the functionality of a function/class or a group of functions/classes called modules. The test file should test relevant parameter settings and input/output relations to guarantee correct functionality of the corresponding classes/functions. The test files should be maintained using version control and updated whenever new functionality is added to the SimFQT library.

The test file should print relevant data to a standard output that can be used to verify the functionality. All relevant parameter settings should be tested.

The test file should be placed in the 'tests' subdirectory and should have a name ending with '_test.cpp'.

11.2 The Reference File

Consider a test file named 'module_test.cpp'. A reference file named 'module_test.ref' should accompany the test file. The reference file contains a reference printout of the standard output generated when running the test program. The reference file should be maintained using version control and updated according to the test file.

11.3 Testing SimFQT Library

One can compile and execute all test programs from 'tests' subdirectory by typing

```
% make check
```

after successful compilation of the SimFQT library.

12 Users Guide

12.1 Table of Contents

12.2 Introduction

The `SimFQT` library contains classes for fare rule management. This document does not cover all the aspects of the `SimFQT` library. It does however explain the most important things you need to know in order to start using `SimFQT`.

12.3 Get Started

12.3.1 Get the SimFQT library

Clone locally the full Git project:

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

12.3.2 Build the SimFQT project

Link with StdAir, create the distribution package (say, 0.5.0) and compile using the following commands:

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir -p build
cd build
cmake -DCMAKE_INSTALL_PREFIX=~/dev/deliveries/simfqt-0.5.0 \
 -DWITH_STDAIR_PREFIX=~/dev/deliveries/stdair-stable \
 -DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON ..
make
```

12.3.3 Run the Tests

After building the SimFQT project, the following commands run the tests:

```
cd ~/dev/sim/simfqtgit
cd build
make check
```

As a result, you should obtain a similar report:

```
[  0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
    Start 1: FQTTestSuitetst
1/1 Test #1: FQTTestSuitetst ..................   Passed    0.15 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) =   0.16 sec
[100%] Built target check_simfqttst
[100%] Built target check
```

12.3.4 Install the SimFQT Project (Binaries, Documentation)

After the step Build the SimFQT project, to install the library and its header files, type:

```
cd ~/dev/sim/simfqtgit
cd build
make install
```

You can check that the executables and other required files have been copied into the given final directory:

```
cd ~dev/deliveries/simfqt-0.5.0
```

To generate the SimFQT project documentation, the commands are:

```
cd ~/dev/sim/simfqtgit
cd build
make doc
```

The SimFQT project documentation is available in the following formats: HTML, LaTeX. Those documents are available in a subdirectory:

```
cd ~/dev/sim/simfqtgit
cd build
cd doc
```

12.4 Input file of SimFQT Project

The fare input file structure should look like the following sample:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRan
      geEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; A
      dvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb
      Segments
// Segment: AirlineCode; Class;
1; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T; 3;
       150.0; SQ; Y;
2; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IN; 7; T; T; T; 3;
       150.0; SQ; Y;
3; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T; 3;
       150.0; SQ; Y;
4; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IN; 7; T; T; T; 3;
       150.0; SQ; Y;
5; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IN; 7; T; T; T; 3;
       150.0; SQ; Y;
6; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T; 3;
       150.0; SQ; Y;
7; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IF; 7; T; T; T; 3;
       150.0; SQ; Y;
8; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T; 3;
       150.0; SQ; Y;
9; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IF; 7; T; T; T; 3;
       150.0; SQ; Y;
10; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IF; 7; T; T; T; 3
      ; 150.0; SQ; Y;
```

Each line represents a fare rule (see SIMFQT::FareRuleStruct), i.e., each line tells us the price a customer will be asked according to a lot of criteria such as:

- the origin and destination of his travel (for instance from Singapour to Bangok in the first fare rule).
- the type of his travel, i.e. one-way "OW" or round trip "RT".
- the date and time he is willing to travel (each fare rule has a date range and a time range of validity).
- the place where he is buying the ticket, i.e. the point of sale.
- his prefered cabin.
- the channel of the booking described by a two letters code: direct(D)/indirect(I) and online(N)/offline(F).
- the date when he wants to buy the ticket, i.e. the advanced purchase required in number of days.
- the saturday night stay option, i.e. is he staying a staturday night between his inbound trip and his outbound one? "T" stands for true and "F" stands for false.
- the change fees option, i.e. are there fees to change his ticket? "T" stands for true and "F" stands for false.
- the refundable criterion, i.e. is the ticket refundable? "T" stands for true and "F" stands for false.
- the number of days he is willing to stay at the destination location (each fare rule has a minimum stay requirement in number of days).

Some fare input examples (including the example above named fare01.csv) are given in the stdair::samples directory.

12.5 The fare quoting BOM Tree

The Fare Quoting Business Object Model (BOM) tree is a structure permitting to store all the `SIMFQT::FareRuleStruct` objects of the simulation. That is why, the BOM tree is built parsing the fare file containing all the fare rules (as described in the previous section Input file of SimFQT Project). For convenience and first use of SimFQT (the input fare file building can be long and heavy), SimFQT API enables to build a small default BOM tree.

12.5.1 Build of the fare quoting BOM tree

First, a BOM root object (i.e., a root for all the classes in the project) is instantiated by the `stdair::STDAIR_ServiceContext` context object, when the `stdair::STDAIR_Service` is itself instantiated, that is to say during the instanciation of the `simfqt::SIMFQT_Service` object. The corresponding `type` (class) `stdair::BomRoot` is defined in the StdAir library.

Then, the BOM root can be either constructed thanks to the `simfqt::SIMFQT_Service::buildSampleBom()` method:

```
void buildSampleBom();
```

or can be constructed using the fare dump file described above thanks to the `simfqt::SIMFQT_Service::parseAndLoad (const stdair::Filename_T&)` method:

```
void parseAndLoad (const FareFilePath& iFareFilename);
```

12.5.2 Display of the fare quoting BOM tree

The fare quoting BOM tree can be displayed as done in the `batches::simfqt.cpp` program:

When the default bom tree is used (`-b` option of the main program `simfqt.cpp`), the fare quoting BOM tree display should look like:

```
================================================================
BomRoot:  -- ROOT --
================================================================
++++++++++++++++++++++++++++++++++++++++++++++++
AirportPair: LHR, SYD
++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------
DatePeriod: [2011-Jan-15/2011-Dec-30]
----------------------------------------
****************************************
PosChannel: LHR,DN
****************************************
--------------------------------------
TimePeriod: 00:00:00-23:00:00
--------------------------------------
------------------------------------
Fare-Features: RT -- 0-1-1-1-0
------------------------------------
----------------------------------
AirlineClassList: BA Y
----------------------------------
```

Here the fare quoting BOM tree is just composed of one fare rule.

12.5.3 Structure of the fare quoting BOM tree

As one can guess looking at the BOM tree display above, the tree is constructed as follow:

- At the top of the tree, we find a `stdair::BomRoot` object (i.e., a root for all the classes in the project).

- Just under the root, at the first level, we find `stdair::AirportPair` objects (i.e., all the possible combinations of origin-destination). In the instance above, the only combination possible is from London to Sydney.
- At the next level, under a particular `stdair::AirportPair`, we find all the date periods of the fare rules applicable for this origin-destination.
- Then, under a particular `stdair::DatePeriod`, we find all the possible combinations of point-of-sale and channel applicable.
- Under a particular `stdair::PosChannel` object, we have the correponding `stdair::TimePeriod` objects.
- At the next-to-last level, we have `stdair::FareFeatures` objects, that is to say the trip type, the advanced purchase and stay duration required, ...
- Finally we find the code of the airline publishing the current fare rule and the applicable class code.

12.6 The fare quoting procedure

The project SimFQT aims at fare quoting a list of `travel solutions` corresponding to a `booking request`. The fare quoter looks for all the fare rules matching a travel solution: when a fare rule matches, it creates a `fare option` object and adds this object to the current travel solution.

A few steps:

- Instanciate the default booking request
- Instanciate the default travel solution list
- Fare Quoting a list of travel solution

12.6.1 Instanciate the default booking request

A default booking request can be built using the `simfqt::SIMFQT_Service::buildBookingRequest` method:

```
stdair::BookingRequestStruct buildBookingRequest(const bool isForCRS = false)
  ;
```

12.6.2 Instanciate the default travel solution list

In the following sample, a list of travel solutions is given as input/output parameter of the `simfqt::SIMFQT_Service::buildSampleTravelSolutions` method:

```
void buildSampleTravelSolutions (stdair::TravelSolutionList_T&);
```

12.6.3 Fare Quoting a list of travel solution

Once a booking request, its correponding list of travel solutions and the fare Quote BOM tree are constructed, the main fonction of the module can be called:

```
void quotePrices (const stdair::BookingRequestStruct&,
                  stdair::TravelSolutionList_T&);
```

For each travel solution of the list, the applicable fare rules are picked from the BOM tree (information such as the trip type or the booking request date are only contained into the booking request, that is why we need this object too).

Each chosen fare rule enables to create a fare option structure which is finally stored into the travel solution.

12.7 Error Messages

This section lists the fatal errors you may encounter when using SimFQT:

- Fare input file not found
- Fare input file can not be parsed
- Error Messages for missing fare rules

12.7.1 Fare input file not found

In this case, the output error message will be similar to:

```
terminate called after throwing an instance of 'SIMFQT::FareInputFileNotFoundException'
  what():  The fare input file '~/<YourFileName>.csv' does not exist or can not be read
Aborted
```

You can check:

- the given path to your input file is correct.
- the specified file name <YourFileName> is correct.
- the file permission settings: is the file "readable"?.

12.7.2 Fare input file can not be parsed

This error message means that your input file has been opened but has not been fully read.

```
terminate called after throwing an instance of 'SIMFQT::FareFileParsingFailedException'
  what():  Parsing of fare input file: ~/<YourFileName>.csv failed
Aborted
```

Your input file structure is somehow incorrect. See the tutorial section How to build a fare input file?.

12.7.3 Error Messages for missing fare rules

If you obtain one of the error messages below and you are currently using your own input file, that means it has been fully read. However, at least one fare rule is missing to complete the fare quote.

- If your error message is about a missing airport pair, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::AirportPairNotFoundException'
  what():  No available fare rule for the Origin-Destination pair: xxx, xxx
Aborted
```

  You need to be sure that all your travel solutions have at least one corresponding origin-destination fare rule. It seems you should add one origin-destination (i.e., xxx, xxx) fare rule into your input file.

- If your error message is about a missing fare rule for a flight date, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::FlightDateNotFoundException'
  what():  No available fare rule for the flight date x, xxxx-xxx-xx and to the Origin-Destina
Aborted
```

  You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination and valid date range. It seems you should add/change a fare rule with the Origin-Destination pair: xxx, xxx: its date range must include the flight date xxxx-xxx-xx.

- If your error message is about a missing fare rule for a point-of sale and/or channel, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::PosOrChannelNotFoundException'
  what():  No available fare rule for the point of sale xxx, the channel xx, the flight date
Aborted
```

  You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale and same channel. It seems you should add/change a fare rule to have the same combination as given in the output error message: "the point of sale xxx, the channel xx, the flight date x, xxxx-xxx-xx and the Origin-Destination pair: xxx, xxx".

- If your error message is about a missing fare rule for a flight time, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::FlightTimeNotFoundException'
  what():  No available fare rule corresponding to 'xx; x, xxxx-xxx-xx; xxx, xxx; xx:xx' (par
Aborted
```

  You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel and valid time range. Add/change a fare rule if necessary.

- If your error message is about a missing fare rule for some features, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::FeaturesNotFoundException'
  what():  No available fare rule corresponding to a trip type xx, to a stay duration of x, t
Aborted
```

  You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel, valid time range and valid features. The features are:

  - the trip type. Maybe you need both "OW" (One-Way) and "RT" (Round-trip) fare rules?
  - the minimum stay duration. You can try "0" for this parameter to include all the possible stay durations.
  - the advance purchase. You can try "0" for this parameter to include all the booking requests up to departure date.

- If your error message is about a missing fare rule for an airline, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::AirlineNotFoundException'
  what():  No available fare rule corresponding to 'xx; x, xxxx-xxx-xx; xxx, xxx; xx:xx' (par
Aborted
```

  At least one of your fare rules is correct except that the fare into question must be defined by the airline operating (see the first two letters of the parsed key in the error message to know which airline is operating).

13 Supported Systems

13.1 Table of Contents

13.2 Introduction

This page is intended to provide a list of SimFQT supported systems, i.e. the systems on which configuration, installation and testing process of the SimFQT library has been sucessful. Results are grouped based on minor release number. Therefore, only the latest tests for bug-fix releases are included. Besides, the information on this page is divided into sections dependent on the operating system.

Where necessary, some extra information is given for each tested configuration, e.g. external libraries installed, configuration commands used, etc.

If you manage to compile, install and test the SimFQT library on a system not mentioned below, please let us know, so we could update this database.

13.3 SimFQT 3.10.x

13.3.1 Linux Systems

13.3.1.1 Fedora Core 4 with ATLAS

- **Platform**: Intel Pentium 4
- **Operating System**: Fedora Core 4 (x86)
- **Compiler**: g++ (GCC) 4.0.2 20051125
- **SimFQT release**: 3.10.0
- **External Libraries**: From FC4 distribution:
    - `fftw3.i386-3.0.1-3`
    - `fftw3-devel.i386-3.0.1-3`
    - `atlas-sse2.i386-3.6.0-8.fc4`
    - `atlas-sse2-devel.i386-3.6.0-8.fc4`
    - `blas.i386-3.0-35.fc4`

  - lapack.i386-3.0-35.fc4

- **Tests Status**: All tests PASSED
- **Comments**: SimFQT configured with:

```
% CXXFLAGS="-O3 -pipe -march=pentium4" ./configure
```

- **Date**: March 7, 2006
- **Tester**: Tony Ottosson

13.3.1.2 Gentoo Linux with ACML

- **Platform**: AMD Sempron 3000+
- **Operating System**: Gentoo Linux 2006.0 (x86 arch)
- **Compiler(s)**: g++ (GCC) 3.4.5
- **SimFQT release**: 3.10.1
- **External Libraries**: Compiled and installed from portage tree:
  - sci-libs/acml-3.0.0
- **Tests Status**: All tests PASSED
- **Comments**: BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ACML
% eselect lapack set ACML
```

  SimFQT configured with:

```
% export CPPFLAGS="-I/usr/include/acml"
% ./configure --with-blas="-lblas"
```

- **Date**: March 31, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.1.3 Gentoo Linux with ATLAS

- **Platform**: Intel Pentium M Centrino
- **Operating System**: Gentoo Linux 2006.0 (x86)
- **Compiler**: g++ (GCC) 3.4.5
- **SimFQT release**: 3.10.1
- **External Libraries**: Compiled and installed from portage tree:
  - sci-libs/fftw-3.1

  - `sci-libs/blas-atlas-3.6.0-r1`
  - `sci-libs/lapack-atlas-3.6.0`

- **Tests Status**: All tests PASSED
- **Comments**: BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ATLAS
% eselect lapack set ATLAS
```

  SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date**: March 31, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.1.4 Gentoo Linux with MKL

- **Platform**: Intel Pentium M Centrino
- **Operating System**: Gentoo Linux 2006.0 (x86 arch)
- **Compiler**: g++ (GCC) 3.4.5
- **SimFQT release**: 3.10.0
- **External Libraries**: Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: `/opt/intel/mkl/8.0.1`
- **Tests Status**: All tests PASSED
- **Comments**: SimFQT configured using the following commands:

```
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/32"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```

- **Date**: February 28, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.1.5 Gentoo Linux with NetLib's BLAS and LAPACK

- **Platform**: Intel Pentium M Centrino
- **Operating System**: Gentoo Linux 2006.0 (x86)
- **Compiler**: g++ (GCC) 3.4.5
- **SimFQT release**: 3.10.1
- **External Libraries**: Compiled and installed from portage tree:

  - sci-libs/fftw-3.1
  - sci-libs/blas-reference-19940131-r2
  - sci-libs/cblas-reference-20030223
  - sci-libs/lapack-reference-3.0-r2

- **Tests Status**: All tests PASSED
- **Comments**: BLAS and LAPACK libs set by using the following system commands:

```
% blas-config reference
% lapack-config reference
```

  SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date**: March 31, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.1.6 Red Hat Enterprise Linux with SimFQT External

- **Platform**: Intel Pentium 4
- **Operating System**: Red Hat Enterprise Linux AS release 4 (Nahant Update 2)
- **Compiler**: g++ (GCC) 3.4.4 20050721 (Red Hat 3.4.4-2)
- **SimFQT release**: 3.10.0
- **External Libraries**: BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package
- **Tests Status**: All tests PASSED
- **Date**: March 7, 2006
- **Tester**: Erik G. Larsson

13.3.1.7 SUSE Linux 10.0 with NetLib's BLAS and LAPACK

- **Platform**: Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System**: SUSE Linux 10.0 (x86_64)
- **Compiler(s)**: g++ (GCC) 4.0.2
- **SimFQT release**: 3.10.0
- **External Libraries**: BLAS, LAPACK and FFTW libraries installed from OpenSuse 10.0 RPM repository:
  - blas-3.0-926

  - `lapack-3.0-926`
  - `fftw3-3.0.1-114`
  - `fftw3-threads-3.0.1-114`
  - `fftw3-devel-3.0.1-114`

- **Tests Status**: All tests PASSED
- **Comments**: SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% ./configure --with-lapack="/usr/lib64/liblapack.so.3"
```

- **Date**: March 1, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.1.8 SUSE Linux 10.0 with MKL

- **Platform**: Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System**: SUSE Linux 10.0 (x86_64)
- **Compiler(s)**: g++ (GCC) 4.0.2
- **SimFQT release**: 3.10.0
- **External Libraries**: Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: `/opt/intel/mkl/8.0.1`
- **Tests Status**: All tests PASSED
- **Comments**: SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/em64t"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```

- **Date**: March 1, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.2 Windows Systems

13.3.2.1 Microsoft Windows XP with Cygwin

- **Platform**: AMD Sempron 3000+
- **Operating System**: Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s)**: g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release**: 3.10.1

- **External Libraries**: Installed from Cygwin's repository:
  - `fftw-3.0.1-2`
  - `fftw-dev-3.0.1-1`
  - `lapack-3.0-4`
- **Tests Status**: All tests PASSED
- **Comments**: Only static library can be built. SimFQT configured with:

```
% ./configure
```

- **Date**: March 31, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.2.2 Microsoft Windows XP with Cygwin and ATLAS

- **Platform**: AMD Sempron 3000+
- **Operating System**: Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s)**: g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release**: 3.10.1
- **External Libraries**: Installed from Cygwin's repository:
  - `fftw-3.0.1-2`
  - `fftw-dev-3.0.1-1`

  ATLAS BLAS and LAPACK libraries from SimFQT External 2.1.1 package configured using:

```
% ./configure --enable-atlas --disable-fftw
```

- **Tests Status**: All tests PASSED
- **Comments**: Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% ./configure
```

- **Date**: March 31, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.2.3 Microsoft Windows XP with Cygwin and ACML

- **Platform**: AMD Sempron 3000+
- **Operating System**: Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s)**: g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release**: 3.10.2
- **External Libraries**: ACML version 3.1.0 (`acml3.1.0-32-win32-g77.exe`) installed into a default directory, i.e. `"c:\Program Files\AMD\acml3.1.0"`
- **Tests Status**: All tests PASSED
- **Comments**: Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```

- **Date**: May 15, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.2.4 Microsoft Windows XP with MinGW, MSYS and ACML

- **Platform**: AMD Sempron 3000+
- **Operating System**: Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s)**: g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release**: 3.10.2
- **External Libraries**: ACML version 3.1.0 (`acml3.1.0-32-win32-g77.exe`) installed into a default directory, i.e. `"c:\Program Files\AMD\acml3.1.0"`
- **Tests Status**: All tests PASSED
- **Comments**: Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```

- **Date**: May 15, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.2.5 Microsoft Windows XP with MinGW, MSYS and SimFQT External

- **Platform**: AMD Sempron 3000+
- **Operating System**: Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s)**: g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release**: 3.10.5
- **External Libraries**: BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.2.0 package
- **Tests Status**: All tests PASSED
- **Comments**: Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-Wall -O3 -march=athlon-tbird -pipe"
% ./configure --disable-html-doc
```

- **Date**: August 11, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.2.6 Microsoft Windows XP with MS Visual C++ and Intel MKL

- **Platform**: AMD Sempron 3000+
- **Operating System**: Microsoft Windows XP SP2
- **Compiler(s)**: Microsoft Visual C++ 2005 .NET
- **SimFQT release**: 3.10.5
- **External Libraries**: Intel Math Kernel Library (MKL) 8.1 installed manually in the following directory: "`C:\Program Files\Intel\MKL\8.1`"
- **Tests Status**: Not fully tested. Some SimFQT based programs compiled and run with success.
- **Comments**: Only static library can be built. SimFQT built by opening the "`win32\simfqt.vcproj`" project file in MSVC++ and executing "`Build -> Build Solution`" command from menu.
- **Date**: August 11, 2006
- **Tester**: Adam Piatyszek (ediap)

13.3.3 Unix Systems

13.3.3.1 SunOS 5.9 with SimFQT External

- **Platform**: SUNW, Sun-Blade-100 (SPARC)
- **Operating System**: SunOS 5.9 Generic_112233-10
- **Compiler(s)**: g++ (GCC) 3.4.5
- **SimFQT release**: 3.10.2
- **External Libraries**: BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package. The following configuration command has been used:

```
% export CFLAGS="-mcpu=ultrasparc -O2 -pipe -funroll-all-loops"
% ./configure
```

- **Tests Status**: All tests PASSED
- **Comments**: SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-mcpu=ultrasparc -O2 -pipe"
% ./configure --enable-debug
```

- **Date**: May 15, 2006
- **Tester**: Adam Piatyszek (ediap)

14 SimFQT Supported Systems (Previous Releases)

14.1 SimFQT 3.9.1

14.2 SimFQT 3.9.0

14.3 SimFQT 3.8.1

15 Tutorials

15.1 Table of Contents

15.2 Preparing the SimFQT Project for Development

The source code for these examples can be found in the `batches` and `test/simfqt` directories. They are compiled along with the rest of the `SimFQT` project. See the Users Guide for more details on how to build the `SimFQT` project.

15.3 Your first fareQuote

15.3.1 Summary of the different steps

All the steps below can be found in the same order in the batch `simfqt.cpp` program.

First, we instanciate the simfqtService object:

```
std::ofstream logOutputFile;
const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
SIMFQT::SIMFQT_Service simfqtService (lLogParams);
```

Then, we construct a default sample list of travel solutions and a default booking request (as mentionned in Instanciate the default booking request and Instanciate the default travel solution list parts):

```
stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
   return ioBookingRequestStruct;
```

For basic use, the default BOM tree can be built using:

```
   simfqtService.buildSampleBom();
```

The main step is the fare quoting (see The fare quoting procedure):

```
       simfqtService.quotePrices (lInteractiveBookingRequest,
```

15.3.2 Result of the Batch Program

When the `simfqt.cpp` program is run (with the `-b` option), the log output file should look like:

```
[D]../../../simfqt/batches/simfqt.cpp:186: Welcome to Simfqt
[D]../../../simfqt/batches/simfqt.cpp:212: Travel solutions:
    [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 ---  ---
[D]../../../simfqt/command/FareQuoter.cpp:519: Segment path: BA; 9, 2011-06-10; L
      HR, SYD; 21:45. A corresponding fare option for the 'BA Y' class is: Class path:
      Y; 450 EUR; conditions: 1 1 1
[D]../../../simfqt/service/SIMFQT_Service.cpp:352: Fare Quote retrieving: 0.00140
      3 - SIMFQT_ServiceContext -- Owns StdAir service: 1
[D]../../../simfqt/batches/simfqt.cpp:214: BOM tree:
================================================================
BomRoot:  -- ROOT --
================================================================
++++++++++++++++++++++++++++++++++++++++++++++++
AirportPair: LHR, SYD
++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------
DatePeriod: [2011-Jan-15/2011-Dec-30]
----------------------------------------
****************************************
PosChannel: LHR,DN
****************************************
----------------------------------------
TimePeriod: 00:00:00-23:00:00
----------------------------------------
----------------------------------------
Fare-Features: RT -- 0-1-1-1-0
----------------------------------------
------------------------------------
AirlineClassList: BA Y
------------------------------------

[D]../../../simfqt/batches/simfqt.cpp:219: Travel solutions:
    [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---
```

What is interesting is to compare the travel solution list (here reduced to a single travel solution) displayed before:

```
    [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 ---  ---
```

and after the fare quoting:

```
    [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---
```

Between the two groups of dashes, we can see that a fare option structure has been added by the fare quoter: the price is 450 EUR for the Y class, the ticket is refundable but there are exchange fees and the customer must stay over on saturday night.

Let's return to our default BOM tree display: the only fare rule stored was a match for the travel solution into consideration (same origin airport, same destination airport, flight date included in the fare rule date range, same airline "BA", ...).

By looking at the fare rule trip type "RT", we can guess we face a round trip fare: that means the price given in the default bom tree construction in `stdair::CmdBomManager.hpp` has been divided by 2 because we are considering either an inbound trip or an outbound one.

15.4 Fare quoting with an input file

15.4.1 How to build a fare input file?

The objective here is to build a fare input file to fare quote the default travel solution list built using:

```
stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
```

This travel solution list, reduced to a singleton, can be displayed as done before:

```
    [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 ---  ---
```

We deduce:

- we need a fare rule whose origin-destination couple is "LHR, SYD".
- the date range must include the date "2011-06-10".
- the time range must include the time "21:45".
- the airline operating is "BA", so it must be the airline pricing.

We can deduce a part of our fare rule file :

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRan
      geEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; A
      dvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb
      Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ???; ?; ??; ?; ?; ?; ?; ?;
       ????; BA; ?;
```

We have no information about stay duration and advance purchase (such information are contained into the booking request): so let us put "0" to embrace all the requests possible.

No information for the point-of-sale and the channel too: let us consider all the channels ("IN", "DN", "IF" and DF") and all the points of sale (the origin "LHR", the destination "SYD" and the rest-of-the-world "ROW") existing. To access this information, we could look into the default booking request.

The input file is now:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRan
      geEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; A
      dvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb
      Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IN; 0; ?; ?; ?; 0;
       ????; BA; ?;
2; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IF; 0; ?; ?; ?; 0;
```

```
       ????; BA; ?;
3; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DN; 0; ?; ?; ?; 0;
       ????; BA; ?;
4; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DF; 0; ?; ?; ?; 0;
       ????; BA; ?;
5; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IN; 0; ?; ?; ?; 0;
       ????; BA; ?;
6; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IF; 0; ?; ?; ?; 0;
       ????; BA; ?;
7; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DN; 0; ?; ?; ?; 0;
       ????; BA; ?;
8; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DF; 0; ?; ?; ?; 0;
       ????; BA; ?;
9; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IN; 0; ?; ?; ?; 0;
       ????; BA; ?;
10; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IF; 0; ?; ?; ?; 0
      ; ????; BA; ?;
11; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DN; 0; ?; ?; ?; 0
       ; ????; BA; ?;
12; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DF; 0; ?; ?; ?; 0
      ; ????; BA; ?;
```

Let us say we have just the Economy cabin "Y" and Bristish Airways prices ticket for class "Y".

No information about the trip type, so we duplicate all the fare rules for both type: one-way "OW" and round-trip "RT" (to access this information, we could look to the default booking request).

The fare options are all set to a default value "T" (meaning true) and the fare values are chosen to be all distinct.

We obtain:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRan
      geEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; A
      dvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb
      Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T; 0;
       50; BA; Y;
2; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T; 0;
       150; BA; Y;
3; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T; 0;
       250; BA; Y;
4; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T; 0;
       350; BA; Y;
5; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T; 0;
       450; BA; Y;
6; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T; 0;
       550; BA; Y;
7; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T; 0;
       650; BA; Y;
8; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T; 0;
       750; BA; Y;
9; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T; 0;
       850; BA; Y;
10; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T; 0
      ; 950; BA; Y;
11; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T; 0
       ; 1050; BA; Y;
```

```
12; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T; 0
      ; 1150; BA; Y;
13; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T; 0
      ; 90; BA; Y;
14; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T; 0
      ; 190; BA; Y;
15; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T; 0
      ; 290; BA; Y;
16; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T; 0
      ; 390; BA; Y;
17; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T; 0
      ; 490; BA; Y;
18; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T; 0
      ; 590; BA; Y;
19; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T; 0
      ; 690; BA; Y;
20; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T; 0
      ; 790; BA; Y;
21; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T; 0
      ; 890; BA; Y;
22; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T; 0
      ; 990; BA; Y;
23; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T; 0
      ; 1090; BA; Y;
24; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T; 0
      ; 1190; BA; Y;
```

15.4.2 Building the BOM tree with an input file

The steps are the same as before Summary of the different steps except the bom tree must be built using the fare input file :

15.4.3 Result of the Batch Program

When the `simfqt.cpp` program is run with the `-f` option linking with the file built just above:

```
~/simfqt -f ~/<YourFileName>.csv
```

the last lines of the log output should look like:

```
[D]~/simfqtgit/simfqt/batches/simfqt.cpp:223: Travel solutions:
    [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 145, 1 1 1 ---
```

We have just one fare option added to the travel solution. We can deduce from the price value 145 that the fare quoter used the fare rule number 15 to price the travel solution. We have an inbound or outbound trip of a round trip: the total price 290 has been divided by 2.

16 Command-Line Test to Demonstrate How To Test the SimFQT Project

```
 */
// ////////////////////////////////////////////////////////////////////
// Import section
// ////////////////////////////////////////////////////////////////////
// STL
#include <sstream>
#include <fstream>
#include <string>
// Boost Unit Test Framework (UTF)
#define BOOST_TEST_DYN_LINK
#define BOOST_TEST_MAIN
#define BOOST_TEST_MODULE FQTTestSuite
#include <boost/test/unit_test.hpp>
// StdAir
#include <stdair/basic/BasLogParams.hpp>
#include <stdair/basic/BasDBParams.hpp>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
// SimFQT
#include <simfqt/SIMFQT_Service.hpp>
#include <simfqt/config/simfqt-paths.hpp>

namespace boost_utf = boost::unit_test;

struct UnitTestConfig {
  UnitTestConfig() {
    static std::ofstream _test_log ("FQTTestSuite_utfresults.xml");
    boost_utf::unit_test_log.set_stream (_test_log);
    boost_utf::unit_test_log.set_format (boost_utf::XML);
    boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
    //boost_utf::unit_test_log.set_threshold_level (boost_utf::log_successful_tes
      ts);
  }

  ~UnitTestConfig() {
  }
};

// ////////////////////////////////////////////////////////////////////
void testFareQuoterHelper (const unsigned short iTestFlag,
                           const stdair::Filename_T iFareInputFilename,
                           const bool isBuiltin) {

  // Output log File
  std::ostringstream oStr;
  oStr << "FQTTestSuite_" << iTestFlag << ".log";
  const stdair::Filename_T lLogFilename (oStr.str());

  // Set the log parameters
  std::ofstream logOutputFile;
  // Open and clean the log outputfile
  logOutputFile.open (lLogFilename.c_str());
  logOutputFile.clear();

  // Initialise the SimFQT service object
  const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
```

```
                                        logOutputFile);

  // Initialise the Simfqt service object
  SIMFQT::SIMFQT_Service simfqtService (lLogParams);

  // Check wether or not a (CSV) input file should be read
  if (isBuiltin == true) {

    // Build the default sample BOM tree (filled with fares) for Simfqt
    simfqtService.buildSampleBom();

  } else {

    // Build the BOM tree from parsing the fare input file
    SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
    simfqtService.parseAndLoad (lFareFilePath);
  }

  // Build a sample list of travel solutions and a booking request.
  stdair::TravelSolutionList_T lTravelSolutionList;
  simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
  stdair::BookingRequestStruct lBookingRequest =
    simfqtService.buildBookingRequest();

  // Try to fareQuote the sample list of travel solutions
  simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);

  // Close the log file
  logOutputFile.close();

}

// /////////////// Main: Unit Test Suite //////////////

// Set the UTF configuration (re-direct the output to a specific file)
BOOST_GLOBAL_FIXTURE (UnitTestConfig);

// Start the test suite
BOOST_AUTO_TEST_SUITE (master_test_suite)


BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin));


}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError01.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
```

```
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
                     SIMFQT::AirportPairNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError02.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
                     SIMFQT::PosOrChannelNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError03.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
                     SIMFQT::FlightDateNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError04.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
                     SIMFQT::FlightTimeNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError05.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
                     SIMFQT::FeaturesNotFoundException);
}
```

```
BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError06.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
                     SIMFQT::AirlineNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError07.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
                     SIMFQT::FareFileParsingFailedException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {

  // Input file name
  const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/missingFile.cs
      v");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = false;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
                     SIMFQT::FareInputFileNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {

  // Input file name
  const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/ ");

  // State whether the BOM tree should be built-in or parsed from an input file
  const bool isBuiltin = true;

  // Try to fareQuote the sample default list of travel solutions
  BOOST_CHECK_NO_THROW(testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin));

}


// End the test suite
BOOST_AUTO_TEST_SUITE_END()

/*!
```

17 Directory Hierarchy

17.1 Directories

This directory hierarchy is sorted roughly, but not completely, alphabetically:

18 Namespace Index

18.1 Namespace List

Here is a list of all namespaces with brief descriptions:

19 Class Index

19.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

20 Class Index

20.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

21 File Index

21.1 File List

Here is a list of all files with brief descriptions:

22 Directory Documentation

22.1 simfqt/basic/ Directory Reference

Files

- file BasConst.cpp
- file BasConst_General.hpp
- file BasConst_SIMFQT_Service.hpp

22.2 simfqt/batches/ Directory Reference

Files

- file simfqt_parseFareRules.cpp

22.3 simfqt/bom/ Directory Reference

Files

- file FareRuleStruct.cpp
- file FareRuleStruct.hpp

22.4 simfqt/ui/cmdline/ Directory Reference

Files

- file simfqt.cpp

22.5 simfqt/command/ Directory Reference

Files

- file FareParser.cpp
- file FareParser.hpp
- file FareParserHelper.cpp
- file FareParserHelper.hpp
- file FareQuoter.cpp
- file FareQuoter.hpp
- file FareRuleGenerator.cpp
- file FareRuleGenerator.hpp

22.6 simfqt/config/ Directory Reference

Files

- file simfqt-paths.hpp

22.7 simfqt/factory/ Directory Reference

Files

- file FacSimfqtServiceContext.cpp
- file FacSimfqtServiceContext.hpp

22.8 simfqt/service/ Directory Reference

Files

- file SIMFQT_Service.cpp
- file SIMFQT_ServiceContext.cpp
- file SIMFQT_ServiceContext.hpp

22.9 test/simfqt/ Directory Reference

Files

- file FQTTestSuite.cpp

22.10 simfqt/ Directory Reference

Directories

- directory basic
- directory batches
- directory bom
- directory command
- directory config
- directory factory
- directory service
- directory ui

Files

- file SIMFQT_Service.hpp
- file SIMFQT_Types.hpp

22.11 test/ Directory Reference

Directories

- directory simfqt

22.12 simfqt/ui/ Directory Reference

Directories

- directory cmdline

23 Namespace Documentation

23.1 SIMFQT Namespace Reference

Namespaces

- namespace FareParserHelper

Classes

- struct FareRuleStruct
- class FareParser
- class FareRuleFileParser
- class FareQuoter

Command wrapping the pricing request process.

- class FareRuleGenerator
- class FacSimfqtServiceContext

  Factory for the service context.
- class SIMFQT_ServiceContext

  Class holding the context of the SimFQT services.
- class SIMFQT_Service

  Interface for the SIMFQT Services.
- class FareFileParsingFailedException
- class AirportPairNotFoundException
- class PosOrChannelNotFoundException
- class FlightDateNotFoundException
- class FlightTimeNotFoundException
- class FeaturesNotFoundException
- class AirlineNotFoundException
- class FareInputFileNotFoundException
- class QuotingException
- class FareFilePath

Typedefs

- typedef unsigned int FareQuoteID_T
- typedef boost::shared_ptr< SIMFQT_Service > SIMFQT_ServicePtr_T

Variables

- const std::string DEFAULT_FARE_QUOTER_ID = "IATA"

23.1.1 Typedef Documentation

23.1.1.1 typedef unsigned int SIMFQT::FareQuoteID_T

ID for the Fare Quote system.

Definition at line 143 of file SIMFQT_Types.hpp.

23.1.1.2 typedef boost::shared_ptr<SIMFQT_Service> SIMFQT::SIMFQT_ServicePtr_T

(Smart) Pointer on the SimFQT service handler.

Definition at line 148 of file SIMFQT_Types.hpp.

23.1.2 Variable Documentation

23.1.2.1 const std::string SIMFQT::DEFAULT_FARE_QUOTER_ID = "IATA"

Default ID for the SIMFQT_Service.

Definition at line 10 of file BasConst.cpp.

23.2 SIMFQT::FareParserHelper Namespace Reference

Classes

- struct ParserSemanticAction
- struct storeFareId
- struct storeOrigin
- struct storeDestination
- struct storeTripType
- struct storeDateRangeStart
- struct storeDateRangeEnd
- struct storeStartRangeTime
- struct storeEndRangeTime
- struct storePOS
- struct storeCabinCode
- struct storeChannel
- struct storeAdvancePurchase
- struct storeSaturdayStay
- struct storeChangeFees
- struct storeNonRefundable
- struct storeMinimumStay
- struct storeFare
- struct storeAirlineCode
- struct storeClass
- struct doEndFare
- struct FareRuleParser

Variables

- stdair::int1_p_t int1_p
- stdair::uint2_p_t uint2_p
- stdair::uint4_p_t uint4_p
- stdair::uint1_4_p_t uint1_4_p
- stdair::hour_p_t hour_p
- stdair::minute_p_t minute_p
- stdair::second_p_t second_p
- stdair::year_p_t year_p
- stdair::month_p_t month_p
- stdair::day_p_t day_p

23.2.1 Variable Documentation

23.2.1.1 stdair::int1_p_t SIMFQT::FareParserHelper::int1_p

Namespaces. 1-digit-integer parser

Definition at line 440 of file FareParserHelper.cpp.

23.2.1.2 stdair::uint2_p_t SIMFQT::FareParserHelper::uint2_p

2-digit-integer parser

Definition at line 443 of file FareParserHelper.cpp.

23.2.1.3 stdair::uint4_p_t SIMFQT::FareParserHelper::uint4_p

4-digit-integer parser

Definition at line 446 of file FareParserHelper.cpp.

23.2.1.4 stdair::uint1_4_p_t SIMFQT::FareParserHelper::uint1_4_p

Up-to-4-digit-integer parser

Definition at line 449 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

23.2.1.5 stdair::hour_p_t SIMFQT::FareParserHelper::hour_p

Time element parsers.

Definition at line 452 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

23.2.1.6 stdair::minute_p_t SIMFQT::FareParserHelper::minute_p

Definition at line 453 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

23.2.1.7 stdair::second_p_t SIMFQT::FareParserHelper::second_p

Definition at line 454 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

23.2.1.8 stdair::year_p_t SIMFQT::FareParserHelper::year_p

Date element parsers.

Definition at line 457 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

23.2.1.9 stdair::month_p_t SIMFQT::FareParserHelper::month_p

Definition at line 458 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

23.2.1.10 stdair::day_p_t SIMFQT::FareParserHelper::day_p

Definition at line 459 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

23.3 stdair Namespace Reference

Forward declarations.

23.3.1 Detailed Description

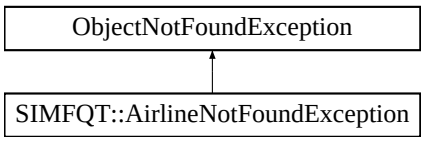
Forward declarations.

24 Class Documentation

24.1 SIMFQT::AirlineNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::AirlineNotFoundException:



Public Member Functions

- AirlineNotFoundException (const std::string &iWhat)

24.1.1 Detailed Description

The airline can not be found.

Definition at line 99 of file SIMFQT_Types.hpp.

24.1.2 Constructor & Destructor Documentation

24.1.2.1 SIMFQT::AirlineNotFoundException::AirlineNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 104 of file SIMFQT_Types.hpp.

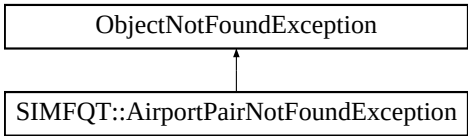
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.2 SIMFQT::AirportPairNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::AirportPairNotFoundException:



Public Member Functions

- AirportPairNotFoundException (const std::string &iWhat)

24.2.1 Detailed Description

The given airport pair can not be found.

Definition at line 39 of file SIMFQT_Types.hpp.

24.2.2 Constructor & Destructor Documentation

24.2.2.1 SIMFQT::AirportPairNotFoundException::AirportPairNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

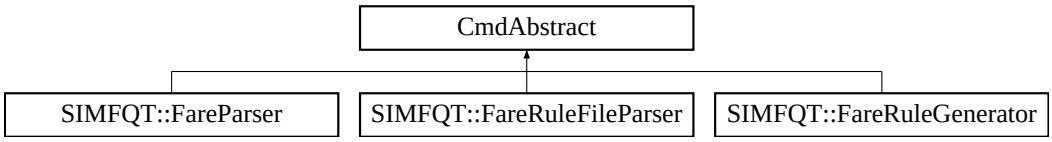
Definition at line 44 of file SIMFQT_Types.hpp.

The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.3 CmdAbstract Class Reference

Inheritance diagram for CmdAbstract:



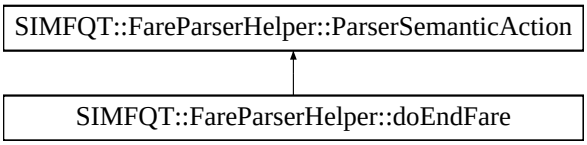
The documentation for this class was generated from the following file:

- simfqt/command/FareRuleGenerator.hpp

24.4 SIMFQT::FareParserHelper::doEndFare Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::doEndFare:



Public Member Functions

- doEndFare (stdair::BomRoot &, FareRuleStruct &)
- void operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- stdair::BomRoot & _bomRoot
- FareRuleStruct & _fareRule

24.4.1 Detailed Description

Mark the end of the fare-rule parsing.

Definition at line 230 of file FareParserHelper.hpp.

24.4.2 Constructor & Destructor Documentation

24.4.2.1 SIMFQT::FareParserHelper::doEndFare::doEndFare (stdair::BomRoot & *ioBomRoot,* FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 413 of file FareParserHelper.cpp.

24.4.3 Member Function Documentation

24.4.3.1 void SIMFQT::FareParserHelper::doEndFare::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 420 of file FareParserHelper.cpp.

References _bomRoot, SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::describe().

24.4.4 Member Data Documentation

24.4.4.1 stdair::BomRoot& SIMFQT::FareParserHelper::doEndFare::_bomRoot

Actor Specific Context.

Definition at line 238 of file FareParserHelper.hpp.

Referenced by operator()().

24.4.4.2 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

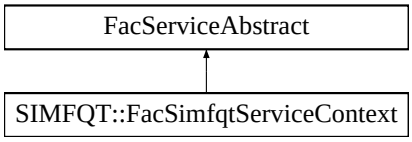
Referenced by operator()(), SIMFQT::FareParserHelper::storeClass::operator()(), SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator(SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::oper SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.5 FacServiceAbstract Class Reference

Inheritance diagram for FacServiceAbstract:



The documentation for this class was generated from the following file:

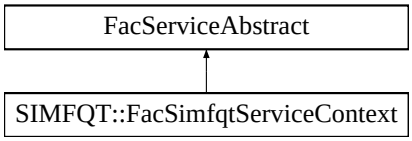
- simfqt/factory/FacSimfqtServiceContext.hpp

24.6 SIMFQT::FacSimfqtServiceContext Class Reference

Factory for the service context.

`#include <simfqt/factory/FacSimfqtServiceContext.hpp>`

Inheritance diagram for SIMFQT::FacSimfqtServiceContext:



Public Member Functions

- ~FacSimfqtServiceContext ()
- SIMFQT_ServiceContext & create ()

Static Public Member Functions

- static FacSimfqtServiceContext & instance ()

Protected Member Functions

- FacSimfqtServiceContext ()

24.6.1 Detailed Description

Factory for the service context.

Definition at line 22 of file FacSimfqtServiceContext.hpp.

24.6.2 Constructor & Destructor Documentation

24.6.2.1 SIMFQT::FacSimfqtServiceContext::~FacSimfqtServiceContext ( )

Destructor.

The Destruction put the _instance to NULL in order to be clean for the next FacSimfqtServiceContext::instance().

Definition at line 17 of file FacSimfqtServiceContext.cpp.

24.6.2.2 SIMFQT::FacSimfqtServiceContext::FacSimfqtServiceContext ( ) [inline, protected]

Default Constructor.

This constructor is protected in order to ensure the singleton pattern.

Definition at line 57 of file FacSimfqtServiceContext.hpp.

Referenced by instance().

24.6.3 Member Function Documentation

24.6.3.1 FacSimfqtServiceContext & SIMFQT::FacSimfqtServiceContext::instance ( ) [static]

Provide the unique instance.

The singleton is instantiated when first used.

Returns

FacServiceContext&

Definition at line 22 of file FacSimfqtServiceContext.cpp.

References FacSimfqtServiceContext().

24.6.3.2 SIMFQT_ServiceContext & SIMFQT::FacSimfqtServiceContext::create ( )

Create a new ServiceContext object.

This new object is added to the list of instantiated objects.

Returns

ServiceContext& The newly created object.

Definition at line 34 of file FacSimfqtServiceContext.cpp.

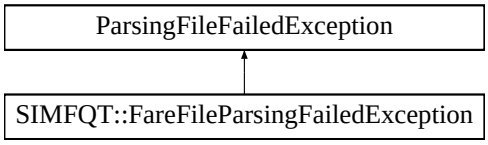
The documentation for this class was generated from the following files:

- simfqt/factory/FacSimfqtServiceContext.hpp
- simfqt/factory/FacSimfqtServiceContext.cpp

24.7 SIMFQT::FareFileParsingFailedException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::FareFileParsingFailedException:



Public Member Functions

- FareFileParsingFailedException (const std::string &iWhat)

24.7.1 Detailed Description

The fare input file can not be parsed.

Definition at line 26 of file SIMFQT_Types.hpp.

24.7.2 Constructor & Destructor Documentation

24.7.2.1 SIMFQT::FareFileParsingFailedException::FareFileParsingFailedException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 32 of file SIMFQT_Types.hpp.

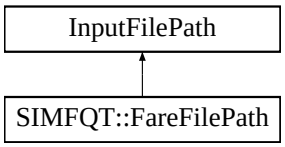
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.8 SIMFQT::FareFilePath Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::FareFilePath:



Public Member Functions

- FareFilePath (const stdair::Filename_T &iFilename)

24.8.1 Detailed Description

Fare input file.

Definition at line 130 of file SIMFQT_Types.hpp.

24.8.2 Constructor & Destructor Documentation

24.8.2.1 SIMFQT::FareFilePath::FareFilePath (const stdair::Filename_T & *iFilename*) [inline, explicit]

Constructor.

Definition at line 135 of file SIMFQT_Types.hpp.

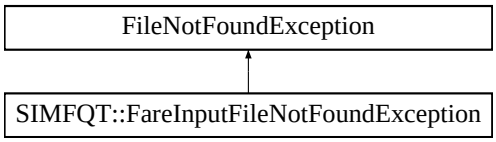
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.9 SIMFQT::FareInputFileNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::FareInputFileNotFoundException:



Public Member Functions

- FareInputFileNotFoundException (const std::string &iWhat)

24.9.1 Detailed Description

The fare input file can not be found.

Definition at line 111 of file SIMFQT_Types.hpp.

24.9.2 Constructor & Destructor Documentation

24.9.2.1 SIMFQT::FareInputFileNotFoundException::FareInputFileNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 116 of file SIMFQT_Types.hpp.

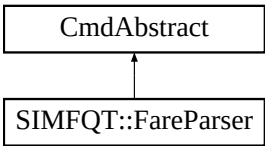
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.10 SIMFQT::FareParser Class Reference

`#include <simfqt/command/FareParser.hpp>`

Inheritance diagram for SIMFQT::FareParser:



Static Public Member Functions

- static void fareRuleGeneration (const FareFilePath &, stdair::BomRoot &)

24.10.1 Detailed Description

Class wrapping the parser entry point.

Definition at line 23 of file FareParser.hpp.

24.10.2 Member Function Documentation

24.10.2.1 void SIMFQT::FareParser::fareRuleGeneration (const FareFilePath & *iFareFilename*, stdair::BomRoot & *ioBomRoot*) [static]

Parses the CSV file describing the fares for the simulator, and generates the fare bom tree accordingly.

Parameters

const	FareFilePath& The file-name of the CSV-formatted fare input file.
stdair::BomRo	Root of the BOM tree.

Definition at line 18 of file FareParser.cpp.

References SIMFQT::FareRuleFileParser::generateFareRules().

Referenced by SIMFQT::SIMFQT_Service::parseAndLoad().

The documentation for this class was generated from the following files:

- simfqt/command/FareParser.hpp
- simfqt/command/FareParser.cpp

24.11 SIMFQT::FareQuoter Class Reference

Command wrapping the pricing request process.

`#include <simfqt/command/FareQuoter.hpp>`

Friends

- class SIMFQT_Service

24.11.1 Detailed Description

Command wrapping the pricing request process.

Definition at line 29 of file FareQuoter.hpp.

24.11.2 Friends And Related Function Documentation

24.11.2.1 friend class SIMFQT_Service [friend]

Friend classes: only the SimFQT service may access to the methods of that command class.

Definition at line 32 of file FareQuoter.hpp.

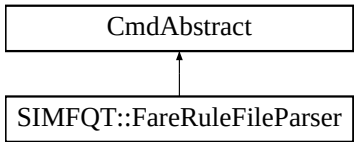
The documentation for this class was generated from the following files:

- simfqt/command/FareQuoter.hpp
- simfqt/command/FareQuoter.cpp

24.12 SIMFQT::FareRuleFileParser Class Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareRuleFileParser:



Public Member Functions

- FareRuleFileParser (stdair::BomRoot &ioBomRoot, const stdair::Filename_T &iFilename)
- void generateFareRules ()

24.12.1 Detailed Description

Class wrapping the initialisation and entry point of the parser.

The seemingly redundancy is used to force the instantiation of the actual parser, which is a templatised Boost Spirit grammar. Hence, the actual parser is instantiated within that class object code.

Definition at line 309 of file FareParserHelper.hpp.

24.12.2 Constructor & Destructor Documentation

24.12.2.1 SIMFQT::FareRuleFileParser::FareRuleFileParser (stdair::BomRoot & *ioBomRoot,* const stdair::Filename_T & *iFilename*)

Constructor.

Definition at line 586 of file FareParserHelper.cpp.

24.12.3 Member Function Documentation

24.12.3.1 void SIMFQT::FareRuleFileParser::generateFareRules ( )

Parse the input file and generate the fare rules.

Definition at line 608 of file FareParserHelper.cpp.

Referenced by SIMFQT::FareParser::fareRuleGeneration().

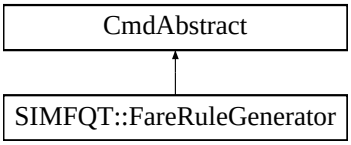
The documentation for this class was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.13 SIMFQT::FareRuleGenerator Class Reference

```
#include <simfqt/command/FareRuleGenerator.hpp>
```

Inheritance diagram for SIMFQT::FareRuleGenerator:



Friends

- class FareFileParser
- struct FareParserHelper::doEndFare
- class FareParser

24.13.1 Detailed Description

Class handling the generation / instantiation of the Fare BOM.

Definition at line 33 of file FareRuleGenerator.hpp.

24.13.2 Friends And Related Function Documentation

24.13.2.1 friend class FareFileParser [friend]

Definition at line 38 of file FareRuleGenerator.hpp.

24.13.2.2 friend struct FareParserHelper::doEndFare [friend]

Definition at line 39 of file FareRuleGenerator.hpp.

24.13.2.3 friend class FareParser [friend]

Definition at line 40 of file FareRuleGenerator.hpp.

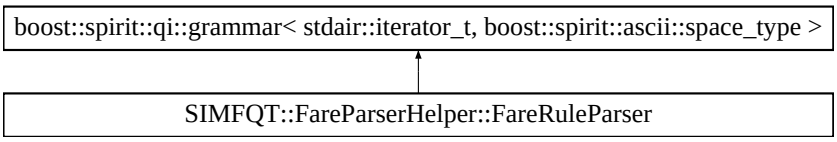
The documentation for this class was generated from the following files:

- simfqt/command/FareRuleGenerator.hpp
- simfqt/command/FareRuleGenerator.cpp

24.14 SIMFQT::FareParserHelper::FareRuleParser Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::FareRuleParser:



Public Member Functions

- FareRuleParser (stdair::BomRoot &, FareRuleStruct &)

Public Attributes

- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > start
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > comments
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > fare_rule
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > fare_rule_end
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > fare_key
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > fare_id
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > origin
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > destination
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > tripType
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > dateRangeStart
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > dateRangeEnd
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > date
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > timeRangeStart
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > timeRangeEnd
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > time
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > point_of_sale
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > cabinCode
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > channel
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > advancePurchase
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > saturdayStay
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > changeFees
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > nonRefundable

- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > minimumStay
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > fare
- boost::spirit::qi::rule< stdair::iterator_t, boost::spirit::ascii::space_type > segment
- stdair::BomRoot & _bomRoot
- FareRuleStruct & _fareRule

24.14.1 Detailed Description

Fare: fareID; OriginCity; DestinationCity; DateRangeStart; DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; AirlineCode; Class;

fareID OriginCity (3-char airport code) DestinationCity (3-char airport code) DateRangeStart (yyyy-mm-dd) DateRangeEnd (yyyy-mm-dd) DepartureTimeRangeStart (hh:mm) DepartureTimeRangeEnd (hh:mm) POS (3-char point_of_sale city) Cabin Code (1-char cabin code) Channel (D=direct, I=indirect, N=oNline, F=oFfline) AdvancePurchase SaturdayNight (T=True, F=False) ChangeFees (T=True, F=False) NonRefundable (T=True, F=False) MinimumStay Price AirlineCode (2-char airline code) ClassList (List of 1-char class code) Grammar for the Fare-Rule parser.

Definition at line 276 of file FareParserHelper.hpp.

24.14.2 Constructor & Destructor Documentation

24.14.2.1 SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser (stdair::BomRoot & *ioBomRoot*, FareRuleStruct & *iofareRule*)

Definition at line 466 of file FareParserHelper.cpp.

References _bomRoot, _fareRule, SIMFQT::FareRuleStruct::_itDay, SIMFQT::FareRuleStruct::_itHours, SIMFQT::FareRuleStruct::_itMinutes, SIMFQT::FareRuleStruct::_itMonth, SIMFQT::FareRuleStruct::_itSeconds, SIMFQT::FareRuleStruct::_itYear, advancePurchase, cabinCode, changeFees, channel, comments, date, dateRangeEnd, dateRangeStart, SIMFQT::FareParserHelper::day_p, destination, fare, fare_id, fare_key, fare_rule, fare_rule_end, SIMFQT::FareParserHelper::hour_p, minimumStay, SIMFQT::FareParserHelper::minute_p, SIMFQT::FareParserHelper::month_p, nonRefundable, origin, point_of_sale, saturdayStay, SIMFQT::FareParserHelper::second_p, segment, start, time, timeRangeEnd, timeRangeStart, tripType, SIMFQT::FareParserHelper::uint1_4_p, and SIMFQT::FareParserHelper::year_p.

24.14.3 Member Data Documentation

24.14.3.1 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::start

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.2 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::comments

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.3 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::fare_rule

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.4 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::fare_rule_end

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.5 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::fare_key

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.6 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::fare_id

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.7 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::origin

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.8 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::destination

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.9 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::tripType

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.10 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::dateRangeStart

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.11 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::dateRangeEnd

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.12 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::date

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.13 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::timeRangeStart

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.14 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::timeRangeEnd

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.15 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::time

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.16 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::point_of_sale

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.17 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::cabinCode

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.18 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::channel

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.19 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::advancePurchase

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.20 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::saturdayStay

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.21 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::changeFees

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.22 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::nonRefundable

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.23 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::minimumStay

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.24 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::fare

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.25 boost::spirit::qi::rule<stdair::iterator_t, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser::segment

Definition at line 285 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.26 stdair::BomRoot& SIMFQT::FareParserHelper::FareRuleParser::_bomRoot

Definition at line 292 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

24.14.3.27 FareRuleStruct& SIMFQT::FareParserHelper::FareRuleParser::_fareRule

Definition at line 293 of file FareParserHelper.hpp.

Referenced by FareRuleParser().

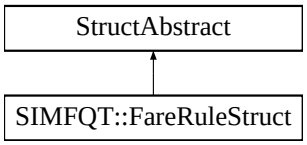
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.15 SIMFQT::FareRuleStruct Struct Reference

`#include <simfqt/bom/FareRuleStruct.hpp>`

Inheritance diagram for SIMFQT::FareRuleStruct:



Public Member Functions

- FareRuleStruct ()
- SIMFQT::FareQuoteID_T getFareID () const
- stdair::AirportCode_T getOrigin () const
- stdair::AirportCode_T getDestination () const
- stdair::TripType_T getTripType () const
- stdair::Date_T getDateRangeStart () const
- stdair::Date_T getDateRangeEnd () const
- stdair::Duration_T getTimeRangeStart () const
- stdair::Duration_T getTimeRangeEnd () const
- stdair::CabinCode_T getCabinCode () const
- const stdair::CityCode_T getPOS () const
- stdair::ChannelLabel_T getChannel () const
- stdair::DayDuration_T getAdvancePurchase () const
- stdair::SaturdayStay_T getSaturdayStay () const
- stdair::ChangeFees_T getChangeFees () const

- stdair::NonRefundable_T getNonRefundable () const
- stdair::DayDuration_T getMinimumStay () const
- stdair::PriceValue_T getFare () const
- stdair::AirlineCode_T getAirlineCode () const
- stdair::ClassCode_T getClassCode () const
- const unsigned int getAirlineListSize () const
- const unsigned int getClassCodeListSize () const
- stdair::AirlineCodeList_T getAirlineList () const
- stdair::ClassList_StringList_T getClassCodeList () const
- stdair::Date_T calculateDate () const
- stdair::Duration_T calculateTime () const
- const std::string describe () const
- void setFareID (const SIMFQT::FareQuoteID_T &iFareQuoteID)
- void setOrigin (const stdair::AirportCode_T &iOrigin)
- void setDestination (const stdair::AirportCode_T &iDestination)
- void setTripType (const stdair::TripType_T &iTripType)
- void setDateRangeStart (const stdair::Date_T &iDateRangeStart)
- void setDateRangeEnd (const stdair::Date_T &iDateRangeEnd)
- void setTimeRangeStart (const stdair::Duration_T &iTimeRangeStart)
- void setTimeRangeEnd (const stdair::Duration_T &iTimeRangeEnd)
- void setCabinCode (const stdair::CabinCode_T &iCabinCode)
- void setPOS (const stdair::CityCode_T &iPOS)
- void setChannel (const stdair::ChannelLabel_T &iChannel)
- void setAdvancePurchase (const stdair::DayDuration_T &iAdvancePurchase)
- void setSaturdayStay (const stdair::SaturdayStay_T &iSaturdayStay)
- void setChangeFees (const stdair::ChangeFees_T &iChangeFees)
- void setNonRefundable (const stdair::NonRefundable_T &iNonRefundable)
- void setMinimumStay (const stdair::DayDuration_T &iMinimumStay)
- void setFare (const stdair::PriceValue_T &iFare)
- void setAirlineCode (const stdair::AirlineCode_T &iAirlineCode)
- void setClassCode (const stdair::ClassCode_T &iClassCode)
- void clearAirlineCodeList ()
- void clearClassCodeList ()
- void addAirlineCode (const stdair::AirlineCode_T &iAirlineCode)
- void addClassCode (const stdair::ClassCode_T &iClassCode)

Public Attributes

- stdair::year_t _itYear
- stdair::month_t _itMonth
- stdair::day_t _itDay
- stdair::hour_t _itHours
- stdair::minute_t _itMinutes
- stdair::second_t _itSeconds

24.15.1 Detailed Description

Utility Structure for the parsing of fare-rule structures.

Definition at line 21 of file FareRuleStruct.hpp.

24.15.2 Constructor & Destructor Documentation

24.15.2.1 SIMFQT::FareRuleStruct::FareRuleStruct ( )

Default constructor.

Definition at line 17 of file FareRuleStruct.cpp.

24.15.3 Member Function Documentation

24.15.3.1 SIMFQT::FareQuoteID_T SIMFQT::FareRuleStruct::getFareID ( ) const [inline]

Get the fare ID.

Definition at line 30 of file FareRuleStruct.hpp.

24.15.3.2 stdair::AirportCode_T SIMFQT::FareRuleStruct::getOrigin ( ) const [inline]

Get the origin.

Definition at line 35 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storePOS::operator()().

24.15.3.3 stdair::AirportCode_T SIMFQT::FareRuleStruct::getDestination ( ) const [inline]

Get the destination.

Definition at line 40 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storePOS::operator()().

24.15.3.4 stdair::TripType_T SIMFQT::FareRuleStruct::getTripType ( ) const [inline]

Get the trip type.

Definition at line 45 of file FareRuleStruct.hpp.

24.15.3.5 stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeStart ( ) const [inline]

Get the date range start.

Definition at line 50 of file FareRuleStruct.hpp.

24.15.3.6 stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeEnd ( ) const [inline]

Get the date range end.

Definition at line 55 of file FareRuleStruct.hpp.

24.15.3.7 stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeStart ( ) const [inline]

Get the time range start.

Definition at line 60 of file FareRuleStruct.hpp.

24.15.3.8 stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeEnd ( ) const [inline]

Get the time range end.

Definition at line 65 of file FareRuleStruct.hpp.

24.15.3.9 stdair::CabinCode_T SIMFQT::FareRuleStruct::getCabinCode ( ) const [inline]

Get the cabin code.

Definition at line 70 of file FareRuleStruct.hpp.

24.15.3.10 const stdair::CityCode_T SIMFQT::FareRuleStruct::getPOS ( ) const [inline]

Get the point-of-sale.

Definition at line 75 of file FareRuleStruct.hpp.

24.15.3.11 stdair::ChannelLabel_T SIMFQT::FareRuleStruct::getChannel ( ) const [inline]

Get the channel.

Definition at line 80 of file FareRuleStruct.hpp.

24.15.3.12 stdair::DayDuration_T SIMFQT::FareRuleStruct::getAdvancePurchase ( ) const [inline]

Get the advance purchase.

Definition at line 85 of file FareRuleStruct.hpp.

24.15.3.13 stdair::SaturdayStay_T SIMFQT::FareRuleStruct::getSaturdayStay ( ) const [inline]

Get the saturday stay option.

Definition at line 90 of file FareRuleStruct.hpp.

24.15.3.14 stdair::ChangeFees_T SIMFQT::FareRuleStruct::getChangeFees ( ) const [inline]

Get the change fees.

Definition at line 95 of file FareRuleStruct.hpp.

24.15.3.15 stdair::NonRefundable_T SIMFQT::FareRuleStruct::getNonRefundable ( ) const [inline]

Get the refundable option.

Definition at line 100 of file FareRuleStruct.hpp.

24.15.3.16 stdair::DayDuration_T SIMFQT::FareRuleStruct::getMinimumStay ( ) const [inline]

Get the minimum stay.

Definition at line 105 of file FareRuleStruct.hpp.

24.15.3.17 stdair::PriceValue_T SIMFQT::FareRuleStruct::getFare ( ) const [inline]

Get the fare.

Definition at line 110 of file FareRuleStruct.hpp.

24.15.3.18 stdair::AirlineCode_T SIMFQT::FareRuleStruct::getAirlineCode ( ) const [inline]

Get the airline code.

Definition at line 115 of file FareRuleStruct.hpp.

24.15.3.19 stdair::ClassCode_T SIMFQT::FareRuleStruct::getClassCode ( ) const [inline]

Get the class code.

Definition at line 120 of file FareRuleStruct.hpp.

24.15.3.20 const unsigned int SIMFQT::FareRuleStruct::getAirlineListSize ( ) const [inline]

Get the size of the airline code list.

Definition at line 125 of file FareRuleStruct.hpp.

24.15.3.21 const unsigned int SIMFQT::FareRuleStruct::getClassCodeListSize ( ) const [inline]

Get the size of the class code list.

Definition at line 130 of file FareRuleStruct.hpp.

24.15.3.22 stdair::AirlineCodeList_T SIMFQT::FareRuleStruct::getAirlineList ( ) const [inline]

Get the airline code list.

Definition at line 135 of file FareRuleStruct.hpp.

24.15.3.23 stdair::ClassList_StringList_T SIMFQT::FareRuleStruct::getClassCodeList ( ) const [inline]

Get the class code list.

Definition at line 140 of file FareRuleStruct.hpp.

24.15.3.24 stdair::Date_T SIMFQT::FareRuleStruct::calculateDate ( ) const

Calculate the date from the staging details.

Definition at line 39 of file FareRuleStruct.cpp.

References _itDay, _itMonth, and _itYear.

Referenced by SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), and SIMFQT::FareParserHelper::storeDateRangeStart::operator()().

24.15.3.25 stdair::Duration_T SIMFQT::FareRuleStruct::calculateTime ( ) const

Calculate the time from the staging details.

Definition at line 45 of file FareRuleStruct.cpp.

References _itHours, _itMinutes, and _itSeconds.

Referenced by SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), and SIMFQT::FareParserHelper::storeStartRangeTime::operator()().

24.15.3.26 const std::string SIMFQT::FareRuleStruct::describe ( ) const

Display of the structure.

Definition at line 54 of file FareRuleStruct.cpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()().

24.15.3.27 void SIMFQT::FareRuleStruct::setFareID (const SIMFQT::FareQuoteID_T & *iFareQuoteID*) [inline]

Set the fare ID.

Definition at line 158 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeFareId::operator()().

24.15.3.28 void SIMFQT::FareRuleStruct::setOrigin (const stdair::AirportCode_T & *iOrigin*) [inline]

Set the origin.

Definition at line 163 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeOrigin::operator()().

24.15.3.29 void SIMFQT::FareRuleStruct::setDestination (const stdair::AirportCode_T & *iDestination*) [inline]

Set the destination.

Definition at line 168 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeDestination::operator()().

24.15.3.30 void SIMFQT::FareRuleStruct::setTripType (const stdair::TripType_T & *iTripType*) [inline]

Set the trip type.

Definition at line 173 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeTripType::operator()().

24.15.3.31 void SIMFQT::FareRuleStruct::setDateRangeStart (const stdair::Date_T & *iDateRangeStart*) [inline]

Set the date range start.

Definition at line 178 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeDateRangeStart::operator()().

24.15.3.32 void SIMFQT::FareRuleStruct::setDateRangeEnd (const stdair::Date_T & *iDateRangeEnd*) [inline]

Set the date range end.

Definition at line 183 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeDateRangeEnd::operator()().

24.15.3.33 void SIMFQT::FareRuleStruct::setTimeRangeStart (const stdair::Duration_T & *iTimeRangeStart*) [inline]

Set the time range start.

Definition at line 188 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeStartRangeTime::operator()().

24.15.3.34 void SIMFQT::FareRuleStruct::setTimeRangeEnd (const stdair::Duration_T & *iTimeRangeEnd*) [inline]

Set the time range end.

Definition at line 193 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeEndRangeTime::operator()().

24.15.3.35 void SIMFQT::FareRuleStruct::setCabinCode (const stdair::CabinCode_T & *iCabinCode*) [inline]

Set the cabin code.

Definition at line 198 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeCabinCode::operator()().

24.15.3.36 void SIMFQT::FareRuleStruct::setPOS (const stdair::CityCode_T & *iPOS*) [inline]

Set the point-of-sale.

Definition at line 203 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storePOS::operator()().

24.15.3.37 void SIMFQT::FareRuleStruct::setChannel (const stdair::ChannelLabel_T & *iChannel*) [inline]

Set the channel.

Definition at line 208 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeChannel::operator()().

24.15.3.38 void SIMFQT::FareRuleStruct::setAdvancePurchase (const stdair::DayDuration_T & *iAdvancePurchase*) [inline]

Set the advance purchase.

Definition at line 213 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeAdvancePurchase::operator()().

24.15.3.39 void SIMFQT::FareRuleStruct::setSaturdayStay (const stdair::SaturdayStay_T & *iSaturdayStay*) [inline]

Set the saturday stay option.

Definition at line 218 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeSaturdayStay::operator()().

24.15.3.40 void SIMFQT::FareRuleStruct::setChangeFees (const stdair::ChangeFees_T & *iChangeFees*) [inline]

Set the change fees.

Definition at line 223 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeChangeFees::operator()().

24.15.3.41 void SIMFQT::FareRuleStruct::setNonRefundable (const stdair::NonRefundable_T & *iNonRefundable*) [inline]

Set the refundable option.

Definition at line 228 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeNonRefundable::operator()().

24.15.3.42 void SIMFQT::FareRuleStruct::setMinimumStay (const stdair::DayDuration_T & *iMinimumStay*) [inline]

Set the minimum stay.

Definition at line 233 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeMinimumStay::operator()().

24.15.3.43 void SIMFQT::FareRuleStruct::setFare (const stdair::PriceValue_T & *iFare*) [inline]

Set the fare.

Definition at line 238 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeFare::operator()().

24.15.3.44 void SIMFQT::FareRuleStruct::setAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Set the airline code.

Definition at line 243 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeFareId::operator()().

24.15.3.45 void SIMFQT::FareRuleStruct::setClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Set the class code.

Definition at line 248 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeFareId::operator()().

24.15.3.46 void SIMFQT::FareRuleStruct::clearAirlineCodeList ( ) [inline]

Empty the airline code list.

Definition at line 253 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeFareId::operator()().

24.15.3.47 void SIMFQT::FareRuleStruct::clearClassCodeList ( ) [inline]

Empty the class code list.

Definition at line 258 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeFareId::operator()().

24.15.3.48 void SIMFQT::FareRuleStruct::addAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Add an airline code to the list.

Definition at line 263 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeAirlineCode::operator()().

24.15.3.49 void SIMFQT::FareRuleStruct::addClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Add a class code to the list.

Definition at line 268 of file FareRuleStruct.hpp.

Referenced by SIMFQT::FareParserHelper::storeClass::operator()().

24.15.4 Member Data Documentation

24.15.4.1 stdair::year_t SIMFQT::FareRuleStruct::_itYear

Staging Date.

Definition at line 275 of file FareRuleStruct.hpp.

Referenced by calculateDate(), and SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

24.15.4.2 stdair::month_t SIMFQT::FareRuleStruct::_itMonth

Definition at line 276 of file FareRuleStruct.hpp.

Referenced by calculateDate(), and SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

24.15.4.3 stdair::day_t SIMFQT::FareRuleStruct::_itDay

Definition at line 277 of file FareRuleStruct.hpp.

Referenced by calculateDate(), and SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

24.15.4.4 stdair::hour_t SIMFQT::FareRuleStruct::_itHours

Staging Time.

Definition at line 280 of file FareRuleStruct.hpp.

Referenced by calculateTime(), and SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

24.15.4.5 stdair::minute_t SIMFQT::FareRuleStruct::_itMinutes

Definition at line 281 of file FareRuleStruct.hpp.

Referenced by calculateTime(), and SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser().

24.15.4.6 stdair::second_t SIMFQT::FareRuleStruct::_itSeconds

Definition at line 282 of file FareRuleStruct.hpp.

Referenced by calculateTime(), SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope and SIMFQT::FareParserHelper::storeFareId::operator()().

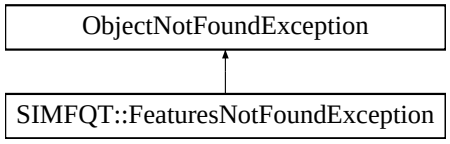
The documentation for this struct was generated from the following files:

- simfqt/bom/FareRuleStruct.hpp
- simfqt/bom/FareRuleStruct.cpp

24.16 SIMFQT::FeaturesNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::FeaturesNotFoundException:



Public Member Functions

- FeaturesNotFoundException (const std::string &iWhat)

24.16.1 Detailed Description

The fare features can not be found.

Definition at line 87 of file SIMFQT_Types.hpp.

24.16.2 Constructor & Destructor Documentation

24.16.2.1 SIMFQT::FeaturesNotFoundException::FeaturesNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

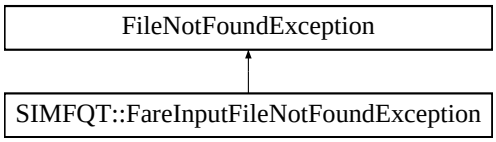
Definition at line 92 of file SIMFQT_Types.hpp.

The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.17 FileNotFoundException Class Reference

Inheritance diagram for FileNotFoundException:



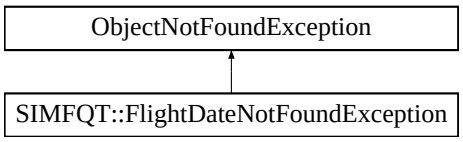
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.18 SIMFQT::FlightDateNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::FlightDateNotFoundException:



Public Member Functions

- FlightDateNotFoundException (const std::string &iWhat)

24.18.1 Detailed Description

The departure date of the flight can not be found.

Definition at line 63 of file SIMFQT_Types.hpp.

24.18.2 Constructor & Destructor Documentation

24.18.2.1 SIMFQT::FlightDateNotFoundException::FlightDateNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 68 of file SIMFQT_Types.hpp.

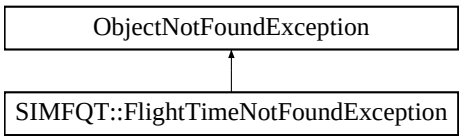
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.19 SIMFQT::FlightTimeNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::FlightTimeNotFoundException:



Public Member Functions

- FlightTimeNotFoundException (const std::string &iWhat)

24.19.1 Detailed Description

The departure time of the flight can not be found.

Definition at line 75 of file SIMFQT_Types.hpp.

24.19.2 Constructor & Destructor Documentation

24.19.2.1 SIMFQT::FlightTimeNotFoundException::FlightTimeNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

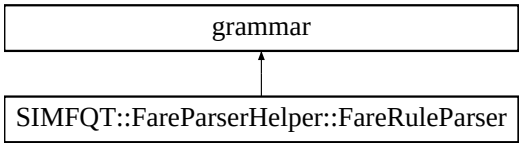
Definition at line 80 of file SIMFQT_Types.hpp.

The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.20 grammar Class Reference

Inheritance diagram for grammar:

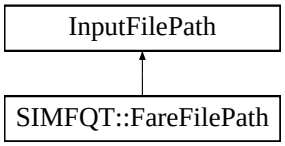


The documentation for this class was generated from the following file:

- simfqt/command/FareParserHelper.hpp

24.21 InputFilePath Class Reference

Inheritance diagram for InputFilePath:



The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.22 ObjectNotFoundException Class Reference

Inheritance diagram for ObjectNotFoundException:

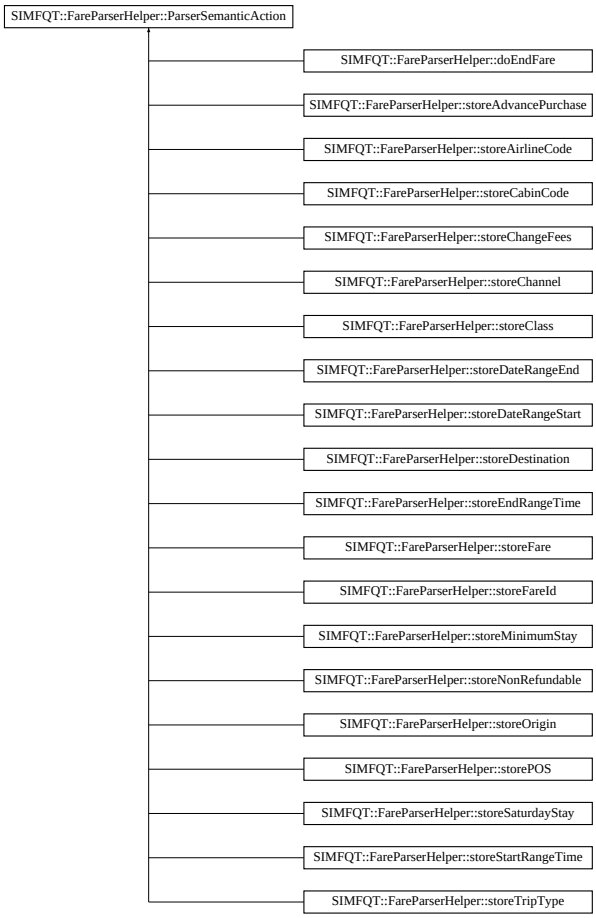
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.23 SIMFQT::FareParserHelper::ParserSemanticAction Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::ParserSemanticAction:



Public Member Functions

- ParserSemanticAction (FareRuleStruct &)

Public Attributes

- FareRuleStruct & _fareRule

24.23.1 Detailed Description

Generic Semantic Action (Actor / Functor) for the Fare Parser.

Definition at line 31 of file FareParserHelper.hpp.

24.23.2 Constructor & Destructor Documentation

24.23.2.1 SIMFQT::FareParserHelper::ParserSemanticAction::ParserSemanticAction (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 25 of file FareParserHelper.cpp.

24.23.3 Member Data Documentation

24.23.3.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

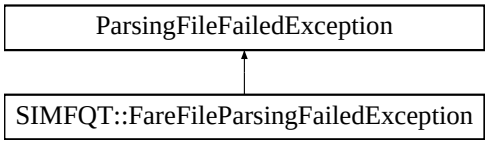
Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(
SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(),
SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope
SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::oper
SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(),
SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.24 ParsingFileFailedException Class Reference

Inheritance diagram for ParsingFileFailedException:



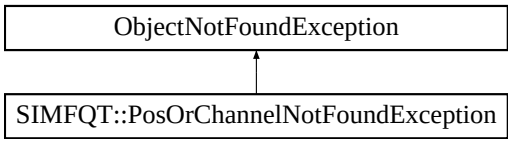
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.25 SIMFQT::PosOrChannelNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::PosOrChannelNotFoundException:



Public Member Functions

- PosOrChannelNotFoundException (const std::string &iWhat)

24.25.1 Detailed Description

The given POS/channel can not be found.

Definition at line 51 of file SIMFQT_Types.hpp.

24.25.2 Constructor & Destructor Documentation

24.25.2.1 SIMFQT::PosOrChannelNotFoundException::PosOrChannelNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 56 of file SIMFQT_Types.hpp.

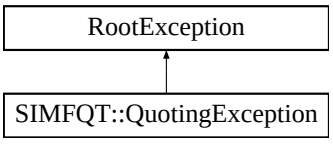
The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.26 SIMFQT::QuotingException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`

Inheritance diagram for SIMFQT::QuotingException:



24.26.1 Detailed Description

The pricing operation fails.

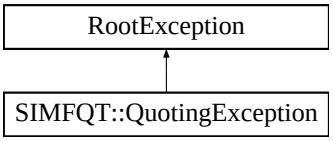
Definition at line 123 of file SIMFQT_Types.hpp.

The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.27 RootException Class Reference

Inheritance diagram for RootException:

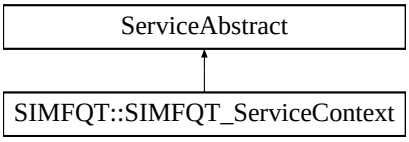


The documentation for this class was generated from the following file:

- simfqt/SIMFQT_Types.hpp

24.28 ServiceAbstract Class Reference

Inheritance diagram for ServiceAbstract:



The documentation for this class was generated from the following file:

- simfqt/service/SIMFQT_ServiceContext.hpp

24.29 SIMFQT::SIMFQT_Service Class Reference

Interface for the SIMFQT Services.

`#include <simfqt/SIMFQT_Service.hpp>`

Public Member Functions

- SIMFQT_Service (const stdair::BasLogParams &)
- SIMFQT_Service (const stdair::BasLogParams &, const stdair::BasDBParams &)

- SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr)
- void parseAndLoad (const FareFilePath &iFareFilename)
- ~SIMFQT_Service ()
- void buildSampleBom ()
- stdair::BookingRequestStruct buildBookingRequest (const bool isForCRS=false)
- void buildSampleTravelSolutions (stdair::TravelSolutionList_T &)
- void quotePrices (const stdair::BookingRequestStruct &, stdair::TravelSolutionList_T &)
- std::string csvDisplay () const
- std::string csvDisplay (const stdair::TravelSolutionList_T &) const
- std::string csvDisplay (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const
- std::string list () const
- bool check (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const

24.29.1 Detailed Description

Interface for the SIMFQT Services.

Definition at line 31 of file SIMFQT_Service.hpp.

24.29.2 Constructor & Destructor Documentation

24.29.2.1 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & *iLogParams*)

Constructor.

The initSimfqtService() method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters

const	stdair::BasLogParams& Parameters for the output log stream.

Definition at line 36 of file SIMFQT_Service.cpp.

24.29.2.2 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & *iLogParams,* const stdair::BasDBParams & *iDBParams*)

Constructor.

The initSimfqtService() method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters

const	stdair::BasLogParams& Parameters for the output log stream.
const	stdair::BasDBParams& Parameters for the database access.

Definition at line 56 of file SIMFQT_Service.cpp.

24.29.2.3 SIMFQT::SIMFQT_Service::SIMFQT_Service (stdair::STDAIR_ServicePtr_T *ioSTDAIR_ServicePtr*)

Constructor.

The initSimfqtService() method is called; see the corresponding documentation for more details.

Moreover, as no reference on any output stream is given, it is assumed that the StdAir log service has already been initialised with the proper log output stream by some other methods in the calling chain (for instance, when the SIMFQT_Service is itself being initialised by another library service such as SIMCRS_Service).

Parameters

stdair::STDAIR_ServicePtr_T	Reference on the STDAIR service.

Definition at line 78 of file SIMFQT_Service.cpp.

24.29.2.4 SIMFQT::SIMFQT_Service::~SIMFQT_Service ( )

Destructor.

Definition at line 94 of file SIMFQT_Service.cpp.

24.29.3 Member Function Documentation

24.29.3.1 void SIMFQT::SIMFQT_Service::parseAndLoad (const FareFilePath & *iFareFilename*)

Parse the fare dump and load it into memory.

The CSV file, describing the fare rule for the simulator, is parsed and instantiated in memory accordingly.

Parameters

const	FareFilePath& Filename of the input fare file.

Definition at line 171 of file SIMFQT_Service.cpp.

References SIMFQT::FareParser::fareRuleGeneration().

Referenced by main().

24.29.3.2 void SIMFQT::SIMFQT_Service::buildSampleBom ( )

Build a sample BOM tree, and attach it to the BomRoot instance.

As for now, two sample BOM trees can be built.

- One BOM tree is based on two actual inventories (one for BA, another for AF). Each inventory contains one flight. One of those flights has two legs (and therefore three segments).
- The other BOM tree is fake, as a hook for RMOL to work.

Definition at line 185 of file SIMFQT_Service.cpp.

Referenced by main().

24.29.3.3 stdair::BookingRequestStruct SIMFQT::SIMFQT_Service::buildBookingRequest (const bool *isForCRS* = `false`)

Build a BookingRequest structure (for test purposes).

Returns

stdair::BookingRequestStruct The created BookingRequest structure.

Definition at line 231 of file SIMFQT_Service.cpp.

Referenced by main().

24.29.3.4 void SIMFQT::SIMFQT_Service::buildSampleTravelSolutions (stdair::TravelSolutionList_T & *ioTravelSolutionList*)

Build a sample list of travel solutions.

As of now (March 2011), that list is made of the following travel solutions:

- BA9
- LHR-SYD
- 2011-06-10
- Q
- WTP: 900
- Change fee: 20; Non refundable; Saturday night stay

Parameters

TravelSolution T&	Sample list of travel solution structures. It should be given empty. It is altered with the returned sample.

Definition at line 255 of file SIMFQT_Service.cpp.

Referenced by main().

24.29.3.5 void SIMFQT::SIMFQT_Service::quotePrices (const stdair::BookingRequestStruct & *iBookingRequest,* stdair::TravelSolutionList_T & *ioTravelSolutionList*)

Calculate the prices for a given list of travel solutions.

A stdair::Fare_T attribute is calculated for every travel solution of the list.

Parameters

stdair::Bookin	Booking request.
stdair::TravelS T&	List of travel solution.

Definition at line 391 of file SIMFQT_Service.cpp.

Referenced by main().

24.29.3.6 std::string SIMFQT::SIMFQT_Service::csvDisplay ( ) const

Recursively display (dump in the returned string) the objects of the BOM tree.

Returns

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 276 of file SIMFQT_Service.cpp.

Referenced by main().

24.29.3.7 std::string SIMFQT::SIMFQT_Service::csvDisplay (const stdair::TravelSolutionList_T & *ioTravelSolutionList*) const

Display (dump in the returned string) the full list of travel solution structures.

Returns

std::string Output string in which the list of travel solutions is logged/dumped.

Definition at line 303 of file SIMFQT_Service.cpp.

24.29.3.8 std::string SIMFQT::SIMFQT_Service::csvDisplay (const stdair::AirportCode_T & *ioOrigin,* const stdair::AirportCode_T & *ioDestination,* const stdair::Date_T & *ioDepartureDate*) const

Recursively display (dump in the returned string) the fare-rules corresponding to the parameters given as input.

Parameters

const	stdair::AirportCode_T& Origin airport of the fare-rules to display
const	stdair::AirportCode_T& Destination airport of the fare- rules to display.
const	stdair::Date_T& Departure date of the fare-rules to display.

Returns

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 325 of file SIMFQT_Service.cpp.

24.29.3.9 std::string SIMFQT::SIMFQT_Service::list ( ) const

Display (dump in the returned string) the airport pairs and the corresponding departure dates of the fare rules stored in the BOM tree.

Returns

std::string Output string in which the airport pairs and departure dates are logged/-dumped.

Definition at line 348 of file SIMFQT_Service.cpp.

24.29.3.10 bool SIMFQT::SIMFQT_Service::check (const stdair::AirportCode_T & *ioOrigin*, const stdair::AirportCode_T & *ioDestination*, const stdair::Date_T & *ioDepartureDate*) const

Check whether the given couple airportpair-date is a valid one.

Parameters

const	stdair::AirportCode_T& Origin airport of the fare rule to check.
const	stdair::AirportCode_T& Destination airport of the fare rule to check.
const	stdair::Date_T& Departure date of the fare rule to check.

Returns

bool Whether or not the given airportpair-date couple is a valid one.

Definition at line 369 of file SIMFQT_Service.cpp.

The documentation for this class was generated from the following files:

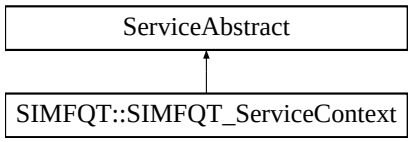
- simfqt/SIMFQT_Service.hpp
- simfqt/service/SIMFQT_Service.cpp

24.30 SIMFQT::SIMFQT_ServiceContext Class Reference

Class holding the context of the SimFQT services.

`#include <simfqt/service/SIMFQT_ServiceContext.hpp>`

Inheritance diagram for SIMFQT::SIMFQT_ServiceContext:



Friends

- class SIMFQT_Service
- class FacSimfqtServiceContext

24.30.1 Detailed Description

Class holding the context of the SimFQT services.

Definition at line 25 of file SIMFQT_ServiceContext.hpp.

24.30.2 Friends And Related Function Documentation

24.30.2.1 friend class SIMFQT_Service [friend]

The SIMFQT_Service class should be the sole class to get access to ServiceContext content: general users do not want to bother with a context interface.

Definition at line 31 of file SIMFQT_ServiceContext.hpp.

24.30.2.2 friend class FacSimfqtServiceContext [friend]

Definition at line 32 of file SIMFQT_ServiceContext.hpp.

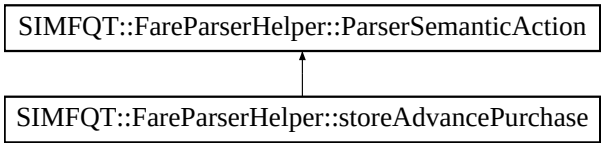
The documentation for this class was generated from the following files:

- simfqt/service/SIMFQT_ServiceContext.hpp
- simfqt/service/SIMFQT_ServiceContext.cpp

24.31 SIMFQT::FareParserHelper::storeAdvancePurchase Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeAdvancePurchase:



Public Member Functions

- storeAdvancePurchase (FareRuleStruct &)
- void operator() (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.31.1 Detailed Description

Store the parsed advance purchase days.

Definition at line 150 of file FareParserHelper.hpp.

24.31.2 Constructor & Destructor Documentation

24.31.2.1 SIMFQT::FareParserHelper::storeAdvancePurchase::storeAdvancePurchase (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 247 of file FareParserHelper.cpp.

24.31.3 Member Function Documentation

24.31.3.1 void SIMFQT::FareParserHelper::storeAdvancePurchase::operator() (unsigned int *iAdancePurchase,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 252 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setAdvanceP

24.31.4 Member Data Documentation

24.31.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat

SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
operator()(), SIMFQT::FareParserHelper::storeChannel::operator()(), SIMFQT::FareParserHelper::storeCabinCode::ope
SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(),
SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope
SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()()
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

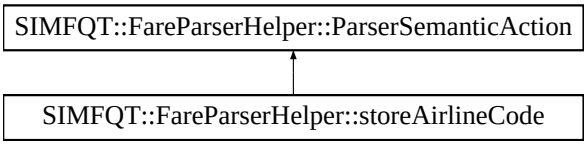
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.32 SIMFQT::FareParserHelper::storeAirlineCode Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeAirlineCode:



Public Member Functions

- storeAirlineCode (FareRuleStruct &)
- void operator() (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.32.1 Detailed Description

Store the parsed airline code.

Definition at line 210 of file FareParserHelper.hpp.

24.32.2 Constructor & Destructor Documentation

24.32.2.1 SIMFQT::FareParserHelper::storeAirlineCode::storeAirlineCode (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 371 of file FareParserHelper.cpp.

24.32.3 Member Function Documentation

24.32.3.1 void SIMFQT::FareParserHelper::storeAirlineCode::operator() (std::vector< char > *iChar,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 376 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::addAirlineCo

24.32.4 Member Data Documentation

24.32.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::opera SIMFQT::FareParserHelper::storeNonRefundable::operator()(), SIMFQT::FareParserHelper::storeChangeFees::operato SIMFQT::FareParserHelper::storeSaturdayStay::operator()(), SIMFQT::FareParserHelper::storeAdvancePurchase::oper SIMFQT::FareParserHelper::storeChannel::operator()(), SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()() SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

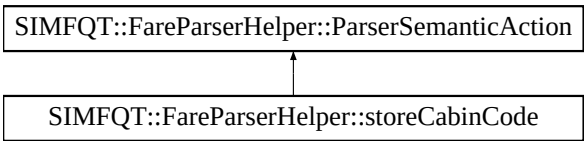
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.33 SIMFQT::FareParserHelper::storeCabinCode Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeCabinCode:



Public Member Functions

- storeCabinCode (FareRuleStruct &)
- void operator() (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.33.1 Detailed Description

Store the cabin code.

Definition at line 130 of file FareParserHelper.hpp.

24.33.2 Constructor & Destructor Documentation

24.33.2.1 SIMFQT::FareParserHelper::storeCabinCode::storeCabinCode (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 205 of file FareParserHelper.cpp.

24.33.3 Member Function Documentation

24.33.3.1 void SIMFQT::FareParserHelper::storeCabinCode::operator() (char *iChar,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 210 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setCabinCod

24.33.4 Member Data Documentation

24.33.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()

SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(
operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::op
SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope
SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()()
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

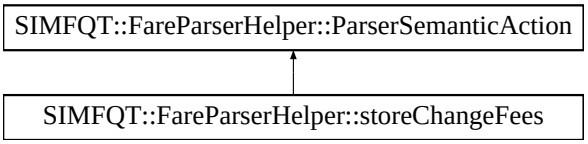
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.34 SIMFQT::FareParserHelper::storeChangeFees Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeChangeFees:



Public Member Functions

- storeChangeFees (FareRuleStruct &)
- void operator() (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.34.1 Detailed Description

Store the parsed change fees.

Definition at line 170 of file FareParserHelper.hpp.

24.34.2 Constructor & Destructor Documentation

24.34.2.1 SIMFQT::FareParserHelper::storeChangeFees::storeChangeFees (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 288 of file FareParserHelper.cpp.

24.34.3 Member Function Documentation

24.34.3.1 void SIMFQT::FareParserHelper::storeChangeFees::operator() (char *iChangefees,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 293 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setChangeFe

24.34.4 Member Data Documentation

24.34.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()(), SIMFQT::FareParserHelper::storeAdvancePu
SIMFQT::FareParserHelper::storeChannel::operator()(), SIMFQT::FareParserHelper::storeCabinCode::operator()(),
SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(),
SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope
SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()(
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

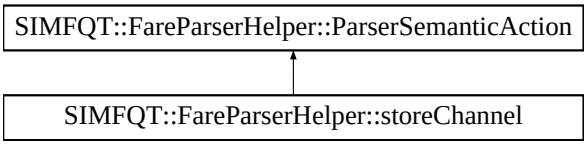
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.35 SIMFQT::FareParserHelper::storeChannel Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeChannel:



Public Member Functions

- storeChannel (FareRuleStruct &)
- void operator() (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.35.1 Detailed Description

Store the channel distribution.

Definition at line 140 of file FareParserHelper.hpp.

24.35.2 Constructor & Destructor Documentation

24.35.2.1 SIMFQT::FareParserHelper::storeChannel::storeChannel (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 226 of file FareParserHelper.cpp.

24.35.3 Member Function Documentation

24.35.3.1 void SIMFQT::FareParserHelper::storeChannel::operator() (std::vector< char > *iChar,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 231 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setChannel()

24.35.4 Member Data Documentation

24.35.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()

SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), operator()(), SIMFQT::FareParserHelper::storeCabin
SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(),
SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope
SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()()
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

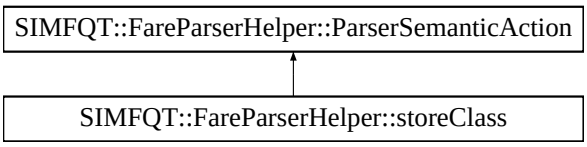
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.36 SIMFQT::FareParserHelper::storeClass Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeClass:



Public Member Functions

- storeClass (FareRuleStruct &)
- void operator() (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.36.1 Detailed Description

Store the parsed class code.

Definition at line 220 of file FareParserHelper.hpp.

24.36.2 Constructor & Destructor Documentation

24.36.2.1 SIMFQT::FareParserHelper::storeClass::storeClass (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 389 of file FareParserHelper.cpp.

24.36.3 Member Function Documentation

24.36.3.1 void SIMFQT::FareParserHelper::storeClass::operator() (std::vector< char > *iChar,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 394 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::addClassCod

24.36.4 Member Data Documentation

24.36.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), operator()(), SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator() SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::oper SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

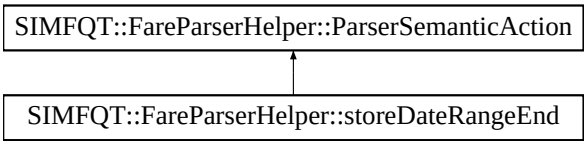
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.37 SIMFQT::FareParserHelper::storeDateRangeEnd Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeEnd:



Public Member Functions

- storeDateRangeEnd (FareRuleStruct &)
- void operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.37.1 Detailed Description

Store the parsed end of the date range.

Definition at line 90 of file FareParserHelper.hpp.

24.37.2 Constructor & Destructor Documentation

24.37.2.1 SIMFQT::FareParserHelper::storeDateRangeEnd::storeDateRangeEnd (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 124 of file FareParserHelper.cpp.

24.37.3 Member Function Documentation

24.37.3.1 void SIMFQT::FareParserHelper::storeDateRangeEnd::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 129 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, SIMFQT::FareRuleStruct::calculateDate(), and SIMFQT::FareRuleStruct::setDateRangeEnd().

24.37.4 Member Data Documentation

24.37.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),

SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(
SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(),
SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope
operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

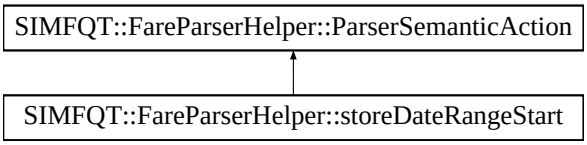
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.38 SIMFQT::FareParserHelper::storeDateRangeStart Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeStart:



Public Member Functions

- storeDateRangeStart (FareRuleStruct &)
- void operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.38.1 Detailed Description

Store the parsed start of the date range.

Definition at line 80 of file FareParserHelper.hpp.

24.38.2 Constructor & Destructor Documentation

24.38.2.1 SIMFQT::FareParserHelper::storeDateRangeStart::storeDateRangeStart (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 108 of file FareParserHelper.cpp.

24.38.3 Member Function Documentation

24.38.3.1 void SIMFQT::FareParserHelper::storeDateRangeStart::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 113 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, SIMFQT::FareRuleStruct::calculateDate(), and SIMFQT::FareRuleStruct::setDateRangeStart().

24.38.4 Member Data Documentation

24.38.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(
SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(),
SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope
SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), operator()(), SIMFQT::FareParserHelper::storeTripType:
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

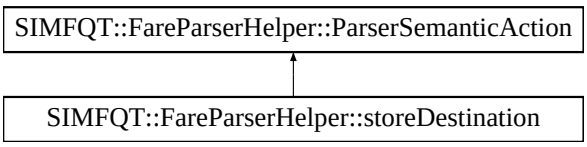
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.39 SIMFQT::FareParserHelper::storeDestination Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeDestination:



Public Member Functions

- storeDestination (FareRuleStruct &)
- void operator() (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.39.1 Detailed Description

Store the parsed destination.

Definition at line 59 of file FareParserHelper.hpp.

24.39.2 Constructor & Destructor Documentation

24.39.2.1 SIMFQT::FareParserHelper::storeDestination::storeDestination (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 70 of file FareParserHelper.cpp.

24.39.3 Member Function Documentation

24.39.3.1 void SIMFQT::FareParserHelper::storeDestination::operator() (std::vector< char > *iChar,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 75 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setDestinatio

24.39.4 Member Data Documentation

24.39.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(
SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(),
SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope
SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::oper
SIMFQT::FareParserHelper::storeTripType::operator()(), operator()(), SIMFQT::FareParserHelper::storeOrigin::operator(
and SIMFQT::FareParserHelper::storeFareId::operator()().

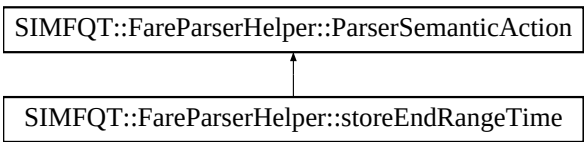
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.40 SIMFQT::FareParserHelper::storeEndRangeTime Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeEndRangeTime:



Public Member Functions

- storeEndRangeTime (FareRuleStruct &)
- void operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.40.1 Detailed Description

Store the parsed end range time.

Definition at line 110 of file FareParserHelper.hpp.

24.40.2 Constructor & Destructor Documentation

24.40.2.1 SIMFQT::FareParserHelper::storeEndRangeTime::storeEndRangeTime (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 163 of file FareParserHelper.cpp.

24.40.3 Member Function Documentation

24.40.3.1 void SIMFQT::FareParserHelper::storeEndRangeTime::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 168 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, SIMFQT::FareRuleStruct::_itSeconds, SIMFQT::FareRuleStruct::calculateTime(), and SIMFQT::FareRuleStruct::setTimeRangeEnd().

24.40.4 Member Data Documentation

24.40.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(), SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operator(), SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator(), SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(), SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRange, SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

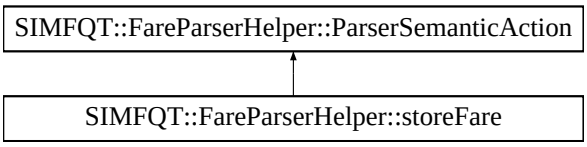
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.41 SIMFQT::FareParserHelper::storeFare Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeFare:



Public Member Functions

- storeFare (FareRuleStruct &)
- void operator() (double, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.41.1 Detailed Description

Store the parsed fare value.

Definition at line 200 of file FareParserHelper.hpp.

24.41.2 Constructor & Destructor Documentation

24.41.2.1 SIMFQT::FareParserHelper::storeFare::storeFare (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 355 of file FareParserHelper.cpp.

24.41.3 Member Function Documentation

24.41.3.1 void SIMFQT::FareParserHelper::storeFare::operator() (double *iFare*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 360 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setFare().

24.41.4 Member Data Documentation

24.41.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), operator()(), SIMFQT::FareParserHelper::storeMinimumStay
SIMFQT::FareParserHelper::storeNonRefundable::operator()(), SIMFQT::FareParserHelper::storeChangeFees::operato
SIMFQT::FareParserHelper::storeSaturdayStay::operator()(), SIMFQT::FareParserHelper::storeAdvancePurchase::oper
SIMFQT::FareParserHelper::storeChannel::operator()(), SIMFQT::FareParserHelper::storeCabinCode::operator()(),
SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(),
SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope
SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()()
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

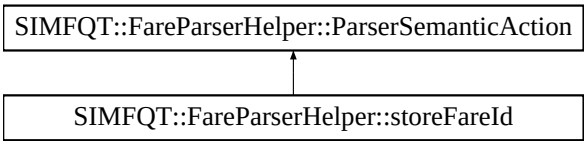
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.42 SIMFQT::FareParserHelper::storeFareId Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeFareId:



Public Member Functions

- storeFareId (FareRuleStruct &)
- void operator() (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.42.1 Detailed Description

Store the parsed fare Id.

Definition at line 39 of file FareParserHelper.hpp.

24.42.2 Constructor & Destructor Documentation

24.42.2.1 SIMFQT::FareParserHelper::storeFareId::storeFareId (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 31 of file FareParserHelper.cpp.

24.42.3 Member Function Documentation

24.42.3.1 void SIMFQT::FareParserHelper::storeFareId::operator() (unsigned int *iFareId,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 36 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, SIMFQT::FareRuleStruct::_itSeconds, SIMFQT::FareRuleStruct::clearAirlineCodeList(), SIMFQT::FareRuleStruct::clearClassCodeList(), SIMFQT::FareRuleStruct::setAirlineCode(), SIMFQT::FareRuleStruct::setClassCode(), and SIMFQT::FareRuleStruct::setFareID().

24.42.4 Member Data Documentation

24.42.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(), SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operator(), SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator(), SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(), SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::operator(), SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::operator(), SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and operator()().

The documentation for this struct was generated from the following files:

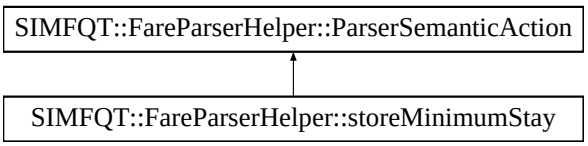
- simfqt/command/FareParserHelper.hpp

- simfqt/command/FareParserHelper.cpp

24.43 SIMFQT::FareParserHelper::storeMinimumStay Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeMinimumStay:



Public Member Functions

- storeMinimumStay (FareRuleStruct &)
- void operator() (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.43.1 Detailed Description

Store the parsed minimum stay.

Definition at line 190 of file FareParserHelper.hpp.

24.43.2 Constructor & Destructor Documentation

24.43.2.1 SIMFQT::FareParserHelper::storeMinimumStay::storeMinimumStay (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 339 of file FareParserHelper.cpp.

24.43.3 Member Function Documentation

24.43.3.1 void SIMFQT::FareParserHelper::storeMinimumStay::operator() (unsigned int *iMinStay*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 344 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setMinimumS

24.43.4 Member Data Documentation

24.43.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operator()(), SIMFQT::FareParserHelper::storeChangeF SIMFQT::FareParserHelper::storeSaturdayStay::operator()(), SIMFQT::FareParserHelper::storeAdvancePurchase::oper SIMFQT::FareParserHelper::storeChannel::operator()(), SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()() SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

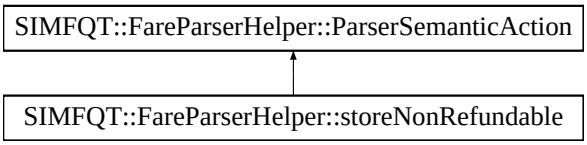
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.44 SIMFQT::FareParserHelper::storeNonRefundable Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeNonRefundable:



Public Member Functions

- storeNonRefundable (FareRuleStruct &)
- void operator() (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.44.1 Detailed Description

Store the parsed refundable option

Definition at line 180 of file FareParserHelper.hpp.

24.44.2 Constructor & Destructor Documentation

24.44.2.1 SIMFQT::FareParserHelper::storeNonRefundable::storeNonRefundable (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 314 of file FareParserHelper.cpp.

24.44.3 Member Function Documentation

24.44.3.1 void SIMFQT::FareParserHelper::storeNonRefundable::operator() (char *iNonRefundable,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 319 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setNonRefun

24.44.4 Member Data Documentation

24.44.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), operator()(), SIMFQT::FareParserHelper::storeChangeFe
SIMFQT::FareParserHelper::storeSaturdayStay::operator()(), SIMFQT::FareParserHelper::storeAdvancePurchase::oper
SIMFQT::FareParserHelper::storeChannel::operator()(), SIMFQT::FareParserHelper::storeCabinCode::operator()(),
SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(),
SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope
SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()()
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

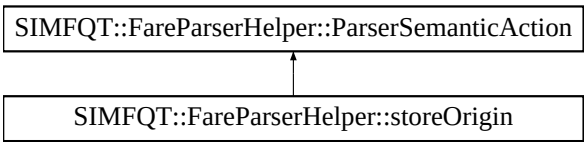
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.45 SIMFQT::FareParserHelper::storeOrigin Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeOrigin:



Public Member Functions

- storeOrigin (FareRuleStruct &)
- void operator() (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.45.1 Detailed Description

Store the parsed origin.

Definition at line 49 of file FareParserHelper.hpp.

24.45.2 Constructor & Destructor Documentation

24.45.2.1 SIMFQT::FareParserHelper::storeOrigin::storeOrigin (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 54 of file FareParserHelper.cpp.

24.45.3 Member Function Documentation

24.45.3.1 void SIMFQT::FareParserHelper::storeOrigin::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 59 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setOrigin().

24.45.4 Member Data Documentation

24.45.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(
SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(),
SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope
SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::oper
SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(),
operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

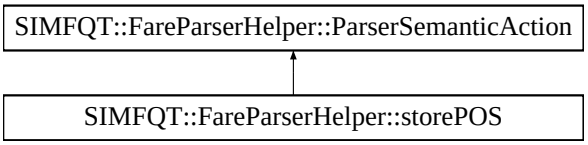
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.46 SIMFQT::FareParserHelper::storePOS Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storePOS:



Public Member Functions

- storePOS (FareRuleStruct &)
- void operator() (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.46.1 Detailed Description

Store the parsed customer point_of_sale.

Definition at line 120 of file FareParserHelper.hpp.

24.46.2 Constructor & Destructor Documentation

24.46.2.1 SIMFQT::FareParserHelper::storePOS::storePOS (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 181 of file FareParserHelper.cpp.

24.46.3 Member Function Documentation

24.46.3.1 void SIMFQT::FareParserHelper::storePOS::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 186 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, SIMFQT::FareRuleStruct::getDestination(), SIMFQT::FareRuleStruct::getOrigin(), and SIMFQT::FareRuleStruct::setPOS().

24.46.4 Member Data Documentation

24.46.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(), SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operator(), SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator(), SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(), SIMFQT::FareParserHelper::storeCabinCode::operator()(), operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator(), SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::operator(), SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

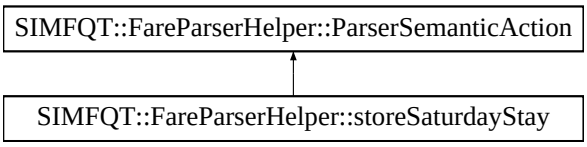
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.47 SIMFQT::FareParserHelper::storeSaturdayStay Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeSaturdayStay:



Public Member Functions

- storeSaturdayStay (FareRuleStruct &)
- void operator() (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.47.1 Detailed Description

Store the parsed saturday night.

Definition at line 160 of file FareParserHelper.hpp.

24.47.2 Constructor & Destructor Documentation

24.47.2.1 SIMFQT::FareParserHelper::storeSaturdayStay::storeSaturdayStay (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 263 of file FareParserHelper.cpp.

24.47.3 Member Function Documentation

24.47.3.1 void SIMFQT::FareParserHelper::storeSaturdayStay::operator() (char *iSaturdayStay,* boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 268 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setSaturdayS

24.47.4 Member Data Documentation

24.47.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), operator()(), SIMFQT::FareParserHelper::storeAdvancePu
SIMFQT::FareParserHelper::storeChannel::operator()(), SIMFQT::FareParserHelper::storeCabinCode::operator()(),
SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(),
SIMFQT::FareParserHelper::storeStartRangeTime::operator()(), SIMFQT::FareParserHelper::storeDateRangeEnd::ope
SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()()
SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(),
and SIMFQT::FareParserHelper::storeFareId::operator()().

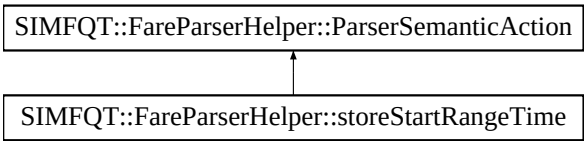
The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.48 SIMFQT::FareParserHelper::storeStartRangeTime Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeStartRangeTime:



Public Member Functions

- storeStartRangeTime (FareRuleStruct &)
- void operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.48.1 Detailed Description

Store the parsed start range time.

Definition at line 100 of file FareParserHelper.hpp.

24.48.2 Constructor & Destructor Documentation

24.48.2.1 SIMFQT::FareParserHelper::storeStartRangeTime::storeStartRangeTime (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 145 of file FareParserHelper.cpp.

24.48.3 Member Function Documentation

24.48.3.1 void SIMFQT::FareParserHelper::storeStartRangeTime::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 150 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, SIMFQT::FareRuleStruct::_itSeconds, SIMFQT::FareRuleStruct::calculateTime(), and SIMFQT::FareRuleStruct::setTimeRangeStart().

24.48.4 Member Data Documentation

24.48.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(), SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(), SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operator(), SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator(), SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(), SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(), SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), operator()(), SIMFQT::FareParserHelper::storeDateRange, SIMFQT::FareParserHelper::storeDateRangeStart::operator()(), SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

The documentation for this struct was generated from the following files:

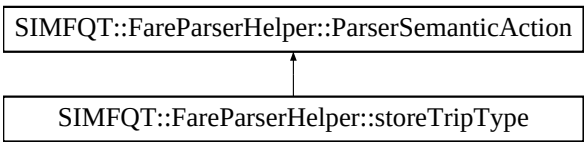
- simfqt/command/FareParserHelper.hpp

- simfqt/command/FareParserHelper.cpp

24.49 SIMFQT::FareParserHelper::storeTripType Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`

Inheritance diagram for SIMFQT::FareParserHelper::storeTripType:



Public Member Functions

- storeTripType (FareRuleStruct &)
- void operator() (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- FareRuleStruct & _fareRule

24.49.1 Detailed Description

Store the parsed customer trip type.

Definition at line 69 of file FareParserHelper.hpp.

24.49.2 Constructor & Destructor Documentation

24.49.2.1 SIMFQT::FareParserHelper::storeTripType::storeTripType (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 86 of file FareParserHelper.cpp.

24.49.3 Member Function Documentation

24.49.3.1 void SIMFQT::FareParserHelper::storeTripType::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 91 of file FareParserHelper.cpp.

References SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule, and SIMFQT::FareRuleStruct::setTripType()

24.49.4 Member Data Documentation

24.49.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file FareParserHelper.hpp.

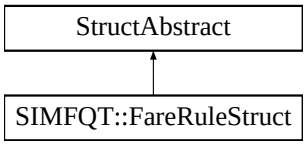
Referenced by SIMFQT::FareParserHelper::doEndFare::operator()(), SIMFQT::FareParserHelper::storeClass::operator(
SIMFQT::FareParserHelper::storeAirlineCode::operator()(), SIMFQT::FareParserHelper::storeFare::operator()(),
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operat
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator(
SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(),
SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::ope
SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::oper
operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(), SIMFQT::FareParserHelper::storeOrigin::opera
and SIMFQT::FareParserHelper::storeFareId::operator()().

The documentation for this struct was generated from the following files:

- simfqt/command/FareParserHelper.hpp
- simfqt/command/FareParserHelper.cpp

24.50 StructAbstract Class Reference

Inheritance diagram for StructAbstract:



The documentation for this class was generated from the following file:

- simfqt/bom/FareRuleStruct.hpp

25 File Documentation

25.1 doc/local/authors.doc File Reference

25.2 doc/local/codingrules.doc File Reference

```
#include <simfqt/basic/BasConst_General.hpp>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
```

Namespaces

- namespace SIMFQT

Variables

- const std::string SIMFQT::DEFAULT_FARE_QUOTER_ID = "IATA"

25.16 BasConst.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 #include <simfqt/basic/BasConst_General.hpp>
00005 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00006
```

```
00007 namespace SIMFQT {
00008
00010   const std::string DEFAULT_FARE_QUOTER_ID = "IATA";
00011
00012 }
```

25.17 simfqt/basic/BasConst_General.hpp File Reference

Namespaces

- namespace SIMFQT

25.18 BasConst_General.hpp

```
00001 #ifndef __SIMFQT_BAS_BASCONST_GENERAL_HPP
00002 #define __SIMFQT_BAS_BASCONST_GENERAL_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007
00008 namespace SIMFQT {
00009
00010 }
00011 #endif // __SIMFQT_BAS_BASCONST_GENERAL_HPP
```

25.19 simfqt/basic/BasConst_SIMFQT_Service.hpp File Reference

```
#include <string>
```

Namespaces

- namespace SIMFQT

25.20 BasConst_SIMFQT_Service.hpp

```
00001 #ifndef __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 #include <string>
00008
00009 namespace SIMFQT {
00010
00012   extern const std::string DEFAULT_FARE_QUOTER_ID;
00013
00014 }
00015 #endif // __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
```

25.21 simfqt/batches/simfqt_parseFareRules.cpp File Reference

```
#include <cassert>
#include <iostream>
#include <sstream>
#include <fstream>
#include <vector>
#include <list>
#include <string>
#include <boost/date_time/posix_time/posix_time.hpp>
#include <boost/date_time/gregorian/gregorian.hpp>
#include <boost/tokenizer.hpp>
#include <boost/program_options.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/SIMFQT_Service.hpp>
#include <simfqt/config/simfqt-paths.hpp>
```

Typedefs

- typedef std::vector< std::string > WordList_T

Functions

- const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log")
- const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_-DIR"/fare01.csv")
- template<class T >
  std::ostream & operator<< (std::ostream &os, const std::vector< T > &v)
- int readConfiguration (int argc, char *argv[], bool &ioIsBuiltin, stdair::Filename_T &ioFareInputFilename, std::string &ioLogFilename)
- int main (int argc, char *argv[])

Variables

- const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false
- const int K_SIMFQT_EARLY_RETURN_STATUS = 99

25.21.1 Typedef Documentation

25.21.1.1 typedef std::vector<std::string> WordList_T

Definition at line 24 of file simfqt_parseFareRules.cpp.

25.21.2 Function Documentation

25.21.2.1 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log")

Default name and location for the log file.

Referenced by readConfiguration().

25.21.2.2 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR"/fare01.csv")

Default name and location for the (CSV) input file.

Referenced by readConfiguration().

25.21.2.3 template<class T > std::ostream& operator<< (std::ostream & *os,* const std::vector< T > & *v*)

Definition at line 44 of file simfqt_parseFareRules.cpp.

25.21.2.4 int readConfiguration (int *argc,* char * *argv[],* bool & *ioIsBuiltin,* stdair::Filename_T & *ioFareInputFilename,* std::string & *ioLogFilename*)

Read and parse the command line options.

Definition at line 51 of file simfqt_parseFareRules.cpp.

References K_SIMFQT_DEFAULT_BUILT_IN_INPUT, K_SIMFQT_DEFAULT_FARE_-INPUT_FILENAME(), K_SIMFQT_DEFAULT_LOG_FILENAME(), K_SIMFQT_EARLY_-RETURN_STATUS, PACKAGE_NAME, PACKAGE_VERSION, and PREFIXDIR.

Referenced by main().

25.21.2.5 int main (int *argc,* char * *argv[]*)

Definition at line 154 of file simfqt_parseFareRules.cpp.

References SIMFQT::SIMFQT_Service::buildBookingRequest(), SIMFQT::SIMFQT_Service::buildSampleBom(), SIMFQT::SIMFQT_Service::buildSampleTravelSolutions(), SIMFQT::SIMFQT_Service::csvDisplay(), K_SIMFQT_EARLY_RETURN_STATUS, SIMFQT::SIMFQT_Service::parseAndLoad(), SIMFQT::SIMFQT_Service::quotePrices(), and readConfiguration().

25.21.3 Variable Documentation

25.21.3.1 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false

Default for the input type. It can be either built-in or provided by an input file. That latter must then be given with the -i option.

Definition at line 37 of file simfqt_parseFareRules.cpp.

Referenced by readConfiguration().

25.21.3.2 const int K_SIMFQT_EARLY_RETURN_STATUS = 99

Early return status (so that it can be differentiated from an error).

Definition at line 40 of file simfqt_parseFareRules.cpp.

Referenced by main(), and readConfiguration().

25.22 simfqt_parseFareRules.cpp

```
00001 // STL
00002 #include <cassert>
00003 #include <iostream>
00004 #include <sstream>
00005 #include <fstream>
00006 #include <vector>
00007 #include <list>
00008 #include <string>
00009 // Boost (Extended STL)
00010 #include <boost/date_time/posix_time/posix_time.hpp>
00011 #include <boost/date_time/gregorian/gregorian.hpp>
00012 #include <boost/tokenizer.hpp>
00013 #include <boost/program_options.hpp>
00014 // StdAir
00015 #include <stdair/STDAIR_Service.hpp>
00016 #include <stdair/bom/TravelSolutionStruct.hpp>
00017 #include <stdair/bom/BookingRequestStruct.hpp>
00018 #include <stdair/service/Logger.hpp>
00019 // Simfqt
00020 #include <simfqt/SIMFQT_Service.hpp>
00021 #include <simfqt/config/simfqt-paths.hpp>
00022
00023 // //////// Type definitions ///////
00024 typedef std::vector<std::string> WordList_T;
00025
00026
00027 // //////// Constants //////
00029 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log");
00030
00032 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00033                                                          "/fare01.csv");
00034
00037 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00038
00040 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00041
00042 // ///////// Parsing of Options & Configuration /////////
00043 // A helper function to simplify the main part.
00044 template<class T> std::ostream& operator<< (std::ostream& os,
00045                                             const std::vector<T>& v) {
00046   std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
```

```
00047   return os;
00048 }
00049
00051 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00052                        stdair::Filename_T& ioFareInputFilename,
00053                        std::string& ioLogFilename) {
00054
00055   // Default for the built-in input
00056   ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00057
00058   // Declare a group of options that will be allowed only on command line
00059   boost::program_options::options_description generic ("Generic options");
00060   generic.add_options()
00061     ("prefix", "print installation prefix")
00062     ("version,v", "print version string")
00063     ("help,h", "produce help message");
00064
00065   // Declare a group of options that will be allowed both on command
00066   // line and in config file
00067   boost::program_options::options_description config ("Configuration");
00068   config.add_options()
00069     ("builtin,b",
00070      "The sample BOM tree can be either built-in or parsed from an input file. Th
      at latter must then be given with the -f/--fare option")
00071     ("fare,f",
00072      boost::program_options::value< std::string >(&ioFareInputFilename)->default_
      value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),
00073      "(CSV) input file for the fare rules")
00074     ("log,l",
00075      boost::program_options::value< std::string >(&ioLogFilename)->default_value(
      K_SIMFQT_DEFAULT_LOG_FILENAME),
00076      "Filename for the logs")
00077     ;
00078
00079   // Hidden options, will be allowed both on command line and
00080   // in config file, but will not be shown to the user.
00081   boost::program_options::options_description hidden ("Hidden options");
00082   hidden.add_options()
00083     ("copyright",
00084      boost::program_options::value< std::vector<std::string> >(),
00085      "Show the copyright (license)");
00086
00087   boost::program_options::options_description cmdline_options;
00088   cmdline_options.add(generic).add(config).add(hidden);
00089
00090   boost::program_options::options_description config_file_options;
00091   config_file_options.add(config).add(hidden);
00092
00093   boost::program_options::options_description visible ("Allowed options");
00094   visible.add(generic).add(config);
00095
00096   boost::program_options::positional_options_description p;
00097   p.add ("copyright", -1);
00098
00099   boost::program_options::variables_map vm;
00100   boost::program_options::
00101     store (boost::program_options::command_line_parser (argc, argv).
00102            options (cmdline_options).positional(p).run(), vm);
00103
00104   std::ifstream ifs ("simfqt.cfg");
00105   boost::program_options::store (parse_config_file (ifs, config_file_options),
00106                                  vm);
```

```
00107   boost::program_options::notify (vm); if (vm.count ("help")) {
00108     std::cout << visible << std::endl;
00109     return K_SIMFQT_EARLY_RETURN_STATUS;
00110   }
00111
00112   if (vm.count ("version")) {
00113     std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00114     return K_SIMFQT_EARLY_RETURN_STATUS;
00115   }
00116
00117   if (vm.count ("prefix")) {
00118     std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00119     return K_SIMFQT_EARLY_RETURN_STATUS;
00120   }
00121
00122   if (vm.count ("builtin")) {
00123     ioIsBuiltin = true;
00124   }
00125   const std::string isBuiltinStr = (ioIsBuiltin == true)?"yes":"no";
00126   std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00127
00128   if (ioIsBuiltin == false) {
00129
00130     // The BOM tree should be built from parsing a fare (and O&D) file
00131     if (vm.count ("fare")) {
00132       ioFareInputFilename = vm["fare"].as< std::string >();
00133       std::cout << "Input fare filename is: " << ioFareInputFilename
00134                 << std::endl;
00135
00136     } else {
00137       // The built-in option is not selected. However, no fare file
00138       // is specified
00139       std::cerr << "Either one among the -b/--builtin and -f/--fare "
00140                 << "options must be specified" << std::endl;
00141     }
00142   }
00143
00144   if (vm.count ("log")) {
00145     ioLogFilename = vm["log"].as< std::string >();
00146     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00147   }
00148
00149   return 0;
00150 }
00151
00152
00153 // /////////////// M A I N /////////////////
00154 int main (int argc, char* argv[]) {
00155
00156   // State whether the BOM tree should be built-in or parsed from an input file
00157   bool isBuiltin;
00158
00159   // Fare input filename
00160   stdair::Filename_T lFareInputFilename;
00161
00162   // Output log File
00163   stdair::Filename_T lLogFilename;
00164
00165   // Call the command-line option parser
00166   const int lOptionParserStatus =
00167     readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename);
00168
```

```
00169   if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00170     return 0;
00171   }
00172
00173   // Set the log parameters
00174   std::ofstream logOutputFile;
00175   // Open and clean the log outputfile
00176   logOutputFile.open (lLogFilename.c_str());
00177   logOutputFile.clear();
00178
00179   // Initialise the Simfqt service object
00180   const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00181
00182   SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00183
00184   // DEBUG
00185   STDAIR_LOG_DEBUG ("Welcome to Simfqt");
00186
00187   // Build a default sample list of travel solutions
00188   stdair::TravelSolutionList_T lTravelSolutionList;
00189   simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00190
00191   // Build a default booking request
00192   stdair::BookingRequestStruct lBookingRequest =
00193     simfqtService.buildBookingRequest();
00194
00195   // Check wether or not a (CSV) input file should be read
00196   if (isBuiltin == true) {
00197
00198     // Build the default sample BOM tree (filled with fares) for Simfqt
00199     simfqtService.buildSampleBom();
00200
00201   } else {
00202
00203     // Build the BOM tree from parsing a fare file
00204     SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);
00205     simfqtService.parseAndLoad (lFareFilePath);
00206
00207   }
00208
00209   // DEBUG: Display the travel solutions
00210   const std::string& lTSCSVDump =
00211     simfqtService.csvDisplay (lTravelSolutionList);
00212   STDAIR_LOG_DEBUG (lTSCSVDump);
00213
00214   // FareQuote the sample list of travel solutions
00215   simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00216
00217   // DEBUG: Display the whole BOM tree
00218   const std::string& lBOMCSVDump = simfqtService.csvDisplay();
00219   STDAIR_LOG_DEBUG ("BOM tree: " << lBOMCSVDump);
00220
00221   // DEBUG: Display the travel solutions
00222   const std::string& lTSCSVDumpEnd
00223     = simfqtService.csvDisplay (lTravelSolutionList);
00224   STDAIR_LOG_DEBUG (lTSCSVDumpEnd);
00225
00226   // Close the Log outputFile
00227   logOutputFile.close();
00228
00229   /*
00230     Note: as that program is not intended to be run on a server in
```

```
00231     production, it is better not to catch the exceptions. When it
00232     happens (that an exception is throwned), that way we get the
00233     call stack.
00234   */
00235
00236   return 0;
00237 }
00238
```

25.23 simfqt/bom/FareRuleStruct.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <vector>
#include <stdair/basic/BasConst_General.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
```

Namespaces

- namespace SIMFQT

25.24 FareRuleStruct.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 #include <vector>
00008 // StdAir
00009 #include <stdair/basic/BasConst_General.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 // SIMFQT
00012 #include <simfqt/bom/FareRuleStruct.hpp>
00013
00014 namespace SIMFQT {
00015
00016   // ////////////////////////////////////////////////////////////////////
00017   FareRuleStruct::FareRuleStruct ()
00018     :_fareId(0),
00019      _origin(""),
00020      _destination(""),
00021      _dateRangeStart(stdair::DEFAULT_DATE),
00022      _dateRangeEnd(stdair::DEFAULT_DATE),
00023      _timeRangeStart(stdair::DEFAULT_EPSILON_DURATION),
00024      _timeRangeEnd(stdair::DEFAULT_EPSILON_DURATION),
00025      _cabinCode (""),
00026      _pos (""),
00027      _advancePurchase(0),
00028      _saturdayStay("T"),
```

```
00029       _changeFees("T"),
00030       _nonRefundable("T"),
00031       _minimumStay(0),
00032       _fare(0),
00033       _airlineCode(""),
00034       _classCode("") {
00035
00036   }
00037
00038   // ////////////////////////////////////////////////////////////////////
00039   stdair::Date_T FareRuleStruct::calculateDate() const {
00040     _itYear.check(); _itMonth.check(); _itDay.check();
00041     return stdair::Date_T (_itYear._value, _itMonth._value, _itDay._value);
00042   }
00043
00044   // ////////////////////////////////////////////////////////////////////
00045   stdair::Duration_T FareRuleStruct::calculateTime() const {
00046     _itHours.check(); _itMinutes.check(); _itSeconds.check();
00047     return boost::posix_time::hours (_itHours._value)
00048       + boost::posix_time::minutes (_itMinutes._value)
00049       + boost::posix_time::seconds (_itSeconds._value);
00050   }
00051
00052
00053   // ////////////////////////////////////////////////////////////////////
00054   const std::string FareRuleStruct::describe () const {
00055
00056     std::ostringstream oStr;
00057     oStr << "FareRule: " << _fareId << ", ";
00058
00059     oStr << _origin << "-" << _destination << " ("
00060          << _pos << "), " << _channel << ", [";
00061     oStr << _dateRangeStart << "/" << _dateRangeEnd << "] - ["
00062          << boost::posix_time::to_simple_string (_timeRangeStart) << "/"
00063          << boost::posix_time::to_simple_string (_timeRangeEnd) << "], ";
00064
00065     oStr << _cabinCode << ", " << _fare  << " EUR, ";
00066     oStr << _tripType << ", " << _saturdayStay << ", "
00067          <<  _changeFees << ", " << _nonRefundable << ", "
00068          << _advancePurchase << ", " << _minimumStay << ", ";
00069
00070     // Sanity check
00071     assert (_airlineCodeList.size() == _classCodeList.size());
00072
00073     // Browse the airline and class pathes
00074     unsigned short idx = 0;
00075     stdair::ClassList_StringList_T::const_iterator itClass =
00076       _classCodeList.begin();
00077     for (stdair::AirlineCodeList_T::const_iterator itAirline =
00078            _airlineCodeList.begin();
00079          itAirline != _airlineCodeList.end(); ++itAirline, ++itClass, ++idx) {
00080       if (idx != 0) {
00081         oStr << " - ";
00082       }
00083       const stdair::AirlineCode_T lAirlineCode = *itAirline;
00084       const stdair::ClassCode_T lClassCode = *itClass;
00085       oStr << lAirlineCode << " / " << lClassCode;
00086     }
00087
00088     return oStr.str();
00089   }
00090
```

```
00091 }
00092
```

25.25 simfqt/bom/FareRuleStruct.hpp File Reference

```
#include <string>
#include <vector>
#include <stdair/stdair_demand_types.hpp>
#include <stdair/stdair_inventory_types.hpp>
#include <stdair/basic/StructAbstract.hpp>
#include <stdair/basic/BasParserTypes.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- struct SIMFQT::FareRuleStruct

Namespaces

- namespace SIMFQT

25.26 FareRuleStruct.hpp

```
00001 #ifndef __SIMFQT_BOM_FARERULESTRUCT_HPP
00002 #define __SIMFQT_BOM_FARERULESTRUCT_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // STL
00008 #include <string>
00009 #include <vector>
00010 // StdAir
00011 #include <stdair/stdair_demand_types.hpp>
00012 #include <stdair/stdair_inventory_types.hpp>
00013 #include <stdair/basic/StructAbstract.hpp>
00014 #include <stdair/basic/BasParserTypes.hpp>
00015 // SIMFQT
00016 #include <simfqt/SIMFQT_Types.hpp>
00017
00018 namespace SIMFQT {
00019
00021   struct FareRuleStruct : public stdair::StructAbstract {
00022   public:
00023
00025     FareRuleStruct ();
00026
00027   public:
00028     // ///////// Getters ///////////
```

```
00030     SIMFQT::FareQuoteID_T getFareID () const {
00031       return _fareId;
00032     }
00033
00035     stdair::AirportCode_T getOrigin () const {
00036       return _origin;
00037     }
00038
00040     stdair::AirportCode_T getDestination () const {
00041       return _destination;
00042     }
00043
00045     stdair::TripType_T getTripType () const {
00046       return _tripType;
00047     }
00048
00050     stdair::Date_T getDateRangeStart () const {
00051       return _dateRangeStart;
00052     }
00053
00055     stdair::Date_T getDateRangeEnd () const {
00056       return _dateRangeEnd;
00057     }
00058
00060     stdair::Duration_T getTimeRangeStart () const {
00061       return _timeRangeStart;
00062     }
00063
00065     stdair::Duration_T getTimeRangeEnd () const {
00066       return _timeRangeEnd;
00067     }
00068
00070     stdair::CabinCode_T getCabinCode () const {
00071       return _cabinCode;
00072     }
00073
00075     const stdair::CityCode_T getPOS () const {
00076       return _pos;
00077     }
00078
00080     stdair::ChannelLabel_T getChannel () const {
00081       return _channel;
00082     }
00083
00085     stdair::DayDuration_T getAdvancePurchase () const {
00086       return _advancePurchase;
00087     }
00088
00090     stdair::SaturdayStay_T getSaturdayStay () const {
00091       return _saturdayStay;
00092     }
00093
00095     stdair::ChangeFees_T getChangeFees () const {
00096       return _changeFees;
00097     }
00098
00100     stdair::NonRefundable_T getNonRefundable () const {
00101       return _nonRefundable;
00102     }
00103
00105     stdair::DayDuration_T getMinimumStay () const {
00106       return _minimumStay;
```

```
00107     }
00108
00110     stdair::PriceValue_T getFare () const {
00111       return _fare;
00112     }
00113
00115     stdair::AirlineCode_T getAirlineCode () const {
00116       return _airlineCode;
00117     }
00118
00120     stdair::ClassCode_T getClassCode () const {
00121       return _classCode;
00122     }
00123
00125     const unsigned int getAirlineListSize () const {
00126       return _airlineCodeList.size();
00127     }
00128
00130     const unsigned int getClassCodeListSize () const {
00131       return _classCodeList.size();
00132     }
00133
00135     stdair::AirlineCodeList_T getAirlineList () const {
00136       return _airlineCodeList;
00137     }
00138
00140     stdair::ClassList_StringList_T getClassCodeList () const {
00141       return _classCodeList;
00142     }
00143
00144   public:
00145     // ///////// Display support methods //////////
00147     stdair::Date_T calculateDate() const;
00148
00150     stdair::Duration_T calculateTime() const;
00151
00153     const std::string describe() const;
00154
00155   public:
00156     // ///////// Setters //////////
00158     void setFareID (const SIMFQT::FareQuoteID_T& iFareQuoteID) {
00159       _fareId = iFareQuoteID;
00160     }
00161
00163     void setOrigin (const stdair::AirportCode_T& iOrigin) {
00164       _origin = iOrigin;
00165     }
00166
00168     void setDestination (const stdair::AirportCode_T& iDestination) {
00169       _destination = iDestination;
00170     }
00171
00173     void setTripType (const stdair::TripType_T& iTripType) {
00174       _tripType = iTripType;
00175     }
00176
00178     void setDateRangeStart (const stdair::Date_T& iDateRangeStart) {
00179       _dateRangeStart = iDateRangeStart;
00180     }
00181
00183     void setDateRangeEnd (const stdair::Date_T& iDateRangeEnd) {
00184       _dateRangeEnd = iDateRangeEnd;
```

```
00185     }
00186
00188     void setTimeRangeStart (const stdair::Duration_T& iTimeRangeStart) {
00189       _timeRangeStart = iTimeRangeStart;
00190     }
00191
00193     void setTimeRangeEnd (const stdair::Duration_T& iTimeRangeEnd) {
00194       _timeRangeEnd = iTimeRangeEnd;
00195     }
00196
00198     void setCabinCode (const stdair::CabinCode_T& iCabinCode) {
00199       _cabinCode = iCabinCode;
00200     }
00201
00203     void setPOS (const stdair::CityCode_T& iPOS) {
00204       _pos = iPOS;
00205     }
00206
00208     void setChannel (const stdair::ChannelLabel_T& iChannel) {
00209       _channel = iChannel;
00210     }
00211
00213     void setAdvancePurchase (const stdair::DayDuration_T& iAdvancePurchase) {
00214       _advancePurchase = iAdvancePurchase;
00215     }
00216
00218     void setSaturdayStay (const stdair::SaturdayStay_T& iSaturdayStay) {
00219       _saturdayStay = iSaturdayStay;
00220     }
00221
00223     void setChangeFees (const stdair::ChangeFees_T& iChangeFees) {
00224       _changeFees = iChangeFees;
00225     }
00226
00228     void setNonRefundable (const stdair::NonRefundable_T& iNonRefundable) {
00229       _nonRefundable = iNonRefundable;
00230     }
00231
00233     void setMinimumStay (const stdair::DayDuration_T& iMinimumStay) {
00234       _minimumStay = iMinimumStay;
00235     }
00236
00238     void setFare (const stdair::PriceValue_T& iFare) {
00239       _fare = iFare;
00240     }
00241
00243     void setAirlineCode (const stdair::AirlineCode_T&  iAirlineCode) {
00244       _airlineCode = iAirlineCode;
00245     }
00246
00248     void setClassCode (const stdair::ClassCode_T& iClassCode) {
00249       _classCode = iClassCode;
00250     }
00251
00253     void clearAirlineCodeList () {
00254       _airlineCodeList.clear();
00255     }
00256
00258     void clearClassCodeList () {
00259       _classCodeList.clear();
00260     }
00261
```

```
00263     void addAirlineCode (const stdair::AirlineCode_T& iAirlineCode)  {
00264       _airlineCodeList.push_back (iAirlineCode);
00265     }
00266
00268     void addClassCode (const stdair::ClassCode_T& iClassCode) {
00269       _classCodeList.push_back (iClassCode);
00270     }
00271
00272   public:
00273     // ////////////////// Attributes /////////////////
00275     stdair::year_t _itYear;
00276     stdair::month_t _itMonth;
00277     stdair::day_t _itDay;
00278
00280     stdair::hour_t _itHours;
00281     stdair::minute_t _itMinutes;
00282     stdair::second_t _itSeconds;
00283
00284   private:
00285     // ////////////////// Attributes /////////////////
00287     SIMFQT::FareQuoteID_T _fareId;
00288
00290     stdair::AirportCode_T _origin;
00291
00293     stdair::AirportCode_T _destination;
00294
00296     stdair::TripType_T _tripType;
00297
00299     stdair::Date_T _dateRangeStart;
00300
00302     stdair::Date_T _dateRangeEnd;
00303
00305     stdair::Duration_T _timeRangeStart;
00306
00308     stdair::Duration_T _timeRangeEnd;
00309
00311     stdair::CabinCode_T _cabinCode;
00312
00314     stdair::CityCode_T _pos;
00315
00317     stdair::ChannelLabel_T _channel;
00318
00320     stdair::DayDuration_T _advancePurchase;
00321
00323     stdair::SaturdayStay_T _saturdayStay;
00324
00326     stdair::ChangeFees_T _changeFees;
00327
00329     stdair::NonRefundable_T _nonRefundable;
00330
00332     stdair::DayDuration_T _minimumStay;
00333
00335     stdair::PriceValue_T _fare;
00336
00338     stdair::AirlineCode_T _airlineCode;
00339
00341     stdair::ClassCode_T _classCode;
00342
00345     stdair::AirlineCodeList_T _airlineCodeList;
00346
00349     stdair::ClassList_StringList_T _classCodeList;
00350
```

```
00351   };
00352
00353 }
00354 #endif // __SIMFQT_BOM_FARERULESTRUCT_HPP
```

25.27 simfqt/command/FareParser.cpp File Reference

```
#include <cassert>
#include <string>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/command/FareParserHelper.hpp>
#include <simfqt/command/FareParser.hpp>
```

Namespaces

- namespace SIMFQT

25.28 FareParser.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <string>
00007 // StdAir
00008 #include <stdair/basic/BasFileMgr.hpp>
00009 //#include <stdair/bom/Inventory.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 // AirSched
00012 #include <simfqt/command/FareParserHelper.hpp>
00013 #include <simfqt/command/FareParser.hpp>
00014
00015 namespace SIMFQT {
00016
00017   // ////////////////////////////////////////////////////////////////////
00018   void FareParser::fareRuleGeneration (const FareFilePath& iFareFilename,
00019                                        stdair::BomRoot& ioBomRoot) {
00020
00021     const stdair::Filename_T lFilename = iFareFilename.name();
00022
00023     // Check that the file path given as input corresponds to an actual file
00024     const bool doesExistAndIsReadable =
00025       stdair::BasFileMgr::doesExistAndIsReadable (lFilename);
00026     if (doesExistAndIsReadable == false) {
00027       STDAIR_LOG_ERROR ("The fare input file, '" << lFilename
00028                         << "', can not be retrieved on the file-system");
00029       throw FareInputFileNotFoundException ("The fare input file '" + lFilename
00030                                             + "' does not exist or can not "
00031                                             "be read");
00032     }
```

```
00033
00034     // Initialise the fare file parser.
00035     FareRuleFileParser lFareRuleFileParser (ioBomRoot, lFilename);
00036
00037     // Parse the CSV-formatted fare input file and generate the
00038     // corresponding fare rules.
00039     lFareRuleFileParser.generateFareRules ();
00040
00041   }
00042
00043 }
```

25.29 simfqt/command/FareParser.hpp File Reference

```
#include <string>
#include <stdair/stdair_basic_types.hpp>
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class SIMFQT::FareParser

Namespaces

- namespace stdair

  Forward declarations.
- namespace SIMFQT

25.30 FareParser.hpp

```
00001 #ifndef __SIMFQT_CMD_FAREPARSER_HPP
00002 #define __SIMFQT_CMD_FAREPARSER_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/command/CmdAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00015 // Forward declarations.
00016 namespace stdair {
00017   class BomRoot;
00018 }
00019
00020 namespace SIMFQT {
```

```
00021
00023   class FareParser : public stdair::CmdAbstract {
00024   public:
00030     static void fareRuleGeneration (const FareFilePath&, stdair::BomRoot&);
00031   };
00032 }
00033 #endif // __SIMFQT_CMD_FAREPARSER_HPP
```

25.31 simfqt/command/FareParserHelper.cpp File Reference

```
#include <cassert>
#include <vector>
#include <fstream>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/command/FareParserHelper.hpp>
#include <simfqt/command/FareRuleGenerator.hpp>
```

Namespaces

- namespace SIMFQT
- namespace SIMFQT::FareParserHelper

Variables

- stdair::int1_p_t SIMFQT::FareParserHelper::int1_p
- stdair::uint2_p_t SIMFQT::FareParserHelper::uint2_p
- stdair::uint4_p_t SIMFQT::FareParserHelper::uint4_p
- stdair::uint1_4_p_t SIMFQT::FareParserHelper::uint1_4_p
- stdair::hour_p_t SIMFQT::FareParserHelper::hour_p
- stdair::minute_p_t SIMFQT::FareParserHelper::minute_p
- stdair::second_p_t SIMFQT::FareParserHelper::second_p
- stdair::year_p_t SIMFQT::FareParserHelper::year_p
- stdair::month_p_t SIMFQT::FareParserHelper::month_p
- stdair::day_p_t SIMFQT::FareParserHelper::day_p

25.32 FareParserHelper.cpp

```
00001  // //////////////////////////////////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <vector>
```

```
00007 #include <fstream>
00008 // StdAir
00009 #include <stdair/basic/BasFileMgr.hpp>
00010 #include <stdair/bom/BomRoot.hpp>
00011 #include <stdair/service/Logger.hpp>
00012 // SIMFQT
00013 #include <simfqt/command/FareParserHelper.hpp>
00014 #include <simfqt/command/FareRuleGenerator.hpp>
00015
00016 namespace SIMFQT {
00017
00018   namespace FareParserHelper {
00019
00020     // ////////////////////////////////////////////////////////////////////
00021     //  Semantic actions
00022     // ////////////////////////////////////////////////////////////////////
00023
00024     ParserSemanticAction::
00025     ParserSemanticAction (FareRuleStruct& ioFareRule)
00026       : _fareRule (ioFareRule) {
00027     }
00028
00029     // ////////////////////////////////////////////////////////////////////
00030     storeFareId::
00031     storeFareId (FareRuleStruct& ioFareRule)
00032       : ParserSemanticAction (ioFareRule) {
00033     }
00034
00035     // ////////////////////////////////////////////////////////////////////
00036     void storeFareId::operator() (unsigned int iFareId,
00037                                   boost::spirit::qi::unused_type,
00038                                   boost::spirit::qi::unused_type) const {
00039       _fareRule.setFareID (iFareId);
00040
00041       // DEBUG
00042       //STDAIR_LOG_DEBUG ( "Fare Id: " << _fareRule.getFareID ());
00043       const stdair::AirlineCode_T lEmptyAirlineCode ("");
00044       _fareRule.setAirlineCode(lEmptyAirlineCode);
00045       _fareRule.clearAirlineCodeList();
00046       const stdair::ClassCode_T lEmptyClassCode ("");
00047       _fareRule.setClassCode(lEmptyClassCode);
00048       _fareRule.clearClassCodeList();
00049       _fareRule._itSeconds = 0;
00050     }
00051
00052     // ////////////////////////////////////////////////////////////////////
00053     storeOrigin ::
00054     storeOrigin (FareRuleStruct& ioFareRule)
00055       : ParserSemanticAction (ioFareRule) {
00056     }
00057
00058     // ////////////////////////////////////////////////////////////////////
00059     void storeOrigin::operator() (std::vector<char> iChar,
00060                                   boost::spirit::qi::unused_type,
00061                                   boost::spirit::qi::unused_type) const {
00062        const stdair::AirportCode_T lOrigin (iChar.begin(), iChar.end());
00063        _fareRule.setOrigin (lOrigin);
00064        // DEBUG
00065        //STDAIR_LOG_DEBUG ( "Origin: " << _fareRule.getOrigin ());
00066     }
00067
00068     // ////////////////////////////////////////////////////////////////////
```

```
00069     storeDestination ::
00070     storeDestination (FareRuleStruct& ioFareRule)
00071       : ParserSemanticAction (ioFareRule) {
00072     }
00073
00074     // ////////////////////////////////////////////////////////////////////
00075     void storeDestination::operator() (std::vector<char> iChar,
00076                                        boost::spirit::qi::unused_type,
00077                                        boost::spirit::qi::unused_type) const {
00078        const stdair::AirportCode_T lDestination (iChar.begin(), iChar.end());
00079        _fareRule.setDestination (lDestination);
00080        // DEBUG
00081        //STDAIR_LOG_DEBUG ( "Destination: " << _fareRule.getDestination ());
00082     }
00083
00084     // ////////////////////////////////////////////////////////////////////
00085     storeTripType ::
00086     storeTripType (FareRuleStruct& ioFareRule)
00087       : ParserSemanticAction (ioFareRule) {
00088     }
00089
00090     // ////////////////////////////////////////////////////////////////////
00091     void storeTripType::operator() (std::vector<char> iChar,
00092                                     boost::spirit::qi::unused_type,
00093                                     boost::spirit::qi::unused_type) const {
00094       const stdair::TripType_T lTripType (iChar.begin(), iChar.end());
00095       if (lTripType == "OW" || lTripType == "RT") {
00096         _fareRule.setTripType (lTripType);
00097       } else {
00098         // ERROR
00099         STDAIR_LOG_ERROR ("Invalid trip type  " << lTripType);
00100       }
00101       // DEBUG
00102       //STDAIR_LOG_DEBUG ("TripType: " << _fareRule.getTripType ());
00103     }
00104
00105
00106     // ////////////////////////////////////////////////////////////////////
00107     storeDateRangeStart::
00108     storeDateRangeStart (FareRuleStruct& ioFareRule)
00109       : ParserSemanticAction (ioFareRule) {
00110     }
00111
00112     // ////////////////////////////////////////////////////////////////////
00113     void storeDateRangeStart::operator() (boost::spirit::qi::unused_type,
00114                                           boost::spirit::qi::unused_type,
00115                                           boost::spirit::qi::unused_type) const {

00116       const stdair::Date_T& lDateStart = _fareRule.calculateDate ();
00117       _fareRule.setDateRangeStart (lDateStart);
00118       // DEBUG
00119       //STDAIR_LOG_DEBUG ("Date Range Start: " << _fareRule.getDateRangeStart ())
    ;
00120     }
00121
00122     // ////////////////////////////////////////////////////////////////////
00123     storeDateRangeEnd::
00124     storeDateRangeEnd(FareRuleStruct& ioFareRule)
00125       : ParserSemanticAction (ioFareRule) {
00126     }
00127
00128     // ////////////////////////////////////////////////////////////////////
```

```
00129     void storeDateRangeEnd::operator() (boost::spirit::qi::unused_type,
00130                                         boost::spirit::qi::unused_type,
00131                                         boost::spirit::qi::unused_type) const {
00132       const stdair::Date_T& lDateEnd = _fareRule.calculateDate ();
00133       // As a Boost date period (DatePeriod_T) defines the last day of
00134       // the period to be end-date - one day, we have to add one day to that
00135       // end date before.
00136       const stdair::DateOffset_T oneDay (1);
00137       const stdair::Date_T lBoostDateEnd = lDateEnd + oneDay;
00138       _fareRule.setDateRangeEnd (lBoostDateEnd);
00139        // DEBUG
00140       //STDAIR_LOG_DEBUG ("Date Range End: " << _fareRule.getDateRangeEnd ());
00141     }
00142
00143     // ////////////////////////////////////////////////////////////////////
00144     storeStartRangeTime::
00145     storeStartRangeTime (FareRuleStruct& ioFareRule)
00146       : ParserSemanticAction (ioFareRule) {
00147     }
00148
00149     // ////////////////////////////////////////////////////////////////////
00150     void storeStartRangeTime::operator() (boost::spirit::qi::unused_type,
00151                                           boost::spirit::qi::unused_type,
00152                                           boost::spirit::qi::unused_type) const {

00153       const stdair::Duration_T& lTimeStart = _fareRule.calculateTime ();
00154       _fareRule.setTimeRangeStart (lTimeStart);
00155       // DEBUG
00156       //STDAIR_LOG_DEBUG ("Time Range Start: " << _fareRule.getTimeRangeStart ())
      ;
00157       // Reset the number of seconds
00158       _fareRule._itSeconds = 0;
00159     }
00160
00161     // ////////////////////////////////////////////////////////////////////
00162     storeEndRangeTime::
00163     storeEndRangeTime (FareRuleStruct& ioFareRule)
00164       : ParserSemanticAction (ioFareRule) {
00165     }
00166
00167     // ////////////////////////////////////////////////////////////////////
00168     void storeEndRangeTime::operator() (boost::spirit::qi::unused_type,
00169                                         boost::spirit::qi::unused_type,
00170                                         boost::spirit::qi::unused_type) const {
00171       const stdair::Duration_T& lTimeEnd = _fareRule.calculateTime ();
00172       _fareRule.setTimeRangeEnd (lTimeEnd);
00173       // DEBUG
00174       //STDAIR_LOG_DEBUG ("Time Range End: " << _fareRule.getTimeRangeEnd ());
00175       // Reset the number of seconds
00176       _fareRule._itSeconds = 0;
00177     }
00178
00179     // ////////////////////////////////////////////////////////////////////
00180     storePOS ::
00181     storePOS (FareRuleStruct& ioFareRule)
00182       : ParserSemanticAction (ioFareRule) {
00183     }
00184
00185     // ////////////////////////////////////////////////////////////////////
00186     void storePOS::operator() (std::vector<char> iChar,
00187                                boost::spirit::qi::unused_type,
00188                                boost::spirit::qi::unused_type) const {
```

```
00189       const stdair::CityCode_T lPOS (iChar.begin(), iChar.end());
00190       if (lPOS == _fareRule.getOrigin() || lPOS == _fareRule.getDestination()) {
00191         _fareRule.setPOS (lPOS);
00192       } else if (lPOS == "ROW") {
00193         const stdair::CityCode_T lPOSROW ("ROW");
00194         _fareRule.setPOS (lPOSROW);
00195       } else {
00196         // ERROR
00197         STDAIR_LOG_ERROR ("Invalid point of sale " << lPOS);
00198       }
00199       // DEBUG
00200       //STDAIR_LOG_DEBUG ("POS: " << _fareRule.getPOS ());
00201     }
00202
00203     // ////////////////////////////////////////////////////////////////////
00204     storeCabinCode ::
00205     storeCabinCode (FareRuleStruct& ioFareRule)
00206       : ParserSemanticAction (ioFareRule) {
00207     }
00208
00209     // ////////////////////////////////////////////////////////////////////
00210     void storeCabinCode::operator() (char iChar,
00211                                      boost::spirit::qi::unused_type,
00212                                      boost::spirit::qi::unused_type) const {
00213       std::ostringstream ostr;
00214       ostr << iChar;
00215       const std::string cabinCodeStr = ostr.str();
00216       const stdair::CabinCode_T& lCabinCode (cabinCodeStr);
00217       _fareRule.setCabinCode (lCabinCode);
00218
00219       // DEBUG
00220       //STDAIR_LOG_DEBUG ("Cabin Code: " << _fareRule.getCabinCode ());

00221
00222     }
00223
00224     // ////////////////////////////////////////////////////////////////////
00225     storeChannel ::
00226     storeChannel (FareRuleStruct& ioFareRule)
00227       : ParserSemanticAction (ioFareRule) {
00228     }
00229
00230     // ////////////////////////////////////////////////////////////////////
00231     void storeChannel::operator() (std::vector<char> iChar,
00232                                    boost::spirit::qi::unused_type,
00233                                    boost::spirit::qi::unused_type) const {
00234       const stdair::ChannelLabel_T lChannel (iChar.begin(), iChar.end());
00235       if (lChannel != "IN" && lChannel != "IF"
00236           && lChannel != "DN" && lChannel != "DF") {
00237         // ERROR
00238         STDAIR_LOG_ERROR ("Invalid channel " << lChannel);
00239       }
00240       _fareRule.setChannel (lChannel);
00241       // DEBUG
00242       //STDAIR_LOG_DEBUG ("Channel: " << _fareRule.getChannel ());
00243     }
00244
00245     // ////////////////////////////////////////////////////////////////////
00246     storeAdvancePurchase ::
00247     storeAdvancePurchase (FareRuleStruct& ioFareRule)
00248       : ParserSemanticAction (ioFareRule) {
00249     }
```

```
00250
00251     // ////////////////////////////////////////////////////////////////////
00252     void storeAdvancePurchase::operator() (unsigned int iAdancePurchase,
00253                                            boost::spirit::qi::unused_type,
00254                                            boost::spirit::qi::unused_type) const
      {
00255       const stdair::DayDuration_T& lAdancePurchase = iAdancePurchase;
00256       _fareRule.setAdvancePurchase (lAdancePurchase);
00257       // DEBUG
00258       //STDAIR_LOG_DEBUG ( "Advance Purchase: " << _fareRule.getAdvancePurchase (
      ));
00259     }
00260
00261     // ////////////////////////////////////////////////////////////////////
00262     storeSaturdayStay ::
00263     storeSaturdayStay (FareRuleStruct& ioFareRule)
00264       : ParserSemanticAction (ioFareRule) {
00265     }
00266
00267     // ////////////////////////////////////////////////////////////////////
00268     void storeSaturdayStay::operator() (char iSaturdayStay,
00269                                         boost::spirit::qi::unused_type,
00270                                         boost::spirit::qi::unused_type) const {
00271       bool lBool = false;
00272       if (iSaturdayStay == 'T') {
00273         lBool = true;
00274       } else {
00275         if (iSaturdayStay != 'F') {
00276           // DEBUG
00277           STDAIR_LOG_DEBUG ("Invalid saturdayStay char " << iSaturdayStay);
00278         }
00279       }
00280       const stdair::SaturdayStay_T lSaturdayStay (lBool);
00281       _fareRule.setSaturdayStay (lSaturdayStay);
00282       // DEBUG
00283       //STDAIR_LOG_DEBUG ("Saturday Stay: " << _fareRule.getSaturdayStay ());
00284     }
00285
00286     // ////////////////////////////////////////////////////////////////////
00287     storeChangeFees ::
00288     storeChangeFees (FareRuleStruct& ioFareRule)
00289       : ParserSemanticAction (ioFareRule) {
00290     }
00291
00292     // ////////////////////////////////////////////////////////////////////
00293     void storeChangeFees::operator() (char iChangefees,
00294                                       boost::spirit::qi::unused_type,
00295                                       boost::spirit::qi::unused_type) const {
00296
00297       bool lBool = false;
00298       if (iChangefees == 'T') {
00299         lBool = true;
00300       } else {
00301         if (iChangefees != 'F') {
00302           // DEBUG
00303           STDAIR_LOG_DEBUG ("Invalid change fees char " << iChangefees);
00304         }
00305       }
00306       const stdair::ChangeFees_T lChangefees (lBool);
00307       _fareRule.setChangeFees (lChangefees);
00308       // DEBUG
00309       //STDAIR_LOG_DEBUG ("Change fees: " << _fareRule.getChangeFees ());
```

```
00310     }
00311
00312     // ////////////////////////////////////////////////////////////////////
00313     storeNonRefundable ::
00314     storeNonRefundable (FareRuleStruct& ioFareRule)
00315       : ParserSemanticAction (ioFareRule) {
00316     }
00317
00318     // ////////////////////////////////////////////////////////////////////
00319     void storeNonRefundable::operator() (char iNonRefundable,
00320                                          boost::spirit::qi::unused_type,
00321                                          boost::spirit::qi::unused_type) const {
00322        bool lBool = false;
00323        if (iNonRefundable == 'T') {
00324          lBool = true;
00325        } else {
00326          if (iNonRefundable != 'F') {
00327            // DEBUG
00328            STDAIR_LOG_DEBUG ("Invalid non refundable char " << iNonRefundable);
00329          }
00330        }
00331        const stdair::NonRefundable_T lNonRefundable (lBool);
00332        _fareRule.setNonRefundable (lNonRefundable);
00333        // DEBUG
00334        //STDAIR_LOG_DEBUG ("Non refundable: " << _fareRule.getNonRefundable ());
00335     }
00336
00337     // ////////////////////////////////////////////////////////////////////
00338     storeMinimumStay ::
00339     storeMinimumStay (FareRuleStruct& ioFareRule)
00340       : ParserSemanticAction (ioFareRule) {
00341     }
00342
00343     // ////////////////////////////////////////////////////////////////////
00344     void storeMinimumStay::operator() (unsigned int iMinStay,
00345                                        boost::spirit::qi::unused_type,
00346                                        boost::spirit::qi::unused_type) const {
00347       const stdair::DayDuration_T lMinStay = iMinStay;
00348       _fareRule.setMinimumStay (lMinStay);
00349       // DEBUG
00350       //STDAIR_LOG_DEBUG ("Minimum Stay: " << _fareRule.getMinimumStay ());
00351     }
00352
00353     // ////////////////////////////////////////////////////////////////////
00354     storeFare ::
00355     storeFare (FareRuleStruct& ioFareRule)
00356       : ParserSemanticAction (ioFareRule) {
00357     }
00358
00359     // ////////////////////////////////////////////////////////////////////
00360     void storeFare::operator() (double iFare,
00361                                 boost::spirit::qi::unused_type,
00362                                 boost::spirit::qi::unused_type) const {
00363      const stdair::PriceValue_T lFare = iFare;
00364       _fareRule.setFare (lFare);
00365       // DEBUG
00366       //STDAIR_LOG_DEBUG ("Fare: " << _fareRule.getFare ());
00367     }
00368
00369     // ////////////////////////////////////////////////////////////////////
00370     storeAirlineCode ::
00371     storeAirlineCode (FareRuleStruct& ioFareRule)
```

```
00372       : ParserSemanticAction (ioFareRule) {
00373     }
00374
00375     // ////////////////////////////////////////////////////////////////////
00376     void storeAirlineCode::operator() (std::vector<char> iChar,
00377                                        boost::spirit::qi::unused_type,
00378                                        boost::spirit::qi::unused_type) const {
00379
00380       const stdair::AirlineCode_T lAirlineCode (iChar.begin(), iChar.end());
00381       // Insertion of this airline Code list in the whole AirlineCode name
00382       _fareRule.addAirlineCode (lAirlineCode);
00383       // DEBUG
00384       //STDAIR_LOG_DEBUG ( "Airline code: " << lAirlineCode);
00385     }
00386
00387     // ////////////////////////////////////////////////////////////////////
00388     storeClass ::
00389     storeClass (FareRuleStruct& ioFareRule)
00390       : ParserSemanticAction (ioFareRule) {
00391     }
00392
00393     // ////////////////////////////////////////////////////////////////////
00394     void storeClass::operator() (std::vector<char> iChar,
00395                                  boost::spirit::qi::unused_type,
00396                                  boost::spirit::qi::unused_type) const {
00397       std::ostringstream ostr;
00398       for (std::vector<char>::const_iterator lItVector = iChar.begin();
00399          lItVector != iChar.end();
00400          lItVector++) {
00401         ostr << *lItVector;
00402       }
00403       const std::string classCodeStr = ostr.str();
00404       const stdair::ClassCode_T lClassCode (classCodeStr);
00405       // Insertion of this class Code list in the whole classCode name
00406       _fareRule.addClassCode (lClassCode);
00407       // DEBUG
00408       //STDAIR_LOG_DEBUG ("Class Code: " << lClassCode);
00409     }
00410
00411     // ////////////////////////////////////////////////////////////////////
00412     doEndFare::
00413     doEndFare (stdair::BomRoot& ioBomRoot,
00414                FareRuleStruct& ioFareRule)
00415       : ParserSemanticAction (ioFareRule),
00416         _bomRoot (ioBomRoot) {
00417     }
00418
00419     // ////////////////////////////////////////////////////////////////////
00420     void doEndFare::operator() (boost::spirit::qi::unused_type,
00421                                 boost::spirit::qi::unused_type,
00422                                 boost::spirit::qi::unused_type) const {
00423       // DEBUG
00424       //STDAIR_LOG_DEBUG ("Do End");
00425       // Generation of the fare rule object.
00426       FareRuleGenerator::createAirportPair (_bomRoot, _fareRule);
00427       STDAIR_LOG_DEBUG(_fareRule.describe());
00428     }
00429
00430     // ////////////////////////////////////////////////////////////////////
00431     //
00432     //  Utility Parsers
00433     //
```

```
00434     // ////////////////////////////////////////////////////////////////////
00436     namespace bsq = boost::spirit::qi;
00437     namespace bsa = boost::spirit::ascii;
00438
00440     stdair::int1_p_t int1_p;
00441
00443     stdair::uint2_p_t uint2_p;
00444
00446     stdair::uint4_p_t uint4_p;
00447
00449     stdair::uint1_4_p_t uint1_4_p;
00450
00452     stdair::hour_p_t hour_p;
00453     stdair::minute_p_t minute_p;
00454     stdair::second_p_t second_p;
00455
00457     stdair::year_p_t year_p;
00458     stdair::month_p_t month_p;
00459     stdair::day_p_t day_p;
00460
00461     // ////////////////////////////////////////////////////////////////////
00462     //  (Boost Spirit) Grammar Definition
00463     // ////////////////////////////////////////////////////////////////////
00464
00465     // ////////////////////////////////////////////////////////////////////
00466     FareRuleParser::FareRuleParser (stdair::BomRoot& ioBomRoot,
00467                                     FareRuleStruct& iofareRule) :
00468       FareRuleParser::base_type(start),
00469       _bomRoot(ioBomRoot), _fareRule(iofareRule) {
00470
00471       start = *(comments | fare_rule);
00472
00473       comments = (bsq::lexeme[bsq::repeat(2)[bsa::char_('/')]
00474                               >> +(bsa::char_ - bsq::eol)
00475                               >> bsq::eol]
00476                   | bsq::lexeme[bsa::char_('/') >>bsa::char_('*')
00477                                 >> +(bsa::char_ - bsa::char_('*'))
00478                                 >> bsa::char_('*') >> bsa::char_('/')]);
00479
00480       fare_rule = fare_key
00481         >> +( ';' >> segment )
00482         >> fare_rule_end[doEndFare(_bomRoot, _fareRule)];
00483
00484       fare_rule_end = bsa::char_(';');
00485
00486       fare_key = fare_id
00487         >> ';' >> origin >> ';' >> destination
00488         >> ';' >> tripType
00489         >> ';' >> dateRangeStart >> ';' >> dateRangeEnd
00490         >> ';' >> timeRangeStart >> ';' >> timeRangeEnd
00491         >> ';' >> point_of_sale >>  ';' >> cabinCode >> ';' >> channel
00492         >> ';' >> advancePurchase >> ';' >> saturdayStay
00493         >> ';' >> changeFees >> ';' >> nonRefundable
00494         >> ';' >> minimumStay >> ';' >> fare;
00495
00496       fare_id = uint1_4_p[storeFareId(_fareRule)];
00497
00498       origin = bsq::repeat(3)[bsa::char_("A-Z")][storeOrigin(_fareRule)];
00499
00500       destination =
00501         bsq::repeat(3)[bsa::char_("A-Z")][storeDestination(_fareRule)];
00502
```

```
00503       tripType =
00504         bsq::repeat(2)[bsa::char_("A-Z")][storeTripType(_fareRule)];
00505
00506       dateRangeStart = date[storeDateRangeStart(_fareRule)];
00507
00508       dateRangeEnd = date[storeDateRangeEnd(_fareRule)];
00509
00510       date = bsq::lexeme
00511         [year_p[boost::phoenix::ref(_fareRule._itYear) = bsq::labels::_1]
00512         >> '-'
00513         >> month_p[boost::phoenix::ref(_fareRule._itMonth) = bsq::labels::_1]
00514         >> '-'
00515         >> day_p[boost::phoenix::ref(_fareRule._itDay) = bsq::labels::_1] ];
00516
00517       timeRangeStart = time[storeStartRangeTime(_fareRule)];
00518
00519       timeRangeEnd = time[storeEndRangeTime(_fareRule)];
00520
00521       time =  bsq::lexeme
00522         [hour_p[boost::phoenix::ref(_fareRule._itHours) = bsq::labels::_1]
00523         >> ':'
00524         >> minute_p[boost::phoenix::ref(_fareRule._itMinutes) = bsq::labels::_1]

00525         >> - (':' >> second_p[boost::phoenix::ref(_fareRule._itSeconds) = bsq::la
      bels::_1]) ];
00526
00527       point_of_sale = bsq::repeat(3)[bsa::char_("A-Z")][storePOS(_fareRule)];
00528
00529       cabinCode = bsa::char_("A-Z")[storeCabinCode(_fareRule)];
00530
00531       channel = bsq::repeat(2)[bsa::char_("A-Z")][storeChannel(_fareRule)];
00532
00533       advancePurchase = uint1_4_p[storeAdvancePurchase(_fareRule)];
00534
00535       saturdayStay = bsa::char_("A-Z")[storeSaturdayStay(_fareRule)];
00536
00537       changeFees = bsa::char_("A-Z")[storeChangeFees(_fareRule)];
00538
00539       nonRefundable = bsa::char_("A-Z")[storeNonRefundable(_fareRule)];
00540
00541       minimumStay = uint1_4_p[storeMinimumStay(_fareRule)];
00542
00543       fare = bsq::double_[storeFare(_fareRule)];
00544
00545       segment = bsq::repeat(2)[bsa::char_("A-Z")][storeAirlineCode(_fareRule)]
00546         >> ';'
00547         >> bsq::repeat(1,bsq::inf)[bsa::char_("A-Z")][storeClass(_fareRule)];
00548
00549       //BOOST_SPIRIT_DEBUG_NODE (FareRuleParser);
00550       BOOST_SPIRIT_DEBUG_NODE (start);
00551       BOOST_SPIRIT_DEBUG_NODE (comments);
00552       BOOST_SPIRIT_DEBUG_NODE (fare_rule);
00553       BOOST_SPIRIT_DEBUG_NODE (fare_rule_end);
00554       BOOST_SPIRIT_DEBUG_NODE (fare_key);
00555       BOOST_SPIRIT_DEBUG_NODE (fare_id);
00556       BOOST_SPIRIT_DEBUG_NODE (origin);
00557       BOOST_SPIRIT_DEBUG_NODE (destination);
00558       BOOST_SPIRIT_DEBUG_NODE (tripType);
00559       BOOST_SPIRIT_DEBUG_NODE (dateRangeStart);
00560       BOOST_SPIRIT_DEBUG_NODE (dateRangeEnd);
00561       BOOST_SPIRIT_DEBUG_NODE (date);
00562       BOOST_SPIRIT_DEBUG_NODE (timeRangeStart);
```

```
00563       BOOST_SPIRIT_DEBUG_NODE (timeRangeEnd);
00564       BOOST_SPIRIT_DEBUG_NODE (time);
00565       BOOST_SPIRIT_DEBUG_NODE (point_of_sale);
00566       BOOST_SPIRIT_DEBUG_NODE (cabinCode);
00567       BOOST_SPIRIT_DEBUG_NODE (channel);
00568       BOOST_SPIRIT_DEBUG_NODE (advancePurchase);
00569       BOOST_SPIRIT_DEBUG_NODE (saturdayStay);
00570       BOOST_SPIRIT_DEBUG_NODE (changeFees);
00571       BOOST_SPIRIT_DEBUG_NODE (nonRefundable);
00572       BOOST_SPIRIT_DEBUG_NODE (minimumStay);
00573       BOOST_SPIRIT_DEBUG_NODE (fare);
00574       BOOST_SPIRIT_DEBUG_NODE (segment);
00575     }
00576   }
00577
00579   //
00580   //  Entry class for the file parser
00581   //
00583
00584   // ////////////////////////////////////////////////////////////////////
00585   FareRuleFileParser::
00586   FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00587                       const stdair::Filename_T& iFilename)
00588     : _filename (iFilename), _bomRoot (ioBomRoot) {
00589     init();
00590   }
00591
00592   // ////////////////////////////////////////////////////////////////////
00593   void FareRuleFileParser::init() {
00594     // Check that the file exists and is readable
00595     const bool doesExistAndIsReadable =
00596       stdair::BasFileMgr::doesExistAndIsReadable (_filename);
00597
00598     if (doesExistAndIsReadable == false) {
00599       STDAIR_LOG_ERROR ("The fare schedule file " << _filename
00600                         << " does not exist or can not be  read.");
00601
00602       throw FareInputFileNotFoundException ("The fare file " + _filename
00603                                             + " does not exist or can not be read
      ");
00604     }
00605   }
00606
00607   // ////////////////////////////////////////////////////////////////////
00608   void FareRuleFileParser::generateFareRules () {
00609
00610     STDAIR_LOG_DEBUG ("Parsing fare input file: " << _filename);
00611
00612     // File to be parsed
00613     const std::string* lFileName = &_filename;
00614     const char *lChar = (*lFileName).c_str();
00615     std::ifstream fileToBeParsed(lChar, std::ios_base::in);
00616
00617     // Check if the filename exist and can be open
00618     if (fileToBeParsed == false) {
00619       STDAIR_LOG_ERROR ("The fare file " << _filename << " can not be open."
00620                         << std::endl);
00621
00622       throw FareInputFileNotFoundException ("The file " + _filename
00623                                             + " does not exist or can not be read
      ");
00624     }
```

```
00625
00626     // Create an input iterator
00627     stdair::base_iterator_t inputBegin (fileToBeParsed);
00628
00629     // Convert input iterator to an iterator usable by spirit parser
00630     stdair::iterator_t
00631       start (boost::spirit::make_default_multi_pass (inputBegin));
00632     stdair::iterator_t end;
00633
00634     // Initialise the parser (grammar) with the helper/staging structure.
00635     FareParserHelper::FareRuleParser lFPParser(_bomRoot, _fareRule);
00636
00637     // Launch the parsing of the file and, thanks to the doEndFare
00638     // call-back structure, the building of the whole BomRoot BOM
00639     const bool hasParsingBeenSuccesful =
00640        boost::spirit::qi::phrase_parse (start, end, lFPParser,
00641                                         boost::spirit::ascii::space);
00642
00643     if (hasParsingBeenSuccesful == false) {
00644       // TODO: decide whether to throw an exceqption
00645       STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00646                         << " failed");
00647       throw FareFileParsingFailedException ("Parsing of fare input file: "
00648                                             + _filename + " failed");
00649     }
00650
00651     if  (start != end) {
00652       // TODO: decide whether to throw an exception
00653       STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00654                         << " failed");
00655       throw FareFileParsingFailedException ("Parsing of fare input file: "
00656                                             + _filename + " failed");
00657     }
00658
00659     if (hasParsingBeenSuccesful == true && start == end) {
00660       STDAIR_LOG_DEBUG ("Parsing of fare input file: " << _filename
00661       << " succeeded");
00662     }
00663
00664   }
00665
00666 }
```

25.33 simfqt/command/FareParserHelper.hpp File Reference

```
#include <string>
#include <stdair/basic/BasParserTypes.hpp>
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
```

Classes

- struct SIMFQT::FareParserHelper::ParserSemanticAction
- struct SIMFQT::FareParserHelper::storeFareId

- struct SIMFQT::FareParserHelper::storeOrigin
- struct SIMFQT::FareParserHelper::storeDestination
- struct SIMFQT::FareParserHelper::storeTripType
- struct SIMFQT::FareParserHelper::storeDateRangeStart
- struct SIMFQT::FareParserHelper::storeDateRangeEnd
- struct SIMFQT::FareParserHelper::storeStartRangeTime
- struct SIMFQT::FareParserHelper::storeEndRangeTime
- struct SIMFQT::FareParserHelper::storePOS
- struct SIMFQT::FareParserHelper::storeCabinCode
- struct SIMFQT::FareParserHelper::storeChannel
- struct SIMFQT::FareParserHelper::storeAdvancePurchase
- struct SIMFQT::FareParserHelper::storeSaturdayStay
- struct SIMFQT::FareParserHelper::storeChangeFees
- struct SIMFQT::FareParserHelper::storeNonRefundable
- struct SIMFQT::FareParserHelper::storeMinimumStay
- struct SIMFQT::FareParserHelper::storeFare
- struct SIMFQT::FareParserHelper::storeAirlineCode
- struct SIMFQT::FareParserHelper::storeClass
- struct SIMFQT::FareParserHelper::doEndFare
- struct SIMFQT::FareParserHelper::FareRuleParser
- class SIMFQT::FareRuleFileParser

Namespaces

- namespace stdair

  Forward declarations.
- namespace SIMFQT
- namespace SIMFQT::FareParserHelper

25.34 FareParserHelper.hpp

```
00001 #ifndef __SIMFQT_CMD_FAREPARSERHELPER_HPP
00002 #define __SIMFQT_CMD_FAREPARSERHELPER_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // STL
00008 #include <string>
00009 //#define BOOST_SPIRIT_DEBUG
00010 // StdAir
00011 #include <stdair/basic/BasParserTypes.hpp>
00012 #include <stdair/command/CmdAbstract.hpp>
00013 // Simfqt
00014 #include <simfqt/SIMFQT_Types.hpp>
00015 #include <simfqt/bom/FareRuleStruct.hpp>
00016
00017 // Forward declarations
00018 namespace stdair {
00019   class BomRoot;
```

```
00020 }
00021
00022 namespace SIMFQT {
00023
00024   namespace FareParserHelper {
00025
00026     // ////////////////////////////////////////////////////////////////////
00027     //  Semantic actions
00028     // ////////////////////////////////////////////////////
00030
00031     struct ParserSemanticAction {
00033       ParserSemanticAction (FareRuleStruct&);
00035       FareRuleStruct& _fareRule;
00036     };
00037
00039     struct storeFareId : public ParserSemanticAction {
00041       storeFareId (FareRuleStruct&);
00043       void operator() (unsigned int,
00044                        boost::spirit::qi::unused_type,
00045                        boost::spirit::qi::unused_type) const;
00046     };
00047
00049     struct storeOrigin : public ParserSemanticAction {
00051       storeOrigin (FareRuleStruct&);
00053       void operator() (std::vector<char>,
00054                        boost::spirit::qi::unused_type,
00055                        boost::spirit::qi::unused_type) const;
00056     };
00057
00059     struct storeDestination : public ParserSemanticAction {
00061       storeDestination (FareRuleStruct&);
00063       void operator() (std::vector<char>,
00064                        boost::spirit::qi::unused_type,
00065                        boost::spirit::qi::unused_type) const;
00066     };
00067
00069     struct storeTripType : public ParserSemanticAction {
00071       storeTripType (FareRuleStruct&);
00073       void operator() (std::vector<char>,
00074                        boost::spirit::qi::unused_type,
00075                        boost::spirit::qi::unused_type) const;
00076     };
00077
00078
00080     struct storeDateRangeStart : public ParserSemanticAction {
00082       storeDateRangeStart (FareRuleStruct&);
00084       void operator() (boost::spirit::qi::unused_type,
00085                        boost::spirit::qi::unused_type,
00086                        boost::spirit::qi::unused_type) const;
00087     };
00088
00090     struct storeDateRangeEnd : public ParserSemanticAction {
00092       storeDateRangeEnd (FareRuleStruct&);
00094       void operator() (boost::spirit::qi::unused_type,
00095                        boost::spirit::qi::unused_type,
00096                        boost::spirit::qi::unused_type) const;
00097     };
00098
00100     struct storeStartRangeTime : public ParserSemanticAction {
00102       storeStartRangeTime (FareRuleStruct&);
00104       void operator() (boost::spirit::qi::unused_type,
00105                        boost::spirit::qi::unused_type,
```

```
00106                       boost::spirit::qi::unused_type) const;
00107     };
00108
00110     struct storeEndRangeTime : public ParserSemanticAction {
00112       storeEndRangeTime (FareRuleStruct&);
00114       void operator() (boost::spirit::qi::unused_type,
00115                        boost::spirit::qi::unused_type,
00116                        boost::spirit::qi::unused_type) const;
00117     };
00118
00120     struct storePOS : public ParserSemanticAction {
00122       storePOS (FareRuleStruct&);
00124       void operator() (std::vector<char>,
00125                        boost::spirit::qi::unused_type,
00126                        boost::spirit::qi::unused_type) const;
00127     };
00128
00130     struct storeCabinCode : public ParserSemanticAction {
00132       storeCabinCode  (FareRuleStruct&);
00134       void operator() (char,
00135                        boost::spirit::qi::unused_type,
00136                        boost::spirit::qi::unused_type) const;
00137     };
00138
00140     struct storeChannel : public ParserSemanticAction {
00142       storeChannel (FareRuleStruct&);
00144       void operator() (std::vector<char>,
00145                        boost::spirit::qi::unused_type,
00146                        boost::spirit::qi::unused_type) const;
00147     };
00148
00150     struct storeAdvancePurchase : public ParserSemanticAction {
00152       storeAdvancePurchase (FareRuleStruct&);
00154       void operator() (unsigned int,
00155                        boost::spirit::qi::unused_type,
00156                        boost::spirit::qi::unused_type) const;
00157     };
00158
00160     struct storeSaturdayStay : public ParserSemanticAction {
00162       storeSaturdayStay (FareRuleStruct&);
00164       void operator() (char,
00165                        boost::spirit::qi::unused_type,
00166                        boost::spirit::qi::unused_type) const;
00167     };
00168
00170     struct storeChangeFees : public ParserSemanticAction {
00172       storeChangeFees (FareRuleStruct&);
00174       void operator() (char,
00175                        boost::spirit::qi::unused_type,
00176                        boost::spirit::qi::unused_type) const;
00177     };
00178
00180     struct storeNonRefundable : public ParserSemanticAction {
00182       storeNonRefundable (FareRuleStruct&);
00184       void operator() (char,
00185                        boost::spirit::qi::unused_type,
00186                        boost::spirit::qi::unused_type) const;
00187     };
00188
00190     struct storeMinimumStay : public ParserSemanticAction {
00192       storeMinimumStay (FareRuleStruct&);
00194       void operator() (unsigned int,
```

```
00195                       boost::spirit::qi::unused_type,
00196                       boost::spirit::qi::unused_type) const;
00197     };
00198
00200     struct storeFare : public ParserSemanticAction {
00202       storeFare (FareRuleStruct&);
00204       void operator() (double,
00205                       boost::spirit::qi::unused_type,
00206                       boost::spirit::qi::unused_type) const;
00207     };
00208
00210     struct storeAirlineCode : public ParserSemanticAction {
00212       storeAirlineCode (FareRuleStruct&);
00214       void operator() (std::vector<char>,
00215                       boost::spirit::qi::unused_type,
00216                       boost::spirit::qi::unused_type) const;
00217     };
00218
00220     struct storeClass : public ParserSemanticAction {
00222       storeClass (FareRuleStruct&);
00224       void operator() (std::vector<char>,
00225                       boost::spirit::qi::unused_type,
00226                       boost::spirit::qi::unused_type) const;
00227     };
00228
00230     struct doEndFare : public ParserSemanticAction {
00232       doEndFare (stdair::BomRoot&, FareRuleStruct&);
00234       void operator() (boost::spirit::qi::unused_type,
00235                       boost::spirit::qi::unused_type,
00236                       boost::spirit::qi::unused_type) const;
00238       stdair::BomRoot& _bomRoot;
00239     };
00240
00241
00243     //
00244     //  (Boost Spirit) Grammar Definition
00245     //
00247
00276     struct FareRuleParser :
00277       public boost::spirit::qi::grammar<stdair::iterator_t,
00278                                         boost::spirit::ascii::space_type> {
00279
00280       FareRuleParser (stdair::BomRoot&, FareRuleStruct&);
00281
00282       // Instantiation of rules
00283       boost::spirit::qi::rule<stdair::iterator_t,
00284                               boost::spirit::ascii::space_type>
00285       start, comments, fare_rule, fare_rule_end, fare_key, fare_id, origin,
00286         destination, tripType, dateRangeStart, dateRangeEnd, date,
00287         timeRangeStart, timeRangeEnd, time, point_of_sale, cabinCode, channel,
00288         advancePurchase, saturdayStay, changeFees, nonRefundable, minimumStay,
00289         fare, segment;
00290
00291       // Parser Context
00292       stdair::BomRoot& _bomRoot;
00293       FareRuleStruct& _fareRule;
00294     };
00295
00296   }
00297
00299   //
00300   //  Entry class for the file parser
```

```
00301   //
00303
00309   class FareRuleFileParser : public stdair::CmdAbstract {
00310   public:
00312     FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00313                         const stdair::Filename_T& iFilename);
00314
00316     void generateFareRules ();
00317
00318   private:
00320     void init();
00321
00322   private:
00323     // Attributes
00325     stdair::Filename_T _filename;
00326
00328     stdair::BomRoot& _bomRoot;
00329
00331     FareRuleStruct _fareRule;
00332   };
00333
00334 }
00335 #endif // __SIMFQT_CMD_FAREPARSERHELPER_HPP
```

25.35 simfqt/command/FareQuoter.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <stdair/basic/BasParserTypes.hpp>
#include <stdair/basic/BasConst_BomDisplay.hpp>
#include <stdair/bom/BomKeyManager.hpp>
#include <stdair/bom/ParsedKey.hpp>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/bom/InventoryKey.hpp>
#include <stdair/bom/FlightDateKey.hpp>
#include <stdair/bom/SegmentDateKey.hpp>
#include <stdair/bom/AirlineClassList.hpp>
#include <stdair/bom/AirportPair.hpp>
#include <stdair/bom/PosChannel.hpp>
#include <stdair/bom/DatePeriod.hpp>
#include <stdair/bom/TimePeriod.hpp>
#include <stdair/bom/FareFeatures.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
```

```
#include <stdair/service/Logger.hpp>
#include <stdair/bom/key_types.hpp>
#include <simfqt/SIMFQT_Types.hpp>
#include <simfqt/command/FareQuoter.hpp>
```

Namespaces

- namespace SIMFQT

25.36 FareQuoter.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // StdAir
00008 #include <stdair/basic/BasParserTypes.hpp>
00009 #include <stdair/basic/BasConst_BomDisplay.hpp>
00010 #include <stdair/bom/BomKeyManager.hpp>
00011 #include <stdair/bom/ParsedKey.hpp>
00012 #include <stdair/bom/BomManager.hpp>
00013 #include <stdair/bom/BomRoot.hpp>
00014 #include <stdair/bom/InventoryKey.hpp>
00015 #include <stdair/bom/FlightDateKey.hpp>
00016 #include <stdair/bom/SegmentDateKey.hpp>
00017 #include <stdair/bom/AirlineClassList.hpp>
00018 #include <stdair/bom/AirportPair.hpp>
00019 #include <stdair/bom/PosChannel.hpp>
00020 #include <stdair/bom/DatePeriod.hpp>
00021 #include <stdair/bom/TimePeriod.hpp>
00022 #include <stdair/bom/FareFeatures.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 #include <stdair/bom/TravelSolutionStruct.hpp>
00025 #include <stdair/service/Logger.hpp>
00026 #include <stdair/bom/key_types.hpp>
00027 // SimFQT
00028 #include <simfqt/SIMFQT_Types.hpp>
00029 #include <simfqt/command/FareQuoter.hpp>
00030
00031 namespace SIMFQT {
00032
00033   bool FareQuoter::_atLeastOneAvailableDateRule = false;
00034   bool FareQuoter::_atLeastOneAvailablePosChannel = false;
00035   bool FareQuoter::_atLeastOneAvailableTimeRule = false;
00036   bool FareQuoter::_atLeastOneAvailableFeaturesRule = false;
00037   bool FareQuoter::_atLeastOneAvailableAirlineClassRule= false;
00038
00039   // ////////////////////////////////////////////////////////////////////
00040   FareQuoter::FareQuoter() {
00041     assert (false);
00042   }
00043
00044   // ////////////////////////////////////////////////////////////////////
00045   FareQuoter::FareQuoter(const FareQuoter&) {
```

```
00046     assert (false);
00047   }
00048
00049   // ////////////////////////////////////////////////////////////////////
00050   FareQuoter::~FareQuoter() {
00051   }
00052
00053   // ////////////////////////////////////////////////////////////////////
00054   void FareQuoter::reset() {
00055     _atLeastOneAvailableDateRule = false;
00056     _atLeastOneAvailablePosChannel = false;
00057     _atLeastOneAvailableTimeRule = false;
00058     _atLeastOneAvailableFeaturesRule = false;
00059     _atLeastOneAvailableAirlineClassRule = false;
00060   }
00061
00062
00063   // ////////////////////////////////////////////////////////////////////
00064   void FareQuoter::
00065   priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00066               stdair::TravelSolutionList_T& ioTravelSolutionList,
00067               const stdair::BomRoot& iBomRoot) {
00068
00069     // Do an independent price quote for each travel solution related to the
00070     // booking request.
00071     for (stdair::TravelSolutionList_T::iterator itTravelSolution =
00072            ioTravelSolutionList.begin();
00073          itTravelSolution != ioTravelSolutionList.end(); ++itTravelSolution) {
00074       reset();
00075       // Select a travel solution.
00076       stdair::TravelSolutionStruct& lTravelSolutionStruct = *itTravelSolution;
00077       // Price quote the travel solution into question.
00078       priceQuote (iBookingRequest, lTravelSolutionStruct, iBomRoot);
00079     }
00080   }
00081
00082   // ////////////////////////////////////////////////////////////////////
00083   void FareQuoter::
00084   priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00085               stdair::TravelSolutionStruct& ioTravelSolution,
00086               const stdair::BomRoot& iBomRoot) {
00087
00088     // Get the origin of the first segment in order to get the origin of
00089     // the solution.
00090     const stdair::ParsedKey& lFirstSegmentKey =
00091       getFirstSPParsedKey(ioTravelSolution);
00092     const stdair::AirportCode_T& lOrigin = lFirstSegmentKey._boardingPoint;
00093
00094     // Get the destination of the last segment in order to get the
00095     // destination of the solution.
00096     const stdair::ParsedKey& lLastSegmentKey =
00097       getLastSPParsedKey(ioTravelSolution);
00098     const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00099
00100     // Construct the Airport pair stream of the segment path.
00101     const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00102
00103     // Search for the fare rules having the same origin and destination airports
00104     // as the travel solution
00105     const stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00106       getObjectPtr<stdair::AirportPair> (iBomRoot, lAirportPairKey.toString());
```

```
00107
00108     // If no fare rule has the same origin and destination airports, the pricing
00109     // is not possible, throw an exception.
00110     if (lAirportPair_ptr == NULL) {
00111       STDAIR_LOG_ERROR ("No available fare rule for the "
00112                         << "Origin-Destination pair: "
00113                         << lAirportPairKey.toString());
00114       throw AirportPairNotFoundException ("No available fare rule for "
00115                                           "the Origin-Destination pair: "
00116                                           + lAirportPairKey.toString());
00117     }
00118     // Sanity check.
00119     assert(lAirportPair_ptr != NULL);
00120
00121     // Fare rule(s) with the same origin and destination airports exist(s), now
00122     // the date range need to be checked.
00123     const stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00124     priceQuote(iBookingRequest, ioTravelSolution, lAirportPair);
00125
00126     if (_atLeastOneAvailableAirlineClassRule == false) {
00127       displayMissingFareRuleMessage(iBookingRequest, ioTravelSolution);
00128     }
00129   }
00130
00131   // ////////////////////////////////////////////////////////////////////
00132   void FareQuoter::
00133   priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00134               stdair::TravelSolutionStruct& ioTravelSolution,
00135               const stdair::AirportPair& iAirportPair) {
00136
00137     // Get the first segment path parsed key.
00138     const stdair::ParsedKey lFirstSPParsedKey =
00139       getFirstSPParsedKey(ioTravelSolution);
00140
00141     // Get the date of the first segment date key.
00142     const stdair::FlightDateKey& lFlightDateKey =
00143       lFirstSPParsedKey.getFlightDateKey();
00144     const stdair::Date_T& lSPDate = lFlightDateKey.getDepartureDate();
00145
00146     // Get the list of the fare date ranges.
00147     const stdair::DatePeriodList_T& lFareDatePeriodList =
00148       stdair::BomManager::getList<stdair::DatePeriod> (iAirportPair);
00149
00150     // Browse the list of the fare rules date range.
00151     for (stdair::DatePeriodList_T::const_iterator itDateRange =
00152            lFareDatePeriodList.begin();
00153          itDateRange != lFareDatePeriodList.end(); ++itDateRange) {
00154
00155       const stdair::DatePeriod* lCurrentFareDatePeriod_ptr = *itDateRange ;
00156       assert (lCurrentFareDatePeriod_ptr != NULL);
00157
00158       // Select the fare rules having a corresponding date range.
00159       const bool isDepartureDateValid =
00160         lCurrentFareDatePeriod_ptr->isDepartureDateValid (lSPDate);
00161
00162       // If a fare rule has a corresponding date range, its channel and position
00163       // need to be checked.
00164       if (isDepartureDateValid == true) {
00165         _atLeastOneAvailableDateRule = true;
00166         const stdair::DatePeriod& lCurrentFareDatePeriod =
00167           *lCurrentFareDatePeriod_ptr;
00168         priceQuote (iBookingRequest, ioTravelSolution,
```

```
00169                     lCurrentFareDatePeriod, iAirportPair);
00170       }
00171     }
00172
00173   }
00174
00175   // ////////////////////////////////////////////////////////////////////
00176   void FareQuoter::
00177   priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00178               stdair::TravelSolutionStruct& ioTravelSolution,
00179               const stdair::DatePeriod& iFareDatePeriod,
00180               const stdair::AirportPair& iAirportPair) {
00181
00182     // Get the point-of-sale of the booking request.
00183     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00184
00185     // Get the booking request channel.
00186     const stdair::ChannelLabel_T& lChannel =
00187       iBookingRequest.getBookingChannel();
00188
00189     // Construct the corresponding POS-channel primary key.
00190     const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00191
00192     // Search for the fare rules having the same point-of-sale and channel as
00193     // the travel solution.
00194     const stdair::PosChannelList_T lFarePosChannelList =
00195       stdair::BomManager::getList<stdair::PosChannel> (iFareDatePeriod);
00196
00197     // Browse the list of the fare rules pos channel.
00198     for (stdair::PosChannelList_T::const_iterator itPosChannel =
00199            lFarePosChannelList.begin();
00200          itPosChannel != lFarePosChannelList.end();
00201          ++itPosChannel) {
00202       const stdair::PosChannel* lCurrentFarePosChannel_ptr = *itPosChannel;
00203       assert (lCurrentFarePosChannel_ptr != NULL);
00204
00205       // Get the point-of-sale and channel of the current fare rule.
00206       const stdair::CityCode_T& lCurrentPointOfSale =
00207         lCurrentFarePosChannel_ptr->getPos();
00208       const stdair::ChannelLabel_T& lCurrentChannel =
00209         lCurrentFarePosChannel_ptr->getChannel();
00210
00211       // Select the fare rules having a corresponding pos channel.
00212       if (lCurrentPointOfSale == lPointOfSale &&
00213           lCurrentChannel == lChannel) {
00214         _atLeastOneAvailablePosChannel = true;
00215         // Fare rule(s) with the same point-of-sale and channel exist(s), now
00216         // the time range need to be checked.
00217         const stdair::PosChannel& lFarePosChannel= *lCurrentFarePosChannel_ptr;
00218         priceQuote (iBookingRequest, ioTravelSolution, lFarePosChannel);
00219       }
00220     }
00221
00222   }
00223
00224   // ////////////////////////////////////////////////////////////////////
00225   void FareQuoter::
00226   priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00227               stdair::TravelSolutionStruct& ioTravelSolution,
00228               const stdair::PosChannel& iFarePosChannel) {
00229
00230     // Get the first segment path parsed key.
```

```
00231     const stdair::ParsedKey lFirstSPParsedKey =
00232       getFirstSPParsedKey(ioTravelSolution);
00233
00234     // Get the segment boarding time of the segment path.
00235     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00236
00237     // Get the list of the fare rules time period.
00238     const stdair::TimePeriodList_T& lFareTimePeriodList =
00239       stdair::BomManager::getList<stdair::TimePeriod> (iFarePosChannel);
00240
00241     // Browse the list of the fare rules time range.
00242     for (stdair::TimePeriodList_T::const_iterator itTimeRange =
00243            lFareTimePeriodList.begin();
00244          itTimeRange != lFareTimePeriodList.end();
00245          ++itTimeRange) {
00246       const stdair::TimePeriod* lCurrentFareTimePeriod_ptr = *itTimeRange ;
00247       assert (lCurrentFareTimePeriod_ptr != NULL);
00248
00249       // Select the fare rules having a corresponding time range.
00250       const bool isDepartureTimeValid =
00251         lCurrentFareTimePeriod_ptr->isDepartureTimeValid (lSPTime);
00252
00253       // If a fare rule has a corresponding time range, its advanced purchase,
00254       // trip type and minimum stay duration need to be checked.
00255       if (isDepartureTimeValid) {
00256         _atLeastOneAvailableTimeRule = true;
00257         const stdair::TimePeriod& lCurrentFareTimePeriod =
00258           *lCurrentFareTimePeriod_ptr;
00259         priceQuote (iBookingRequest, ioTravelSolution,
00260                     lCurrentFareTimePeriod, iFarePosChannel);
00261       }
00262     }
00263
00264   }
00265
00266   // ////////////////////////////////////////////////////////////////////
00267   void FareQuoter::
00268   priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00269               stdair::TravelSolutionStruct& ioTravelSolution,
00270               const stdair::TimePeriod& iFareTimePeriod,
00271               const stdair::PosChannel& iFarePosChannel) {
00272
00273     // Get the stay duration of the booking request.
00274     const stdair::DayDuration_T& lStayDuration=
00275       iBookingRequest.getStayDuration();
00276
00277     // Get the booking request trip type.
00278     const stdair::TripType_T& lTripType =
00279       iBookingRequest.getTripType();
00280
00281     // Get the booking request date time.
00282     const stdair::DateTime_T& lRequestDateTime =
00283       iBookingRequest.getRequestDateTime();
00284
00285     // Get the referenced departure date of the segment path.
00286     const stdair::ParsedKey lFirstSPParsedKey =
00287       getFirstSPParsedKey(ioTravelSolution);
00288     const stdair::Date_T& lSPDate =
00289       lFirstSPParsedKey.getFlightDateKey().getDepartureDate();
00290
00291     // Get the segment boarding time of the segment path.
00292     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
```

```
00293
00294     // Construct the date-time type correponding to the flight date
00295     const stdair::DateTime_T lSPDateTime (lSPDate, lSPTime);
00296
00297     bool isTripTypeValid = false;
00298     bool isStayDurationValid = false;
00299     bool isAdvancePurchaseValid = false;
00300
00301     // Get the list of the fare features.
00302     const stdair::FareFeaturesList_T& lFareFeaturesList =
00303       stdair::BomManager::getList<stdair::FareFeatures> (iFareTimePeriod);
00304
00305     // Browse the list of the fare rules features.
00306     for (stdair::FareFeaturesList_T::const_iterator itFareFeatures =
00307            lFareFeaturesList.begin();
00308          itFareFeatures != lFareFeaturesList.end();
00309          ++itFareFeatures) {
00310       const stdair::FareFeatures* lCurrentFareFeatures_ptr =
00311         *itFareFeatures;
00312       assert (lCurrentFareFeatures_ptr != NULL);
00313
00314       // Does the current fare features correspond to a correct trip
00315       // type?
00316       isTripTypeValid =
00317         lCurrentFareFeatures_ptr->isTripTypeValid (lTripType);
00318       // Does the current fare features correspond to a correct stay
00319       // duration?
00320       isStayDurationValid =
00321         lCurrentFareFeatures_ptr->isStayDurationValid (lStayDuration);
00322       // Does the current fare features correspond to a correct advanced
00323       // purchase?
00324       isAdvancePurchaseValid = lCurrentFareFeatures_ptr->
00325         isAdvancePurchaseValid (lRequestDateTime,
00326                                 lSPDateTime);
00327
00328       // Search for the fare rules having corresponding features.
00329       if (isStayDurationValid && isAdvancePurchaseValid && isTripTypeValid){
00330         _atLeastOneAvailableFeaturesRule = true;
00331         // Create a fare structure for the travel solution.
00332         stdair::FareOptionStruct lFareOption;
00333         const stdair::ChangeFees_T& lChangeFees =
00334           lCurrentFareFeatures_ptr->getChangeFees();
00335         // Set the fare change fees.
00336         lFareOption.setChangeFees (lChangeFees);
00337         const stdair::NonRefundable_T& lNonRefundable =
00338           lCurrentFareFeatures_ptr->getRefundableOption();
00339         // Set the fare refundable option.
00340         lFareOption.setNonRefundable (lNonRefundable);
00341         const stdair::SaturdayStay_T& lSaturdayStay =
00342           lCurrentFareFeatures_ptr->getSaturdayStay();
00343         // Set the fare saturday night stay option.
00344         lFareOption.setSaturdayStay (lSaturdayStay);
00345         const stdair::FareFeatures& lCurrentFareFeatures =
00346           *lCurrentFareFeatures_ptr;
00347         priceQuote (iBookingRequest, ioTravelSolution,
00348                     lCurrentFareFeatures, iFarePosChannel,
00349                     lFareOption);
00350       }
00351     }
00352
00353   }
00354
```

```
00355
00356   // ////////////////////////////////////////////////////////////////////
00357   void FareQuoter::
00358   priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00359               stdair::TravelSolutionStruct& ioTravelSolution,
00360               const stdair::FareFeatures& iFareFeatures,
00361               const stdair::PosChannel& iFarePosChannel,
00362               stdair::FareOptionStruct& iFareOption) {
00363
00364     // Get the first segment path parsed key.
00365     const stdair::ParsedKey lFirstSPParsedKey =
00366       getFirstSPParsedKey(ioTravelSolution);
00367
00368     // Get the segment-path of the travel solution.
00369     const stdair::SegmentPath_T& lSegmentPath =
00370       ioTravelSolution.getSegmentPath();
00371
00372     // Get the list of the fare rules.
00373     const stdair::AirlineClassListList_T& lAirlineClassListList =
00374       stdair::BomManager::getList<stdair::AirlineClassList> (iFareFeatures);
00375
00376     bool lCorrectAirlineRule = false;
00377     bool lAtLeastOneDifferentAirline = false;
00378
00379     // Browse the list of airline code list and search for the fare rules
00380     // having a corresponding airline list.
00381     for (stdair::AirlineClassListList_T::const_iterator itAirlineClassList =
00382            lAirlineClassListList.begin();
00383          itAirlineClassList != lAirlineClassListList.end();
00384          ++itAirlineClassList) {
00385       const stdair::AirlineClassList* lCurrentAirlineClassList_ptr =
00386         *itAirlineClassList;
00387       assert (lCurrentAirlineClassList_ptr != NULL);
00388
00389       lCorrectAirlineRule = true;
00390       lAtLeastOneDifferentAirline = false;
00391
00392       const stdair::ClassList_StringList_T lClassList_StringList =
00393         lCurrentAirlineClassList_ptr->getAirlineCodeList();
00394
00395       // Compare the segment path airline list with the fare rule airline list.
00396       if (lClassList_StringList.size() == lSegmentPath.size()) {
00397         // If the two sizes are equal, we need to compare the airline codes.
00398         stdair::SegmentPath_T::const_iterator itSegmentPath =
00399           lSegmentPath.begin();
00400
00401         stdair::ClassList_StringList_T::const_iterator itClassList_String =
00402           lClassList_StringList.begin();
00403         // Browse the segment path airline code list (while the segment path
00404         // airline list is equal to the fare rule airline list).
00405         while (itSegmentPath != lSegmentPath.end()
00406                && lAtLeastOneDifferentAirline == false) {
00407
00408           // Get the segment airline code.
00409           const std::string lSegmentDateKey = *itSegmentPath;
00410           const stdair::ParsedKey& lParsedKey =
00411             stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00412           const stdair::InventoryKey& lInventoryKey =
00413             lParsedKey.getInventoryKey();
00414           const stdair::AirlineCode_T& lSegmentAirlineCode =
00415             lInventoryKey.getAirlineCode();
00416
```

```
00417           // Get the fare rule airline code.
00418           const stdair::AirlineCode_T& lFareRuleAirlineCode =
00419             *itClassList_String;
00420
00421           if (lSegmentAirlineCode != lFareRuleAirlineCode) {
00422             lAtLeastOneDifferentAirline = true;
00423           }
00424           itSegmentPath++;
00425           itClassList_String++;
00426         }
00427
00428       } else {
00429         // If the two sizes are different, the fare rule does not match the
00430         // travel solution into question.
00431         lCorrectAirlineRule = false;
00432       }
00433
00434       // If one segment airline code and one fare rule airline code are
00435       // different then the fare rule does not match the travel solution.
00436       if (lAtLeastOneDifferentAirline == true) {
00437         lCorrectAirlineRule = false;
00438       }
00439
00440       // If the current fare rule is a match, add the fare option structure
00441       // to the travel solution into question.
00442       if (lCorrectAirlineRule == true) {
00443         _atLeastOneAvailableAirlineClassRule = true;
00444         // Get the booking request trip type.
00445         const stdair::TripType_T& lTripType =
00446           iBookingRequest.getTripType();
00447
00448         // Get the travel fare.
00449         stdair::Fare_T lFare =
00450           lCurrentAirlineClassList_ptr->getFare();
00451         // If the trip into question is the inbound or outbound part of a round t
     rip,
00452         // the applicable fare is a half RT fare.
00453         if (lTripType == "RI" || lTripType == "RO") {
00454           lFare /= 2;
00455         }
00456         // Set the travel fare option.
00457         iFareOption.setFare (lFare);
00458         // Copy the class path list into the fare option.
00459         const stdair::ClassList_StringList_T& lClassCodeList =
00460           lCurrentAirlineClassList_ptr->getClassCodeList();
00461         for (stdair::ClassList_StringList_T::const_iterator itClassCodeList =
00462                lClassCodeList.begin();
00463              itClassCodeList != lClassCodeList.end(); ++itClassCodeList ) {
00464           const stdair::ClassList_String_T& lClassCodeList = *itClassCodeList;
00465           iFareOption.addClassList (lClassCodeList);
00466         }
00467
00468         // Add the fare option to the travel solution into question.
00469         ioTravelSolution.addFareOption (iFareOption);
00470
00471         // DEBUG
00472         STDAIR_LOG_DEBUG ("Segment path: " << lFirstSPParsedKey.toString()
00473                           << ". A corresponding fare option for the '"
00474                           << lCurrentAirlineClassList_ptr->describeKey()
00475                           << "' class is: " << iFareOption);
00476
00477         iFareOption.emptyClassList();
```

```
00478       }
00479     }
00480
00481   }
00482
00483   // ////////////////////////////////////////////////////////////////////
00484   stdair::ParsedKey FareQuoter::
00485   getFirstSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00486
00487     // Get the segment-path of the travel solution.
00488     const stdair::SegmentPath_T& lSegmentPath =
00489       ioTravelSolution.getSegmentPath();
00490
00491     // Get the number of segments of the travel solution.
00492     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00493
00494     // Sanity check: there is at least one segment in the travel solution.
00495     assert (lNbSegments >= 1);
00496
00497     // Get the first segment of the travel solution.
00498     const std::string& lFirstSegmentDateKey = lSegmentPath.front();
00499
00500     // Get the parsed key of the first segment of the travel solution.
00501     const stdair::ParsedKey& lFirstSegmentParsedKey =
00502       stdair::BomKeyManager::extractKeys (lFirstSegmentDateKey);
00503
00504     return lFirstSegmentParsedKey;
00505
00506   }
00507
00508   // ////////////////////////////////////////////////////////////////////
00509   stdair::ParsedKey FareQuoter::
00510   getLastSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00511
00512     // Get the segment-path of the travel solution.
00513     const stdair::SegmentPath_T& lSegmentPath =
00514       ioTravelSolution.getSegmentPath();
00515
00516     // Get the number of segments of the travel solution.
00517     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00518
00519     // Sanity check: there is at least one segment in the travel solution.
00520     assert (lNbSegments >= 1);
00521
00522     // Get the last segment of the travel solution.
00523     const std::string& lLastSegmentDateKey = lSegmentPath.back();
00524
00525     // Get the parsed key of the last segment of the travel solution.
00526     const stdair::ParsedKey& lLastSegmentParsedKey =
00527       stdair::BomKeyManager::extractKeys (lLastSegmentDateKey);
00528
00529     return lLastSegmentParsedKey;
00530
00531   }
00532
00533   // ////////////////////////////////////////////////////////////////////
00534   void FareQuoter::
00535   displayMissingFareRuleMessage (const stdair::BookingRequestStruct& iBookingRequ
      est,
00536                                  stdair::TravelSolutionStruct& ioTravelSolution)
      {
00537
```

```
00538     // Get the origin of the first segment in order to get the origin of
00539     // the solution.
00540     const stdair::ParsedKey lFirstSPParsedKey =
00541       getFirstSPParsedKey(ioTravelSolution);
00542     const stdair::AirportCode_T& lOrigin = lFirstSPParsedKey._boardingPoint;
00543
00544     // Get the destination of the last segment in order to get the
00545     // destination of the solution.
00546     const stdair::ParsedKey& lLastSegmentKey =
00547       getLastSPParsedKey(ioTravelSolution);
00548     const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00549
00550     // Construct the Airport pair stream of the segment path.
00551     const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00552
00553     // Get the date of the first segment date key.
00554     const stdair::FlightDateKey& lFlightDateKey =
00555       lFirstSPParsedKey.getFlightDateKey();
00556
00557     // Get the point-of-sale of the booking request.
00558     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00559     // Get the booking request channel.
00560     const stdair::ChannelLabel_T& lChannel =
00561       iBookingRequest.getBookingChannel();
00562     // Construct the corresponding POS-channel primary key.
00563     const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00564
00565     // Get the booking request date time.
00566     const stdair::DateTime_T& lRequestDateTime =
00567       iBookingRequest.getRequestDateTime();
00568
00569     // If no fare rule has a corresponding date range, the pricing is not
00570     // possible, throw an exception.
00571     if (_atLeastOneAvailableDateRule == false) {
00572       const stdair::SegmentDateKey lSegmentDateKey =
00573         lFirstSPParsedKey.getSegmentKey();
00574       STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00575                         "flight date " << lFlightDateKey.toString()
00576                         << " and the Origin-Destination pair: "
00577                         << lSegmentDateKey.toString());
00578       throw FlightDateNotFoundException ("No available fare rule for the "
00579                                          "flight date "
00580                                          + lFlightDateKey.toString()
00581                                          + " and the Origin-Destination pair: "
00582                                          + lSegmentDateKey.toString());
00583     }
00584     // If no fare rule has a corresponding pos channel, the pricing is not possib
      le,
00585     // throw an exception.
00586     else if (_atLeastOneAvailablePosChannel == false) {
00587       STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00588                         "point of sale " << lPointOfSale
00589                         << ", to the channel " << lChannel
00590                         << ", to the flight date "
00591                         << lFlightDateKey.toString()
00592                         << " and to the Origin-Destination pair: "
00593                         << lAirportPairKey.toString());
00594       throw PosOrChannelNotFoundException ("No available fare rule for the "
00595                                            "point of sale " + lPointOfSale
00596                                            + ", the channel " + lChannel
00597                                            + ", the flight date "
00598                                            + lFlightDateKey.toString()
```

```
00599                                           + " and the Origin-Destination pair: "
00600                                           + lAirportPairKey.toString());
00601     }
00602     // If no fare rule has a corresponding time range, the pricing is not possibl
      e,
00603     // throw an exception.
00604     else if (_atLeastOneAvailableTimeRule == false) {
00605       STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00606                         << lFirstSPParsedKey.toString() << "' (parsed key) and to
       '"
00607                         << lFarePosChannelKey.toString() << "' (POS and channel)"
      );
00608       throw FlightTimeNotFoundException ("No available fare rule corresponding "
00609                                          "to '" + lFirstSPParsedKey.toString()
00610                                          + "' (parsed key) and to '"
00611                                          + lFarePosChannelKey.toString()
00612                                          + "' (POS and channel)");
00613     }
00614     // If no fare rule matches the advance purchase, trip type and stay
00615     // duration criterion, the pricing is not possible, throw an exception.
00616     else if (_atLeastOneAvailableFeaturesRule == false) {
00617       // Get the stay duration of the booking request.
00618       const stdair::DayDuration_T& lStayDuration=
00619         iBookingRequest.getStayDuration();
00620       std::ostringstream lStayDurationStream;
00621       lStayDurationStream << lStayDuration;
00622       const std::string lStayDurationString (lStayDurationStream.str());
00623
00624       // Get the booking request trip type.
00625       const stdair::TripType_T& lTripType =
00626         iBookingRequest.getTripType();
00627
00628       STDAIR_LOG_ERROR ("No available fare rule corresponding to a "
00629                         "trip type " << lTripType
00630                         << ", to a stay duration of " <<  lStayDurationString
00631                         << ", to a request date time of " << lRequestDateTime
00632                         << ", to '" << lFirstSPParsedKey.toString()
00633                         << "' (parsed key) and to '"
00634                         << lFarePosChannelKey << "' (POS and channel)");
00635       throw FeaturesNotFoundException ("No available fare rule corresponding to a
       "
00636                                        "trip type " + lTripType
00637                                        + ", to a stay duration of "
00638                                        + lStayDurationString
00639                                        + ", to a request date time of "
00640                                        + boost::posix_time::to_simple_string(lReq
      uestDateTime)
00641                                        + ", to '" + lFirstSPParsedKey.toString()
00642                                        + "' (parsed key) and to '"
00643                                        + lFarePosChannelKey.toString()
00644                                        + "' (POS and channel)");
00645     }
00646     assert (_atLeastOneAvailableAirlineClassRule == false);
00647     // If no fare rule matches the airline class path, the pricing is not
00648     // possible, throw an exception.
00649     STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00650                       << lFirstSPParsedKey .toString() << "' (parsed key), to '"
00651                       << iBookingRequest.describe()
00652                       << "' (booking request) and to '"
00653                       << lFarePosChannelKey.toString() << "' (POS and channel)");
```

```
00654     throw AirlineNotFoundException ("No available fare rule corresponding to '"
00655                                     + lFirstSPParsedKey .toString()
00656                                     + "' (parsed key), to '"
00657                                     + iBookingRequest.describe()
00658                                     + "' (booking request) and to '"
00659                                     + lFarePosChannelKey.toString()
00660                                     + "' (POS and channel)");
00661   }
00662 }
00663
```

25.37 simfqt/command/FareQuoter.hpp File Reference

```
#include <stdair/stdair_basic_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
```

Classes

- class SIMFQT::FareQuoter

  Command wrapping the pricing request process.

Namespaces

- namespace stdair

  Forward declarations.
- namespace SIMFQT

25.38 FareQuoter.hpp

```
00001 #ifndef __SIMFQT_CMD_FAREQUOTER_HPP
00002 #define __SIMFQT_CMD_FAREQUOTER_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010
00012 namespace stdair {
00013   class BomRoot;
00014   struct BookingRequestStruct;
00015   struct TravelSolutionStruct;
00016   struct ParsedKey;
00017   class AirportPair;
00018   class PosChannel;
00019   class DatePeriod;
00020   class TimePeriod;
00021   class FareFeatures;
00022 }
00023
00024 namespace SIMFQT {
```

```
00025
00029   class FareQuoter {
00032     friend class SIMFQT_Service;
00033
00034   private:
00035     // ////////////////////// Business support methods //////////////
00045     static void priceQuote (const stdair::BookingRequestStruct&,
00046                             stdair::TravelSolutionList_T&,
00047                             const stdair::BomRoot&);
00048
00060     static void priceQuote (const stdair::BookingRequestStruct&,
00061                             stdair::TravelSolutionStruct&,
00062                             const stdair::BomRoot&);
00063
00074     static void priceQuote (const stdair::BookingRequestStruct&,
00075                             stdair::TravelSolutionStruct&,
00076                             const stdair::AirportPair&);
00077
00092     static void priceQuote (const stdair::BookingRequestStruct&,
00093                             stdair::TravelSolutionStruct&,
00094                             const stdair::DatePeriod&,
00095                             const stdair::AirportPair&);
00096
00108     static void priceQuote (const stdair::BookingRequestStruct&,
00109                             stdair::TravelSolutionStruct&,
00110                             const stdair::PosChannel&);
00111
00126     static void priceQuote (const stdair::BookingRequestStruct&,
00127                             stdair::TravelSolutionStruct&,
00128                             const stdair::TimePeriod&,
00129                             const stdair::PosChannel&);
00130
00148     static void priceQuote (const stdair::BookingRequestStruct&,
00149                             stdair::TravelSolutionStruct&,
00150                             const stdair::FareFeatures&,
00151                             const stdair::PosChannel&,
00152                             stdair::FareOptionStruct&);
00153
00157     static void reset ();
00158
00168     static void displayMissingFareRuleMessage (const stdair::BookingRequestStruct
      &,
00169                                                stdair::TravelSolutionStruct&);
00170
00178     static stdair::ParsedKey getFirstSPParsedKey (stdair::TravelSolutionStruct&);

00179
00187     static stdair::ParsedKey getLastSPParsedKey (stdair::TravelSolutionStruct&);
00188
00189
00190
00191   private:
00192     // ////////////////////// Construction and destruction ////////////////
00196     FareQuoter();
00197
00201     FareQuoter(const FareQuoter&);
00202
00206     ~FareQuoter();
00207
00208   private:
00209
00212     static bool _atLeastOneAvailableDateRule;
```

```
00213
00216     static bool _atLeastOneAvailablePosChannel;
00217
00221     static bool _atLeastOneAvailableTimeRule;
00222
00226     static bool _atLeastOneAvailableFeaturesRule;
00227
00231     static bool _atLeastOneAvailableAirlineClassRule;
00232
00233   };
00234
00235 }
00236 #endif // __SIMFQT_CMD_FAREQUOTER_HPP
00237
```

25.39 simfqt/command/FareRuleGenerator.cpp File Reference

```
#include <cassert>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/factory/FacBomManager.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/AirportPair.hpp>
#include <stdair/bom/PosChannel.hpp>
#include <stdair/bom/DatePeriod.hpp>
#include <stdair/bom/TimePeriod.hpp>
#include <stdair/bom/FareFeatures.hpp>
#include <stdair/bom/AirlineClassList.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
#include <simfqt/command/FareRuleGenerator.hpp>
```

Namespaces

- namespace SIMFQT

25.40 FareRuleGenerator.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/bom/BomManager.hpp>
00008 #include <stdair/bom/BomRoot.hpp>
00009 #include <stdair/factory/FacBomManager.hpp>
```

```
00010 #include <stdair/service/Logger.hpp>
00011 #include <stdair/bom/AirportPair.hpp>
00012 #include <stdair/bom/PosChannel.hpp>
00013 #include <stdair/bom/DatePeriod.hpp>
00014 #include <stdair/bom/TimePeriod.hpp>
00015 #include <stdair/bom/FareFeatures.hpp>
00016 #include <stdair/bom/AirlineClassList.hpp>
00017 // SimFQT
00018 #include <simfqt/bom/FareRuleStruct.hpp>
00019 #include <simfqt/command/FareRuleGenerator.hpp>
00020
00021 namespace SIMFQT {
00022
00023   // ////////////////////////////////////////////////////////////////////
00024   void FareRuleGenerator::
00025   createAirportPair (stdair::BomRoot& ioBomRoot,
00026                      const FareRuleStruct& iFareRuleStruct) {
00027
00028     // Create the airport-pair primary key.
00029     const stdair::AirportCode_T& lBoardPoint = iFareRuleStruct.getOrigin ();
00030     const stdair::AirportCode_T& lOffPoint =
00031       iFareRuleStruct.getDestination ();
00032     const stdair::AirportPairKey lAirportPairKey (lBoardPoint, lOffPoint);
00033
00034     // Check that the airport-pair object is not already existing. If an
00035     // airport-pair object with the same key has not already been created,
00036     // create it and link it to the ioBomRoot object.
00037     stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00038       getObjectPtr<stdair::AirportPair> (ioBomRoot, lAirportPairKey.toString());
00039     if (lAirportPair_ptr == NULL) {
00040       lAirportPair_ptr =
00041         &stdair::FacBom<stdair::AirportPair>::instance().
00042         create (lAirportPairKey);
00043       stdair::FacBomManager::addToListAndMap (ioBomRoot, *lAirportPair_ptr);
00044       stdair::FacBomManager::linkWithParent (ioBomRoot, *lAirportPair_ptr);
00045     }
00046     // Sanity check.
00047     assert (lAirportPair_ptr != NULL);
00048
00049     stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00050     // Generate the date-period object corresponding to the given
00051     // fareRule.
00052     createDateRange (lAirportPair, iFareRuleStruct);
00053
00054   }
00055
00056   // ////////////////////////////////////////////////////////////////////
00057   void FareRuleGenerator::
00058   createDateRange (stdair::AirportPair& iAirportPair,
00059                    const FareRuleStruct& iFareRuleStruct) {
00060
00061     // Create the fare date-period primary key.
00062     const stdair::Date_T& lDateRangeStart =
00063       iFareRuleStruct.getDateRangeStart ();
00064     const stdair::Date_T& lDateRangeEnd =
00065       iFareRuleStruct.getDateRangeEnd ();
00066     const stdair::DatePeriod_T lDatePeriod (lDateRangeStart, lDateRangeEnd);
00067     const stdair::DatePeriodKey lFareDatePeriodKey (lDatePeriod);
00068
00069     // Check that the date-period object is not already existing.
00070     // If a date-period object with the same key has not already been
00071     // created, create it and link it to the airport-pair object.
```

```
00072     stdair::DatePeriod* lFareDatePeriod_ptr = stdair::BomManager::
00073       getObjectPtr<stdair::DatePeriod> (iAirportPair,
00074                                         lFareDatePeriodKey.toString());
00075     if (lFareDatePeriod_ptr == NULL) {
00076       lFareDatePeriod_ptr = &stdair::FacBom<stdair::DatePeriod>::instance().
00077         create (lFareDatePeriodKey);
00078       stdair::FacBomManager::addToListAndMap (iAirportPair,
00079                                               *lFareDatePeriod_ptr);
00080       stdair::FacBomManager::linkWithParent (iAirportPair,
00081                                              *lFareDatePeriod_ptr);
00082     }
00083     // Sanity check.
00084     assert (lFareDatePeriod_ptr != NULL);
00085
00086     stdair::DatePeriod& lDateRange = *lFareDatePeriod_ptr;
00087     // Generate the point_of_sale-channel object corresponding to
00088     // the given fareRule.
00089     createPOSChannel (lDateRange, iFareRuleStruct);
00090
00091   }
00092
00093   // ////////////////////////////////////////////////////////////////////
00094   void FareRuleGenerator::
00095   createPOSChannel (stdair::DatePeriod& iDatePeriod,
00096                     const FareRuleStruct& iFareRuleStruct) {
00097
00098     // Create the point-of-sale-channel primary key.
00099     const stdair::CityCode_T& lPosition = iFareRuleStruct.getPOS ();
00100     const stdair::ChannelLabel_T& lChannel =
00101         iFareRuleStruct.getChannel ();
00102     const stdair::PosChannelKey lFarePosChannelKey (lPosition, lChannel);
00103
00104     // Check that the point_of_sale-channel object is not already existing.
00105     // If a point_of_sale-channel object with the same key has not already
00106     // been created, create it and link it to the date-period object.
00107     stdair::PosChannel* lFarePosChannel_ptr = stdair::BomManager::
00108       getObjectPtr<stdair::PosChannel> (iDatePeriod,
00109                                         lFarePosChannelKey.toString());
00110     if (lFarePosChannel_ptr == NULL) {
00111       lFarePosChannel_ptr = &stdair::FacBom<stdair::PosChannel>::instance().
00112         create (lFarePosChannelKey);
00113       stdair::FacBomManager::addToListAndMap (iDatePeriod,
00114                                               *lFarePosChannel_ptr);
00115       stdair::FacBomManager::linkWithParent (iDatePeriod,
00116                                              *lFarePosChannel_ptr);
00117     }
00118     // Sanity check.
00119     assert (lFarePosChannel_ptr != NULL);
00120
00121     stdair::PosChannel& lPosChannel = *lFarePosChannel_ptr;
00122     // Generate the time-period object corresponding to the given
00123     // fareRule.
00124     createTimeRange (lPosChannel, iFareRuleStruct);
00125
00126   }
00127
00128
00129   // ////////////////////////////////////////////////////////////////////
00130   void FareRuleGenerator::
00131   createTimeRange (stdair::PosChannel& iPosChannel,
00132                    const FareRuleStruct& iFareRuleStruct) {
00133
```

```
00134     // Create the fare time-period primary key.
00135     const stdair::Time_T& lTimeRangeStart =
00136       iFareRuleStruct.getTimeRangeStart ();
00137     const stdair::Time_T& lTimeRangeEnd =
00138       iFareRuleStruct.getTimeRangeEnd ();
00139     const stdair::TimePeriodKey lFareTimePeriodKey (lTimeRangeStart,
00140                                                     lTimeRangeEnd);
00141
00142     // Check that the time-period object is not already existing.
00143     // If a time-period object with the same key has not already been
00144     // created, create it and link it to the point_of_sale-channel object.

00145     stdair::TimePeriod* lFareTimePeriod_ptr = stdair::BomManager::
00146       getObjectPtr<stdair::TimePeriod> (iPosChannel,
00147                                         lFareTimePeriodKey.toString());
00148     if (lFareTimePeriod_ptr == NULL) {
00149       lFareTimePeriod_ptr = &stdair::FacBom<stdair::TimePeriod>::instance().
00150         create (lFareTimePeriodKey);
00151       stdair::FacBomManager::addToListAndMap (iPosChannel,
00152                                               *lFareTimePeriod_ptr);
00153       stdair::FacBomManager::linkWithParent (iPosChannel,
00154                                              *lFareTimePeriod_ptr);
00155     }
00156     // Sanity check.
00157     assert (lFareTimePeriod_ptr != NULL);
00158
00159     stdair::TimePeriod& lTimeRange = *lFareTimePeriod_ptr;
00160     // Generate the fare-features object corresponding to the given
00161     // fareRule.
00162     createFareFeatures (lTimeRange, iFareRuleStruct);
00163
00164   }
00165
00166   // ////////////////////////////////////////////////////////////////////
00167   void FareRuleGenerator::
00168   createFareFeatures (stdair::TimePeriod& iTimePeriod,
00169                       const FareRuleStruct& iFareRuleStruct) {
00170
00171     // Create the fare-features primary key.
00172     const stdair::TripType_T& lTripType =
00173       iFareRuleStruct.getTripType ();
00174     const stdair::DayDuration_T& lAdvancePurchase =
00175       iFareRuleStruct.getAdvancePurchase ();
00176     const stdair::SaturdayStay_T& lSaturdayStay =
00177       iFareRuleStruct.getSaturdayStay ();
00178     const stdair::ChangeFees_T& lChangeFees =
00179       iFareRuleStruct.getChangeFees ();
00180     const stdair::NonRefundable_T& lNonRefundable =
00181       iFareRuleStruct.getNonRefundable ();
00182     const stdair::DayDuration_T& lMinimumStay =
00183       iFareRuleStruct.getMinimumStay ();
00184     const stdair::FareFeaturesKey
00185       lFareFeaturesKey (lTripType, lAdvancePurchase, lSaturdayStay,
00186                         lChangeFees, lNonRefundable, lMinimumStay);
00187
00188     // Check that the fare features object is not already existing.
00189     // If a fare features object with the same key has not already been
00190     // created, create it and link it to the time-period object.
00191     stdair::FareFeatures* lFareFeatures_ptr = stdair::BomManager::
00192       getObjectPtr<stdair::FareFeatures> (iTimePeriod,
00193                                           lFareFeaturesKey.toString());
00194     if (lFareFeatures_ptr == NULL) {
```

```
00195       lFareFeatures_ptr = &stdair::FacBom<stdair::FareFeatures>::instance().
00196         create (lFareFeaturesKey);
00197       assert(lFareFeatures_ptr != NULL);
00198       stdair::FacBomManager::addToListAndMap (iTimePeriod,
00199                                               *lFareFeatures_ptr);
00200       stdair::FacBomManager::linkWithParent (iTimePeriod,
00201                                              *lFareFeatures_ptr);
00202     }
00203     // Sanity check.
00204     assert(lFareFeatures_ptr != NULL);
00205
00206     stdair::FareFeatures& lFareFeatures = *lFareFeatures_ptr;
00207     // Generate the airline-class list object corresponding to the
00208     // given fareRule
00209     createAirlineClassList (lFareFeatures, iFareRuleStruct);
00210
00211   }
00212
00213   // ////////////////////////////////////////////////////////////////////
00214   void FareRuleGenerator::
00215   createAirlineClassList (stdair::FareFeatures& iFareFeatures,
00216                           const FareRuleStruct& iFareRuleStruct) {
00217
00218     // Create the AirlineClassList primary key.
00219     const unsigned int lAirlineListSize =
00220       iFareRuleStruct.getAirlineListSize();
00221     const unsigned int lClassCodeListSize =
00222       iFareRuleStruct.getClassCodeListSize();
00223     assert (lAirlineListSize == lClassCodeListSize);
00224     const stdair::AirlineClassListKey
00225       lAirlineClassListKey (iFareRuleStruct.getAirlineList(),
00226                             iFareRuleStruct.getClassCodeList());
00227     const stdair::Fare_T& lFare = iFareRuleStruct.getFare ();
00228
00229     // Create the airline class list object and link it to the fare features
00230     // object.
00231     stdair::AirlineClassList* lAirlineClassList_ptr =
00232       &stdair::FacBom<stdair::AirlineClassList>::instance().
00233       create (lAirlineClassListKey);
00234     lAirlineClassList_ptr->setFare(lFare);
00235     stdair::FacBomManager::addToListAndMap (iFareFeatures,
00236                                             *lAirlineClassList_ptr);
00237     stdair::FacBomManager::linkWithParent(iFareFeatures,
00238                                           *lAirlineClassList_ptr);
00239   }
00240
00241 }
00242
```

25.41 simfqt/command/FareRuleGenerator.hpp File Reference

```
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class SIMFQT::FareRuleGenerator

Namespaces

- namespace stdair

  Forward declarations.
- namespace SIMFQT
- namespace SIMFQT::FareParserHelper

25.42 FareRuleGenerator.hpp

```
00001 #ifndef __SIMFQT_CMD_FARERULEGENERATOR_HPP
00002 #define __SIMFQT_CMD_FARERULEGENERATOR_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // StdAir
00008 #include <stdair/command/CmdAbstract.hpp>
00009 // Simfqt
00010 #include <simfqt/SIMFQT_Types.hpp>
00011
00012 // Forward declarations
00013 namespace stdair {
00014   class BomRoot;
00015   class FareRule;
00016   class AirportPair;
00017   class DatePeriod;
00018   class PosChannel;
00019   class TimePeriod;
00020   class FareFeatures;
00021   class AirlineClassList;
00022 }
00023
00024 namespace SIMFQT {
00025
00026   // Forward declarations
00027   struct FareRuleStruct;
00028   namespace FareParserHelper {
00029     struct doEndFare;
00030   }
00031
00033   class FareRuleGenerator : public stdair::CmdAbstract {
00034
00035     // Only the following class may use methods of FareGenerator.
00036     // Indeed, as those methods build the BOM, it is not good to expose
00037     // them public.
00038     friend class FareFileParser;
00039     friend struct FareParserHelper::doEndFare;
00040     friend class FareParser;
00041
00042   private:
00043
00052     static void createAirportPair (stdair::BomRoot&,
00053                                    const FareRuleStruct&);
00054
00063     static void createDateRange (stdair::AirportPair&,
00064                                  const FareRuleStruct&);
00065
00074     static void createPOSChannel (stdair::DatePeriod&,
00075                                   const FareRuleStruct&);
```

```
00076
00085     static void createTimeRange (stdair::PosChannel&,
00086                                  const FareRuleStruct&);
00087
00096     static void createFareFeatures (stdair::TimePeriod&,
00097                                     const FareRuleStruct&);
00098
00107     static void createAirlineClassList (stdair::FareFeatures&,
00108                                         const FareRuleStruct&);
00109
00110
00111
00112   };
00113
00114 }
00115 #endif // __SIMFQT_CMD_FARERULEGENERATOR_HPP
```

25.43 simfqt/config/simfqt-paths.hpp File Reference

Defines

- #define PACKAGE "simfqt"
- #define PACKAGE_NAME "SIMFQT"
- #define PACKAGE_VERSION "0.1.2"
- #define PREFIXDIR "/usr"
- #define EXEC_PREFIX "/usr"
- #define BINDIR "/usr/bin"
- #define LIBDIR "/usr/lib"
- #define LIBEXECDIR "/usr/libexec"
- #define SBINDIR "/usr/sbin"
- #define SYSCONFDIR "/usr/etc"
- #define INCLUDEDIR "/usr/include"
- #define DATAROOTDIR "/usr/share"
- #define DATADIR "/usr/share"
- #define DOCDIR "/usr/share/doc/simfqt-0.1.2"
- #define MANDIR "/usr/share/man"
- #define INFODIR "/usr/share/info"
- #define HTMLDIR "/usr/share/doc/simfqt-0.1.2/html"
- #define PDFDIR "/usr/share/doc/simfqt-0.1.2/html"
- #define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"

25.43.1 Define Documentation

25.43.1.1 #define PACKAGE "simfqt"

Definition at line 4 of file simfqt-paths.hpp.

25.43.1.2 #define PACKAGE_NAME "SIMFQT"

Definition at line 5 of file simfqt-paths.hpp.

Referenced by readConfiguration().

25.43.1.3 #define PACKAGE_VERSION "0.1.2"

Definition at line 6 of file simfqt-paths.hpp.

Referenced by readConfiguration().

25.43.1.4 #define PREFIXDIR "/usr"

Definition at line 7 of file simfqt-paths.hpp.

Referenced by readConfiguration().

25.43.1.5 #define EXEC_PREFIX "/usr"

Definition at line 8 of file simfqt-paths.hpp.

25.43.1.6 #define BINDIR "/usr/bin"

Definition at line 9 of file simfqt-paths.hpp.

25.43.1.7 #define LIBDIR "/usr/lib"

Definition at line 10 of file simfqt-paths.hpp.

25.43.1.8 #define LIBEXECDIR "/usr/libexec"

Definition at line 11 of file simfqt-paths.hpp.

25.43.1.9 #define SBINDIR "/usr/sbin"

Definition at line 12 of file simfqt-paths.hpp.

25.43.1.10 #define SYSCONFDIR "/usr/etc"

Definition at line 13 of file simfqt-paths.hpp.

25.43.1.11 #define INCLUDEDIR "/usr/include"

Definition at line 14 of file simfqt-paths.hpp.

25.43.1.12 #define DATAROOTDIR "/usr/share"

Definition at line 15 of file simfqt-paths.hpp.

25.43.1.13 #define DATADIR "/usr/share"

Definition at line 16 of file simfqt-paths.hpp.

25.43.1.14 #define DOCDIR "/usr/share/doc/simfqt-0.1.2"

Definition at line 17 of file simfqt-paths.hpp.

25.43.1.15 #define MANDIR "/usr/share/man"

Definition at line 18 of file simfqt-paths.hpp.

25.43.1.16 #define INFODIR "/usr/share/info"

Definition at line 19 of file simfqt-paths.hpp.

25.43.1.17 #define HTMLDIR "/usr/share/doc/simfqt-0.1.2/html"

Definition at line 20 of file simfqt-paths.hpp.

25.43.1.18 #define PDFDIR "/usr/share/doc/simfqt-0.1.2/html"

Definition at line 21 of file simfqt-paths.hpp.

25.43.1.19 #define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"

Definition at line 22 of file simfqt-paths.hpp.

25.44 simfqt-paths.hpp

```
00001 #ifndef __SIMFQT_PATHS_HPP__
00002 #define __SIMFQT_PATHS_HPP__
00003
00004 #define PACKAGE "simfqt"
00005 #define PACKAGE_NAME "SIMFQT"
00006 #define PACKAGE_VERSION "0.1.2"
00007 #define PREFIXDIR "/usr"
00008 #define EXEC_PREFIX "/usr"
00009 #define BINDIR "/usr/bin"
00010 #define LIBDIR "/usr/lib"
00011 #define LIBEXECDIR "/usr/libexec"
00012 #define SBINDIR "/usr/sbin"
00013 #define SYSCONFDIR "/usr/etc"
00014 #define INCLUDEDIR "/usr/include"
00015 #define DATAROOTDIR "/usr/share"
00016 #define DATADIR "/usr/share"
00017 #define DOCDIR "/usr/share/doc/simfqt-0.1.2"
00018 #define MANDIR "/usr/share/man"
00019 #define INFODIR "/usr/share/info"
00020 #define HTMLDIR "/usr/share/doc/simfqt-0.1.2/html"
00021 #define PDFDIR "/usr/share/doc/simfqt-0.1.2/html"
00022 #define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"
00023
00024 #endif // __SIMFQT_PATHS_HPP__
```

25.45 simfqt/factory/FacSimfqtServiceContext.cpp File Reference

```
#include <cassert>
#include <stdair/service/FacSupervisor.hpp>
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
```

`#include <simfqt/service/SIMFQT_ServiceContext.hpp>`

Namespaces

- namespace SIMFQT

25.46 FacSimfqtServiceContext.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/service/FacSupervisor.hpp>
00008 // SimFQT
00009 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00010 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00011
00012 namespace SIMFQT {
00013
00014   FacSimfqtServiceContext* FacSimfqtServiceContext::_instance = NULL;
00015
00016   // ////////////////////////////////////////////////////////////////////
00017   FacSimfqtServiceContext::~FacSimfqtServiceContext() {
00018     _instance = NULL;
00019   }
00020
00021   // ////////////////////////////////////////////////////////////////////
00022   FacSimfqtServiceContext& FacSimfqtServiceContext::instance() {
00023
00024     if (_instance == NULL) {
00025       _instance = new FacSimfqtServiceContext();
00026       assert (_instance != NULL);
00027
00028       stdair::FacSupervisor::instance().registerServiceFactory (_instance);
00029     }
00030     return *_instance;
00031   }
00032
00033   // ////////////////////////////////////////////////////////////////////
00034   SIMFQT_ServiceContext& FacSimfqtServiceContext::create() {
00035     SIMFQT_ServiceContext* aServiceContext_ptr = NULL;
00036
00037     aServiceContext_ptr = new SIMFQT_ServiceContext();
00038     assert (aServiceContext_ptr != NULL);
00039
00040     // The new object is added to the Bom pool
00041     _pool.push_back (aServiceContext_ptr);
00042
00043     return *aServiceContext_ptr;
00044   }
00045
00046 }
```

25.47 simfqt/factory/FacSimfqtServiceContext.hpp File Reference

```
#include <string>
#include <stdair/stdair_basic_types.hpp>
#include <stdair/service/FacServiceAbstract.hpp>
```

Classes

- class SIMFQT::FacSimfqtServiceContext

  Factory for the service context.

Namespaces

- namespace SIMFQT

25.48 FacSimfqtServiceContext.hpp

```
00001 #ifndef __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/service/FacServiceAbstract.hpp>
00012
00013 namespace SIMFQT {
00014
00016   class SIMFQT_ServiceContext;
00017
00018
00022   class FacSimfqtServiceContext : public stdair::FacServiceAbstract {
00023   public:
00024
00031     static FacSimfqtServiceContext& instance();
00032
00039     ~FacSimfqtServiceContext();
00040
00048     SIMFQT_ServiceContext& create();
00049
00050
00051   protected:
00057     FacSimfqtServiceContext() {}
00058
00059
00060   private:
00064     static FacSimfqtServiceContext* _instance;
00065   };
00066
00067 }
00068 #endif // __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
```

25.49 simfqt/service/SIMFQT_Service.cpp File Reference

```
#include <cassert>
#include <boost/make_shared.hpp>
#include <stdair/basic/BasChronometer.hpp>
#include <stdair/bom/BomDisplay.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
#include <simfqt/command/FareParser.hpp>
#include <simfqt/command/FareQuoter.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
#include <simfqt/SIMFQT_Service.hpp>
```

Namespaces

- namespace SIMFQT

25.50 SIMFQT_Service.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // Boost
00007 #include <boost/make_shared.hpp>
00008 // StdAir
00009 #include <stdair/basic/BasChronometer.hpp>
00010 #include <stdair/bom/BomDisplay.hpp>
00011 #include <stdair/bom/TravelSolutionStruct.hpp>
00012 #include <stdair/bom/BookingRequestStruct.hpp>
00013 #include <stdair/service/Logger.hpp>
00014 #include <stdair/STDAIR_Service.hpp>
00015 // Simfqt
00016 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00017 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00018 #include <simfqt/command/FareParser.hpp>
00019 #include <simfqt/command/FareQuoter.hpp>
00020 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00021 #include <simfqt/SIMFQT_Service.hpp>
00022
00023 namespace SIMFQT {
00024
```

```
00025   // //////////////////////////////////////////////////////////////////
00026   SIMFQT_Service::SIMFQT_Service() : _simfqtServiceContext (NULL) {
00027     assert (false);
00028   }
00029
00030   // //////////////////////////////////////////////////////////////////
00031   SIMFQT_Service::SIMFQT_Service (const SIMFQT_Service& iService) {
00032     assert (false);
00033   }
00034
00035   // //////////////////////////////////////////////////////////////////
00036   SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams)
00037     : _simfqtServiceContext (NULL) {
00038
00039     // Initialise the STDAIR service handler
00040     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00041       initStdAirService (iLogParams);
00042
00043     // Initialise the service context
00044     initServiceContext();
00045
00046     // Add the StdAir service context to the SIMFQT service context
00047     // \note SIMFQT owns the STDAIR service resources here.
00048     const bool ownStdairService = true;
00049     addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00050
00051     // Initialise the (remaining of the) context
00052     initSimfqtService();
00053   }
00054
00055   // //////////////////////////////////////////////////////////////////
00056   SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams,
00057                                   const stdair::BasDBParams& iDBParams)
00058     : _simfqtServiceContext (NULL) {
00059
00060     // Initialise the STDAIR service handler
00061     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00062       initStdAirService (iLogParams, iDBParams);
00063
00064     // Initialise the service context
00065     initServiceContext();
00066
00067     // Add the StdAir service context to the SIMFQT service context
00068     // \note SIMFQT owns the STDAIR service resources here.
00069     const bool ownStdairService = true;
00070     addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00071
00072     // Initialise the (remaining of the) context
00073     initSimfqtService();
00074   }
00075
00076   // //////////////////////////////////////////////////////////////////
00077   SIMFQT_Service::
00078   SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr)
00079     : _simfqtServiceContext (NULL) {
00080
00081     // Initialise the service context
00082     initServiceContext();
00083
00084     // Store the STDAIR service object within the (SIMFQT) service context
00085     // \note Simfqt does not own the STDAIR service resources here.
00086     const bool doesNotOwnStdairService = false;
```

```
00087     addStdAirService (ioSTDAIR_Service_ptr, doesNotOwnStdairService);
00088
00089     // Initialise the context
00090     initSimfqtService();
00091   }
00092
00093   // ////////////////////////////////////////////////////////////////////
00094   SIMFQT_Service::~SIMFQT_Service() {
00095     // Delete/Clean all the objects from memory
00096     finalise();
00097   }
00098
00099   // ////////////////////////////////////////////////////////////////////
00100   void SIMFQT_Service::finalise() {
00101     assert (_simfqtServiceContext != NULL);
00102     // Reset the (Boost.)Smart pointer pointing on the STDAIR_Service object.
00103     _simfqtServiceContext->reset();
00104   }
00105
00106   // ////////////////////////////////////////////////////////////////////
00107   void SIMFQT_Service::initServiceContext() {
00108     // Initialise the service context
00109     SIMFQT_ServiceContext& lSIMFQT_ServiceContext =
00110       FacSimfqtServiceContext::instance().create();
00111     _simfqtServiceContext = &lSIMFQT_ServiceContext;
00112   }
00113
00114   // ////////////////////////////////////////////////////////////////////
00115   void SIMFQT_Service::
00116   addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr,
00117                     const bool iOwnStdairService) {
00118
00119     // Retrieve the SimFQT service context
00120     assert (_simfqtServiceContext != NULL);
00121     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00122
00123     // Store the STDAIR service object within the (SimFQT) service context
00124     lSIMFQT_ServiceContext.setSTDAIR_Service (ioSTDAIR_Service_ptr,
00125                                               iOwnStdairService);
00126   }
00127
00128   // ////////////////////////////////////////////////////////////////////
00129   stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00130   initStdAirService (const stdair::BasLogParams& iLogParams,
00131                      const stdair::BasDBParams& iDBParams) {
00132
00139     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00140       boost::make_shared<stdair::STDAIR_Service> (iLogParams, iDBParams);
00141     assert (lSTDAIR_Service_ptr != NULL);
00142
00143     return lSTDAIR_Service_ptr;
00144   }
00145
00146   // ////////////////////////////////////////////////////////////////////
00147   stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00148   initStdAirService (const stdair::BasLogParams& iLogParams) {
00149
00156     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00157       boost::make_shared<stdair::STDAIR_Service> (iLogParams);
00158     assert (lSTDAIR_Service_ptr != NULL);
00159
00160     return lSTDAIR_Service_ptr;
```

```
00161   }
00162
00163   // ////////////////////////////////////////////////////////////////////
00164   void SIMFQT_Service::initSimfqtService() {
00165     // Do nothing at this stage. A sample BOM tree may be built by
00166     // calling the buildSampleBom() method
00167   }
00168
00169   // ////////////////////////////////////////////////////////////////////
00170   void SIMFQT_Service::
00171   parseAndLoad (const FareFilePath& iFareFilename) {
00172
00173     // Retrieve the BOM root object.
00174     assert (_simfqtServiceContext != NULL);
00175     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00176     stdair::STDAIR_Service& lSTDAIR_Service =
00177       lSIMFQT_ServiceContext.getSTDAIR_Service();
00178     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00179
00180     // Initialise the airline inventories
00181     FareParser::fareRuleGeneration (iFareFilename, lBomRoot);
00182   }
00183
00184   // ////////////////////////////////////////////////////////////////////
00185   void SIMFQT_Service::buildSampleBom() {
00186
00187     // Retrieve the SimFQT service context
00188     if (_simfqtServiceContext == NULL) {
00189       throw stdair::NonInitialisedServiceException ("The SimFQT service "
00190                                                     "has not been initialised");
00191     }
00192     assert (_simfqtServiceContext != NULL);
00193
00194     // Retrieve the SimFQT service context and whether it owns the Stdair
00195     // service
00196     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00197     const bool doesOwnStdairService =
00198       lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00199
00200     // Retrieve the StdAir service object from the (SimFQT) service context
00201     stdair::STDAIR_Service& lSTDAIR_Service =
00202       lSIMFQT_ServiceContext.getSTDAIR_Service();
00203
00208     if (doesOwnStdairService == true) {
00209       //
00210       lSTDAIR_Service.buildSampleBom();
00211     }
00212
00228   }
00229
00230   // ////////////////////////////////////////////////////////////////////
00231   stdair::BookingRequestStruct SIMFQT_Service::buildBookingRequest(const bool isF
      orCRS) {
00232
00233     // Retrieve the SIMFQT service context
00234     if (_simfqtServiceContext == NULL) {
00235       throw stdair::NonInitialisedServiceException ("The Simfqt service has not "

00236                                                     "been initialised");
00237     }
00238     assert (_simfqtServiceContext != NULL);
00239
```

```
00240     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00241
00242     // Retrieve the STDAIR service object from the (Simfqt) service context
00243     stdair::STDAIR_Service& lSTDAIR_Service =
00244       lSIMFQT_ServiceContext.getSTDAIR_Service();
00245
00246     // Delegate the BOM building to the dedicated service
00247     stdair::BookingRequestStruct oBookingRequest =
00248       lSTDAIR_Service.buildSampleBookingRequest (isForCRS);
00249
00250     return oBookingRequest;
00251   }
00252
00253   // ////////////////////////////////////////////////////////////////////
00254   void SIMFQT_Service::
00255   buildSampleTravelSolutions(stdair::TravelSolutionList_T& ioTravelSolutionList){

00256
00257     // Retrieve the SIMFQT service context
00258     if (_simfqtServiceContext == NULL) {
00259       throw stdair::NonInitialisedServiceException ("The Simfqt service has not "

00260                                                     "been initialised");
00261     }
00262     assert (_simfqtServiceContext != NULL);
00263
00264     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00265
00266     // Retrieve the STDAIR service object from the (Simfqt) service context
00267     stdair::STDAIR_Service& lSTDAIR_Service =
00268       lSIMFQT_ServiceContext.getSTDAIR_Service();
00269
00270     // Delegate the BOM building to the dedicated service
00271     lSTDAIR_Service.buildSampleTravelSolutionForPricing (ioTravelSolutionList);
00272   }
00273
00274
00275   // ////////////////////////////////////////////////////////////////////
00276   std::string SIMFQT_Service::csvDisplay() const {
00277
00278     // Retrieve the SIMFQT service context
00279     if (_simfqtServiceContext == NULL) {
00280       throw stdair::NonInitialisedServiceException ("The SimFQT service "
00281                                                     "has not been initialised");
00282     }
00283     assert (_simfqtServiceContext != NULL);
00284
00285     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00286
00287     // Retrieve the STDAIR service object from the (SimFQT) service context
00288     stdair::STDAIR_Service& lSTDAIR_Service =
00289       lSIMFQT_ServiceContext.getSTDAIR_Service();
00290
00291     // Get the root of the BOM tree, on which all of the other BOM objects
00292     // are attached
00293     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00294
00295     // Delegate the BOM display to the dedicated service
00296     std::ostringstream oCSVStr;
00297     stdair::BomDisplay::csvSimFQTAirRACDisplay (oCSVStr, lBomRoot);
00298     return oCSVStr.str();
00299   }
```

```
00300
00301   // ////////////////////////////////////////////////////////////////////
00302   std::string SIMFQT_Service::
00303   csvDisplay (const stdair::TravelSolutionList_T& ioTravelSolutionList) const {
00304
00305     // Retrieve the Simfqt service context
00306     if (_simfqtServiceContext == NULL) {
00307       throw stdair::NonInitialisedServiceException ("The Simfqt service has not "
00308                                                     "been initialised");
00309     }
00310     assert (_simfqtServiceContext != NULL);
00311
00312     // Retrieve the Simfqt service context
00313     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00314
00315     // Retrieve the STDAIR service object from the (Simfqt) service context
00316     stdair::STDAIR_Service& lSTDAIR_Service =
00317       lSIMFQT_ServiceContext.getSTDAIR_Service();
00318
00319     // Delegate the BOM building to the dedicated service
00320     return lSTDAIR_Service.csvDisplay (ioTravelSolutionList);
00321   }
00322
00323   // ////////////////////////////////////////////////////////////////////
00324   std::string SIMFQT_Service::
00325   csvDisplay (const stdair::AirportCode_T& iOrigin,
00326               const stdair::AirportCode_T& iDestination,
00327               const stdair::Date_T& iDepartureDate) const {
00328
00329     // Retrieve the SIMFQT service context
00330     if (_simfqtServiceContext == NULL) {
00331       throw stdair::NonInitialisedServiceException ("The Simfqt service "
00332                                                     "has not been initialised");
00333     }
00334     assert (_simfqtServiceContext != NULL);
00335
00336     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00337
00338     // Retrieve the STDAIR service object from the (SIMFQT) service context
00339     stdair::STDAIR_Service& lSTDAIR_Service =
00340       lSIMFQT_ServiceContext.getSTDAIR_Service();
00341
00342     // Delegate the BOM display to the dedicated service
00343     return lSTDAIR_Service.csvDisplay (iOrigin, iDestination,
00344                                        iDepartureDate);
00345   }
00346
00347   // ////////////////////////////////////////////////////////////////////
00348   std::string SIMFQT_Service::list() const {
00349
00350     // Retrieve the SIMFQT service context
00351     if (_simfqtServiceContext == NULL) {
00352       throw stdair::NonInitialisedServiceException ("The Simfqt service "
00353                                                     "has not been initialised");
00354     }
00355     assert (_simfqtServiceContext != NULL);
00356
00357     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00358
00359     // Retrieve the STDAIR service object from the (SIMFQT) service context
00360     stdair::STDAIR_Service& lSTDAIR_Service =
```

```
00361       lSIMFQT_ServiceContext.getSTDAIR_Service();
00362
00363     // Delegate the BOM display to the dedicated service
00364     return lSTDAIR_Service.listAirportPairDateRange ();
00365   }
00366
00367   // ////////////////////////////////////////////////////////////////////
00368   bool SIMFQT_Service::
00369   check (const stdair::AirportCode_T& iOrigin,
00370          const stdair::AirportCode_T& iDestination,
00371          const stdair::Date_T& iDepartureDate) const {
00372     std::ostringstream oFlightListStr;
00373
00374     if (_simfqtServiceContext == NULL) {
00375       throw stdair::NonInitialisedServiceException ("The Simfqt service "
00376                                                     "has not been initialised");
00377     }
00378     assert (_simfqtServiceContext != NULL);
00379     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00380
00381     // Retrieve the STDAIR service object from the (SIMFQT) service context
00382     stdair::STDAIR_Service& lSTDAIR_Service =
00383       lSIMFQT_ServiceContext.getSTDAIR_Service();
00384
00385     // Delegate the BOM display to the dedicated service
00386     return lSTDAIR_Service.check (iOrigin, iDestination, iDepartureDate);
00387   }
00388
00389   // ////////////////////////////////////////////////////////////////////
00390   void SIMFQT_Service::
00391   quotePrices (const stdair::BookingRequestStruct& iBookingRequest,
00392                stdair::TravelSolutionList_T& ioTravelSolutionList) {
00393
00394     // Retrieve the Simfqt service context
00395     if (_simfqtServiceContext == NULL) {
00396       throw stdair::NonInitialisedServiceException ("The SimFQT service "
00397                                                     "has not been initialised");
00398     }
00399     assert (_simfqtServiceContext != NULL);
00400
00401     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00402
00403     // Retrieve the StdAir service context
00404     stdair::STDAIR_Service& lSTDAIR_Service =
00405       lSIMFQT_ServiceContext.getSTDAIR_Service();
00406
00407     // Get the root of the BOM tree, on which all of the other BOM objects
00408     // will be attached
00409     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00410
00411     // Delegate the action to the dedicated command
00412     stdair::BasChronometer lFareQuoteRetrievalChronometer;
00413     lFareQuoteRetrievalChronometer.start();
00414     FareQuoter::priceQuote (iBookingRequest, ioTravelSolutionList, lBomRoot);
00415
00416     // DEBUG
00417     const double lFareQuoteRetrievalMeasure =
00418       lFareQuoteRetrievalChronometer.elapsed();
00419     STDAIR_LOG_DEBUG ("Fare Quote retrieving: " << lFareQuoteRetrievalMeasure
00420                       << " - " << lSIMFQT_ServiceContext.display());
00421   }
00422
```

```
00423 }
```

25.51 simfqt/service/SIMFQT_ServiceContext.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

Namespaces

- namespace SIMFQT

25.52 SIMFQT_ServiceContext.cpp

```
00001 // ////////////////////////////////////////////////////////////////////
00002 // Import section
00003 // ////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // SimFQT
00008 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00009 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00010
00011 namespace SIMFQT {
00012
00013   // ////////////////////////////////////////////////////////////////////
00014   SIMFQT_ServiceContext::SIMFQT_ServiceContext() : _ownStdairService (false) {
00015   }
00016
00017   // ////////////////////////////////////////////////////////////////////
00018   SIMFQT_ServiceContext::SIMFQT_ServiceContext (const SIMFQT_ServiceContext&) {
00019     assert (false);
00020   }
00021
00022   // ////////////////////////////////////////////////////////////////////
00023   SIMFQT_ServiceContext::~SIMFQT_ServiceContext() {
00024   }
00025
00026   // ////////////////////////////////////////////////////////////////////
00027   stdair::STDAIR_Service& SIMFQT_ServiceContext::getSTDAIR_Service() const {
00028     assert (_stdairService != NULL);
00029     return *_stdairService;
00030   }
00031
00032   // ////////////////////////////////////////////////////////////////////
00033   const std::string SIMFQT_ServiceContext::shortDisplay() const {
00034     std::ostringstream oStr;
00035     oStr << "SIMFQT_ServiceContext -- Owns StdAir service: "
00036          << _ownStdairService;
00037     return oStr.str();
00038   }
00039
```

```
00040   // ////////////////////////////////////////////////////////////////////
00041   const std::string SIMFQT_ServiceContext::display() const {
00042     std::ostringstream oStr;
00043     oStr << shortDisplay();
00044     return oStr.str();
00045   }
00046
00047   // ////////////////////////////////////////////////////////////////////
00048   const std::string SIMFQT_ServiceContext::describe() const {
00049     return shortDisplay();
00050   }
00051
00052   // ////////////////////////////////////////////////////////////////////
00053   void SIMFQT_ServiceContext::reset() {
00054     if (_ownStdairService == true) {
00055       _stdairService.reset();
00056     }
00057   }
00058
00059 }
```

25.53 simfqt/service/SIMFQT_ServiceContext.hpp File Reference

```
#include <string>
#include <stdair/stdair_service_types.hpp>
#include <stdair/service/ServiceAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class SIMFQT::SIMFQT_ServiceContext

  Class holding the context of the SimFQT services.

Namespaces

- namespace stdair

  Forward declarations.
- namespace SIMFQT

25.54 SIMFQT_ServiceContext.hpp

```
00001 #ifndef __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00003
00004 // ////////////////////////////////////////////////////////////////////
00005 // Import section
00006 // ////////////////////////////////////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
```

```
00010 #include <stdair/stdair_service_types.hpp>
00011 #include <stdair/service/ServiceAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00016 namespace stdair {
00017   class STDAIR_Service;
00018 }
00019
00020 namespace SIMFQT {
00021
00025   class SIMFQT_ServiceContext : public stdair::ServiceAbstract {
00031     friend class SIMFQT_Service;
00032     friend class FacSimfqtServiceContext;
00033
00034   private:
00035     // ///////// Getters //////////
00039     stdair::STDAIR_ServicePtr_T getSTDAIR_ServicePtr() const {
00040       return _stdairService;
00041     }
00042
00046     stdair::STDAIR_Service& getSTDAIR_Service() const;
00047
00051     const bool getOwnStdairServiceFlag() const {
00052       return _ownStdairService;
00053     }
00054
00055
00056   private:
00057     // ///////// Setters //////////
00061     void setSTDAIR_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00062                             const bool iOwnStdairService) {
00063       _stdairService = ioSTDAIR_ServicePtr;
00064       _ownStdairService = iOwnStdairService;
00065     }
00066
00070     void reset();
00071
00072
00073   private:
00074     // ///////// Display Methods //////////
00078     const std::string shortDisplay() const;
00079
00083     const std::string display() const;
00084
00088     const std::string describe() const;
00089
00090
00091   private:
00092     // /////// Construction / initialisation ////////
00096     SIMFQT_ServiceContext (const FareQuoteID_T&);
00097
00101     SIMFQT_ServiceContext();
00102
00106     SIMFQT_ServiceContext (const SIMFQT_ServiceContext&);
00107
00111     ~SIMFQT_ServiceContext();
00112
00113
00114   private:
00115     // ////////////// Children ////////////
00119     stdair::STDAIR_ServicePtr_T _stdairService;
```

```
00120
00124     bool _ownStdairService;
00125   };
00126
00127 }
00128 #endif // __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
```

25.55 simfqt/SIMFQT_Service.hpp File Reference

```
#include <stdair/stdair_basic_types.hpp>
#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class SIMFQT::SIMFQT_Service

  Interface for the SIMFQT Services.

Namespaces

- namespace stdair

  Forward declarations.
- namespace SIMFQT

25.56 SIMFQT_Service.hpp

```
00001 #ifndef __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/stdair_service_types.hpp>
00010 #include <stdair/bom/TravelSolutionTypes.hpp>
00011 // SimFQT
00012 #include <simfqt/SIMFQT_Types.hpp>
00013
00015 namespace stdair {
00016   class STDAIR_Service;
00017   struct BookingRequestStruct;
00018   struct BasLogParams;
00019   struct BasDBParams;
00020 }
00021
00022 namespace SIMFQT {
00023
00025   class SIMFQT_ServiceContext;
```

```
00026
00027
00031   class SIMFQT_Service {
00032   public:
00033
00034     // ////////////////// Constructors and Destructors /////////////////
00046     SIMFQT_Service (const stdair::BasLogParams&);
00047
00060     SIMFQT_Service (const stdair::BasLogParams&, const stdair::BasDBParams&);
00061
00077     SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr);
00078
00087     void parseAndLoad (const FareFilePath& iFareFilename);
00088
00092     ~SIMFQT_Service();
00093
00094
00095   public:
00096     // ////////// Business Methods /////////////
00108     void buildSampleBom();
00109
00116     stdair::BookingRequestStruct buildBookingRequest(const bool isForCRS = false)
    ;
00117
00135     void buildSampleTravelSolutions (stdair::TravelSolutionList_T&);
00136
00146     void quotePrices (const stdair::BookingRequestStruct&,
00147                       stdair::TravelSolutionList_T&);
00148
00149
00150   public:
00151     // ///////////////// Display support methods /////////////////
00159     std::string csvDisplay() const;
00160
00168     std::string csvDisplay (const stdair::TravelSolutionList_T&) const;
00169
00182     std::string csvDisplay (const stdair::AirportCode_T& ioOrigin,
00183                             const stdair::AirportCode_T& ioDestination,
00184                             const stdair::Date_T& ioDepartureDate) const;
00185
00194     std::string list() const;
00195
00208     bool check (const stdair::AirportCode_T& ioOrigin,
00209                 const stdair::AirportCode_T& ioDestination,
00210                 const stdair::Date_T& ioDepartureDate) const;
00211
00212   private:
00213     // /////// Construction and Destruction helper methods ///////
00217     SIMFQT_Service();
00218
00222     SIMFQT_Service (const SIMFQT_Service&);
00223
00233     stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&,
00234                                                    const stdair::BasDBParams&);
00235
00244     stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&);
00245
00254     void addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00255                            const bool iOwnStdairService);
00256
00261     void initServiceContext();
00262
```

```
00269     void initSimfqtService();
00270
00279     void initSimfqtService (const FareFilePath& iFareFilename);
00280
00284     void finalise();
00285
00286
00287   private:
00288     // ********* Service Context *********
00292     SIMFQT_ServiceContext* _simfqtServiceContext;
00293   };
00294 }
00295 #endif // __SIMFQT_SVC_SIMFQT_SERVICE_HPP
```

25.57 simfqt/SIMFQT_Types.hpp File Reference

```
#include <vector>
#include <string>
#include <boost/shared_ptr.hpp>
#include <stdair/stdair_exceptions.hpp>
#include <stdair/stdair_file.hpp>
```

Classes

- class SIMFQT::FareFileParsingFailedException
- class SIMFQT::AirportPairNotFoundException
- class SIMFQT::PosOrChannelNotFoundException
- class SIMFQT::FlightDateNotFoundException
- class SIMFQT::FlightTimeNotFoundException
- class SIMFQT::FeaturesNotFoundException
- class SIMFQT::AirlineNotFoundException
- class SIMFQT::FareInputFileNotFoundException
- class SIMFQT::QuotingException
- class SIMFQT::FareFilePath

Namespaces

- namespace SIMFQT

Typedefs

- typedef unsigned int SIMFQT::FareQuoteID_T
- typedef boost::shared_ptr< SIMFQT_Service > SIMFQT::SIMFQT_ServicePtr_T

25.58 SIMFQT_Types.hpp

```
00001 #ifndef __SIMFQT_SIMFQT_TYPES_HPP
00002 #define __SIMFQT_SIMFQT_TYPES_HPP
00003
00004 // //////////////////////////////////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////////////////////////////////
00007 // STL
00008 #include <vector>
00009 #include <string>
00010 // Boost
00011 #include <boost/shared_ptr.hpp>
00012 // StdAir
00013 #include <stdair/stdair_exceptions.hpp>
00014 #include <stdair/stdair_file.hpp>
00015
00016 namespace SIMFQT {
00017
00018   // Forward declarations
00019   class SIMFQT_Service;
00020
00021
00022   // ///////// Exceptions //////////
00026   class FareFileParsingFailedException
00027     : public stdair::ParsingFileFailedException {
00028   public:
00032     FareFileParsingFailedException (const std::string& iWhat)
00033       : stdair::ParsingFileFailedException (iWhat) {}
00034   };
00035
00039   class AirportPairNotFoundException : public stdair::ObjectNotFoundException {
00040   public:
00044     AirportPairNotFoundException (const std::string& iWhat)
00045       : stdair::ObjectNotFoundException (iWhat) {}
00046   };
00047
00051   class PosOrChannelNotFoundException : public stdair::ObjectNotFoundException {
00052   public:
00056     PosOrChannelNotFoundException (const std::string& iWhat)
00057       : stdair::ObjectNotFoundException (iWhat) {}
00058   };
00059
00063   class FlightDateNotFoundException : public stdair::ObjectNotFoundException {
00064   public:
00068     FlightDateNotFoundException (const std::string& iWhat)
00069       : stdair::ObjectNotFoundException (iWhat) {}
00070   };
00071
00075   class FlightTimeNotFoundException : public stdair::ObjectNotFoundException {
00076   public:
00080     FlightTimeNotFoundException (const std::string& iWhat)
00081       : stdair::ObjectNotFoundException (iWhat) {}
00082   };
00083
00087   class FeaturesNotFoundException : public stdair::ObjectNotFoundException {
00088   public:
00092     FeaturesNotFoundException (const std::string& iWhat)
00093       : stdair::ObjectNotFoundException (iWhat) {}
00094   };
00095
00099   class AirlineNotFoundException : public stdair::ObjectNotFoundException {
```

```
00100   public:
00104     AirlineNotFoundException (const std::string& iWhat)
00105       : stdair::ObjectNotFoundException (iWhat) {}
00106   };
00107
00111   class FareInputFileNotFoundException : public stdair::FileNotFoundException {
00112   public:
00116     FareInputFileNotFoundException (const std::string& iWhat)
00117       : stdair::FileNotFoundException (iWhat) {}
00118   };
00119
00123   class QuotingException : public stdair::RootException {
00124   };
00125
00126   // ///////// Files ///////////
00130   class FareFilePath : public stdair::InputFilePath {
00131   public:
00135     explicit FareFilePath (const stdair::Filename_T& iFilename)
00136       : stdair::InputFilePath (iFilename) {}
00137   };
00138
00139   // //////// Type definitions specific to SimFQT /////////
00143   typedef unsigned int FareQuoteID_T;
00144
00148   typedef boost::shared_ptr<SIMFQT_Service> SIMFQT_ServicePtr_T;
00149 }
00150 #endif // __SIMFQT_SIMFQT_TYPES_HPP
```

25.59 simfqt/ui/cmdline/simfqt.cpp File Reference

25.60 simfqt.cpp

```
00001
00005 // STL
00006 #include <cassert>
00007 #include <iostream>
00008 #include <sstream>
00009 #include <fstream>
00010 #include <string>
00011 // Boost (Extended STL)
00012 #include <boost/program_options.hpp>
00013 #include <boost/tokenizer.hpp>
00014 #include <boost/regex.hpp>
00015 // StdAir
00016 #include <stdair/basic/BasLogParams.hpp>
00017 #include <stdair/basic/BasConst_BomDisplay.hpp>
00018 #include <stdair/basic/BasDBParams.hpp>
00019 #include <stdair/basic/BasConst_DefaultObject.hpp>
00020 #include <stdair/basic/BasConst_Inventory.hpp>
00021 #include <stdair/basic/BasConst_Request.hpp>
00022 #include <stdair/service/Logger.hpp>
00023 #include <stdair/stdair_exceptions.hpp>
00024 #include <stdair/stdair_basic_types.hpp>
00025 #include <stdair/stdair_date_time_types.hpp>
00026 #include <stdair/bom/TravelSolutionStruct.hpp>
00027 #include <stdair/bom/BookingRequestStruct.hpp>
00028 #include <stdair/bom/ParsedKey.hpp>
00029 #include <stdair/bom/BomKeyManager.hpp>
00030 #include <stdair/command/CmdBomManager.hpp>
00031 // Stdair GNU Readline Wrapper
```

```
00032 #include <stdair/ui/cmdline/SReadline.hpp>
00033 // Simfqt
00034 #include <simfqt/SIMFQT_Service.hpp>
00035 #include <simfqt/config/simfqt-paths.hpp>
00036
00037
00038 // //////// Constants //////
00042 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt.log");
00043
00047 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00048                                                          "/fare01.csv");
00049
00054 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00055
00059 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00060
00065 typedef std::vector<std::string> TokenList_T;
00066
00070 struct Command_T {
00071   typedef enum {
00072     NOP = 0,
00073     QUIT,
00074     HELP,
00075     LIST,
00076     DISPLAY,
00077     PRICE,
00078     LAST_VALUE
00079   } Type_T;
00080 };
00081
00082 // ///////// Parsing of Options & Configuration /////////
00083 // A helper function to simplify the main part.
00084 template<class T> std::ostream& operator<< (std::ostream& os,
00085                                             const std::vector<T>& v) {
00086   std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
00087   return os;
00088 }
00089
00093 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00094                        stdair::Filename_T& ioFareInputFilename,
00095                        std::string& ioLogFilename) {
00096
00097   // Default for the built-in input
00098   ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00099
00100   // Declare a group of options that will be allowed only on command line
00101   boost::program_options::options_description generic ("Generic options");
00102   generic.add_options()
00103     ("prefix", "print installation prefix")
00104     ("version,v", "print version string")
00105     ("help,h", "produce help message");
00106
00107   // Declare a group of options that will be allowed both on command
00108   // line and in config file
00109   boost::program_options::options_description config ("Configuration");
00110   config.add_options()
00111     ("builtin,b",
00112      "The sample BOM tree can be either built-in or parsed from an input file. Th
      at latter must then be given with the -f/--fare option")
00113     ("fare,f",
00114      boost::program_options::value< std::string >(&ioFareInputFilename)->default_
      value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),
```

```
00115       "(CSV) input file for the fare rules")
00116      ("log,l",
00117       boost::program_options::value< std::string >(&ioLogFilename)->default_value(
      K_SIMFQT_DEFAULT_LOG_FILENAME),
00118       "Filename for the logs")
00119      ;
00120
00121    // Hidden options, will be allowed both on command line and
00122    // in config file, but will not be shown to the user.
00123    boost::program_options::options_description hidden ("Hidden options");
00124    hidden.add_options()
00125      ("copyright",
00126       boost::program_options::value< std::vector<std::string> >(),
00127       "Show the copyright (license)");
00128
00129    boost::program_options::options_description cmdline_options;
00130    cmdline_options.add(generic).add(config).add(hidden);
00131
00132    boost::program_options::options_description config_file_options;
00133    config_file_options.add(config).add(hidden);
00134
00135    boost::program_options::options_description visible ("Allowed options");
00136    visible.add(generic).add(config);
00137
00138    boost::program_options::positional_options_description p;
00139    p.add ("copyright", -1);
00140
00141    boost::program_options::variables_map vm;
00142    boost::program_options::
00143      store (boost::program_options::command_line_parser (argc, argv).
00144             options (cmdline_options).positional(p).run(), vm);
00145
00146    std::ifstream ifs ("simfqt.cfg");
00147    boost::program_options::store (parse_config_file (ifs, config_file_options),
00148                                   vm);
00149    boost::program_options::notify (vm); if (vm.count ("help")) {
00150      std::cout << visible << std::endl;
00151      return K_SIMFQT_EARLY_RETURN_STATUS;
00152    }
00153
00154    if (vm.count ("version")) {
00155      std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00156      return K_SIMFQT_EARLY_RETURN_STATUS;
00157    }
00158
00159    if (vm.count ("prefix")) {
00160      std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00161      return K_SIMFQT_EARLY_RETURN_STATUS;
00162    }
00163
00164    if (vm.count ("builtin")) {
00165      ioIsBuiltin = true;
00166    }
00167    const std::string isBuiltinStr = (ioIsBuiltin == true)?"yes":"no";
00168    std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00169
00170    if (ioIsBuiltin == false) {
00171
00172      // The BOM tree should be built from parsing a fare (and O&D) file
00173      if (vm.count ("fare")) {
00174        ioFareInputFilename = vm["fare"].as< std::string >();
00175        std::cout << "Input fare filename is: " << ioFareInputFilename
```

```
00176                 << std::endl;
00177
00178     } else {
00179       // The built-in option is not selected. However, no fare file
00180       // is specified
00181       std::cerr << "Either one among the -b/--builtin and -f/--fare "
00182                 << "options must be specified" << std::endl;
00183     }
00184   }
00185
00186   if (vm.count ("log")) {
00187     ioLogFilename = vm["log"].as< std::string >();
00188     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00189   }
00190
00191   return 0;
00192
00193 }
00194
00195 // //////////////////////////////////////////////////////////////////
00196 void initReadline (swift::SReadline& ioInputReader) {
00197
00198   // Prepare the list of my own completers
00199   std::vector<std::string> Completers;
00200
00201   // The following is supported:
00202   // - "identifiers"
00203   // - special identifier %file - means to perform a file name completion
00204   Completers.push_back ("help");
00205   Completers.push_back ("list");
00206   Completers.push_back ("display %airport_code %airport_code %departure_date");
00207   Completers.push_back ("price %airline_code %flight_number %departure_date %airp
      ort_code %airport_code %departure_time %booking_date %booking_time %POS %channel%
       %trip_type %stay_duration");
00208   Completers.push_back ("quit");
00209
00210   // Now register the completers.
00211   // Actually it is possible to re-register another set at any time
00212   ioInputReader.RegisterCompletions (Completers);
00213 }
00214
00215 // //////////////////////////////////////////////////////////////////
00216 Command_T::Type_T extractCommand (TokenList_T& ioTokenList) {
00217   Command_T::Type_T oCommandType = Command_T::LAST_VALUE;
00218
00219   // Interpret the user input
00220   if (ioTokenList.empty() == false) {
00221     TokenList_T::iterator itTok = ioTokenList.begin();
00222     std::string& lCommand (*itTok);
00223     boost::algorithm::to_lower (lCommand);
00224
00225     if (lCommand == "help") {
00226       oCommandType = Command_T::HELP;
00227
00228     } else if (lCommand == "list") {
00229       oCommandType = Command_T::LIST;
00230
00231     } else if (lCommand == "display") {
00232       oCommandType = Command_T::DISPLAY;
00233
00234     } else if (lCommand == "price") {
00235       oCommandType = Command_T::PRICE;
```

```
00236
00237     } else if (lCommand == "quit") {
00238       oCommandType = Command_T::QUIT;
00239
00240     }
00241
00242     // Remove the first token (the command), as the corresponding information
00243     // has been extracted in the form of the returned command type enumeration
00244     ioTokenList.erase (itTok);
00245
00246   } else {
00247     oCommandType = Command_T::NOP;
00248   }
00249
00250   return oCommandType;
00251 }
00252
00253 // //////////////////////////////////////////////////////////////////
00254 // Re-compose a date using three strings: the year, the month and the
00255 // day. Return true if a correct date has been computed, false if not.
00256 bool retrieveDate (std::string iYearString,
00257                    std::string iMonthString,
00258                    std::string iDayString,
00259                    stdair::Date_T& ioDate) {
00260
00261   const std::string kMonthStr[12] = {"Jan", "Feb", "Mar", "Apr", "May", "Jun",
00262                                      "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"};
00263
00264   // Check the year.
00265   unsigned short lDateYear;
00266   try {
00267
00268     lDateYear = boost::lexical_cast<unsigned short> (iYearString);
00269     if (lDateYear < 100) {
00270       lDateYear += 2000;
00271     }
00272
00273   } catch (boost::bad_lexical_cast& eCast) {
00274     std::cerr << "The year ('" << iYearString
00275               << "') cannot be understood." << std::endl;
00276     return false;
00277   }
00278
00279   // Check the month.
00280   std::string lDateMonthStr;
00281   try {
00282
00283     const boost::regex lMonthRegex ("^(\\d{1,2})$");
00284     const bool isMonthANumber = regex_match (iMonthString, lMonthRegex);
00285
00286     if (isMonthANumber == true) {
00287       const unsigned short lMonth =
00288         boost::lexical_cast<unsigned short> (iMonthString);
00289       if (lMonth > 12) {
00290         throw boost::bad_lexical_cast();
00291       }
00292       if (lMonth != 0) {
00293         lDateMonthStr = kMonthStr[lMonth-1];
00294       } else {
00295         std::cerr << "The month ('" << iMonthString
00296               << "') cannot be understood." << std::endl;
00297         return false;
```

```
00298       }
00299
00300     } else {
00301       if (iMonthString.size() < 3) {
00302         throw boost::bad_lexical_cast();
00303       }
00304       std::string lMonthStr1 (iMonthString.substr (0, 1));
00305       boost::algorithm::to_upper (lMonthStr1);
00306       std::string lMonthStr23 (iMonthString.substr (1, 2));
00307       boost::algorithm::to_lower (lMonthStr23);
00308       lDateMonthStr = lMonthStr1 + lMonthStr23;
00309     }
00310
00311   } catch (boost::bad_lexical_cast& eCast) {
00312     std::cerr << "The month ('" << iMonthString
00313               << "') cannot be understood." << std::endl;
00314     return false;
00315   }
00316
00317   // Check the day.
00318   unsigned short lDateDay;
00319   try {
00320
00321     lDateDay = boost::lexical_cast<unsigned short> (iDayString);
00322
00323   } catch (boost::bad_lexical_cast& eCast) {
00324     std::cerr << "The day ('" << iDayString
00325               << "') cannot be understood." << std::endl;
00326     return false;
00327   }
00328
00329   // Re-compose the date.
00330   std::ostringstream lDateStr;
00331   lDateStr << lDateYear << "-" << lDateMonthStr
00332            << "-" << lDateDay;
00333   try {
00334
00335     ioDate =
00336       boost::gregorian::from_simple_string (lDateStr.str());
00337
00338   } catch (boost::gregorian::bad_month& eCast) {
00339     std::cerr << "The month of the date ('" << lDateStr.str()
00340               << "') cannot be understood." << std::endl;
00341     return false;
00342   } catch (boost::gregorian::bad_day_of_month& eCast) {
00343     std::cerr << "The date ('" << lDateStr.str()
00344               << "') is not correct: the day of month does not exist."
00345               << std::endl;
00346     return false;
00347   } catch (boost::gregorian::bad_year& eCast) {
00348     std::cerr << "The year ('" << lDateStr.str()
00349               << "') is not correct."
00350               << std::endl;
00351     return false;
00352   }
00353
00354   return true;
00355 }
00356
00357 // ////////////////////////////////////////////////////////////////////
00358 // Re-compose a time using two strings: the hour and the minute.
00359 // Return true if a correct time has been computed, false if not.
```

```
00360 bool retrieveTime (std::string iHourString,
00361                    std::string iMinuteString,
00362                    stdair::Duration_T& oTime) {
00363
00364   // Check the hour
00365   unsigned short lTimeHour;
00366   try {
00367
00368     lTimeHour = boost::lexical_cast<unsigned short> (iHourString);
00369
00370   } catch (boost::bad_lexical_cast& eCast) {
00371     std::cerr << "The hour of the time ('" << iHourString
00372               << "') cannot be understood." << std::endl;
00373     return false;
00374   }
00375
00376   // Check the minutes
00377   unsigned short lTimeMinute;
00378   try {
00379
00380     lTimeMinute = boost::lexical_cast<unsigned short> (iMinuteString);
00381
00382   } catch (boost::bad_lexical_cast& eCast) {
00383     std::cerr << "The minute of the time ('" << iMinuteString
00384               << "') cannot be understood." << std::endl;
00385     return false;
00386   }
00387
00388
00389   // Re-compose the time
00390   std::ostringstream lTimeStr;
00391   lTimeStr << lTimeHour << ":" << lTimeMinute;
00392   oTime =
00393     boost::posix_time::duration_from_string (lTimeStr.str());
00394
00395   return true;
00396 }
00397
00398 // ////////////////////////////////////////////////////////////////////
00399 // Analyze the tokens of the 'price' command in order to construct
00400 // a travel solution list and a booking request.
00401 const stdair::BookingRequestStruct parseTravelSolutionAndBookingRequestKey
00402 (const TokenList_T& iTokenList,
00403  stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
00404  const stdair::BookingRequestStruct& ioBookingRequestStruct) {
00405
00406   TokenList_T::const_iterator itTok = iTokenList.begin();
00407
00408   if (itTok->empty() == true) {
00409
00410     std::cerr << "Wrong list of parameters. "
00411               << "The default booking request and travel solution list are kept."

00412               << std::endl;
00413     return ioBookingRequestStruct;
00414
00415
00416   } else {
00417     // Parameters corresponding to the tokens.
00418     // Each parameter correponds to one token except the dates
00419     // (three tokens) and the times (two tokens).
00420     stdair::AirlineCode_T lAirlineCode;
```

```
00421     stdair::FlightNumber_T lflightNumber;
00422     stdair::Date_T lDepartureDate;
00423     stdair::Duration_T lDepartureTime;
00424     stdair::AirportCode_T lOriginAirport;
00425     stdair::AirportCode_T lDestinationAirport;
00426     stdair::Date_T lRequestDate;
00427     stdair::Duration_T lRequestTime;
00428     stdair::CityCode_T lPOS;
00429     stdair::ChannelLabel_T lChannel;
00430     stdair::TripType_T lTripType;
00431     unsigned short lStayDuration;
00432
00433     // Read the airline code.
00434     lAirlineCode = *itTok;
00435     boost::algorithm::to_upper (lAirlineCode);
00436
00437     // Read the flight-number  .
00438     ++itTok;
00439     if (itTok->empty() == false) {
00440       try {
00441
00442         lflightNumber = boost::lexical_cast<stdair::FlightNumber_T> (*itTok);
00443
00444       } catch (boost::bad_lexical_cast& eCast) {
00445         std::cerr << "The flight number ('" << *itTok
00446                   << "') cannot be understood."
00447                   << std::endl;
00448         return ioBookingRequestStruct;
00449       }
00450     }
00451
00452     // Read the departure date.
00453     ++itTok;
00454     if (itTok->empty() == true) {
00455       return ioBookingRequestStruct;
00456     }
00457     const std::string lDepartureYearString = *itTok;
00458     ++itTok;
00459     if (itTok->empty() == true) {
00460       return ioBookingRequestStruct;
00461     }
00462     const std::string lDepartureMonthString = *itTok;
00463     ++itTok;
00464     if (itTok->empty() == true) {
00465       return ioBookingRequestStruct;
00466     }
00467     const std::string lDepartureDayString = *itTok;
00468     const bool IsDepartureDateReadable =
00469       retrieveDate (lDepartureYearString, lDepartureMonthString,
00470                     lDepartureDayString, lDepartureDate);
00471
00472     if (IsDepartureDateReadable == false) {
00473       std::cerr << "The default booking request and travel solution list are kept
    ."
00474                 << std::endl;
00475       return ioBookingRequestStruct;
00476     }
00477
00478     // Read the origin.
00479     ++itTok;
00480     if (itTok->empty() == false) {
00481       lOriginAirport = *itTok;
```

```
00482       boost::algorithm::to_upper (lOriginAirport);
00483     }
00484
00485     // Read the destination.
00486     ++itTok;
00487     if (itTok->empty() == false) {
00488       lDestinationAirport = *itTok;
00489       boost::algorithm::to_upper (lDestinationAirport);
00490     }
00491
00492     // Read the departure time.
00493     ++itTok;
00494     if (itTok->empty() == true) {
00495       return ioBookingRequestStruct;
00496     }
00497     const std::string lDepartureHourString = *itTok;
00498     ++itTok;
00499     if (itTok->empty() == true) {
00500       return ioBookingRequestStruct;
00501     }
00502     const std::string lDepartureMinuteString = *itTok;
00503     const bool IsDepartureTimeReadable =
00504       retrieveTime (lDepartureHourString, lDepartureMinuteString,
00505                     lDepartureTime);
00506
00507     if (IsDepartureTimeReadable == false) {
00508       std::cerr << "The default booking request and travel solution list are kept
    ."
00509                 << std::endl;
00510       return ioBookingRequestStruct;
00511     }
00512
00513     // Read the request date.
00514     ++itTok;
00515     if (itTok->empty() == true) {
00516         return ioBookingRequestStruct;
00517     }
00518     const std::string lRequestYearString = *itTok;
00519     ++itTok;
00520     if (itTok->empty() == true) {
00521       return ioBookingRequestStruct;
00522     }
00523     const std::string lRequestMonthString = *itTok;
00524     ++itTok;
00525     if (itTok->empty() == true) {
00526       return ioBookingRequestStruct;
00527     }
00528     const std::string lRequestDayString = *itTok;
00529     const bool IsRequestDateReadable =
00530       retrieveDate (lRequestYearString, lRequestMonthString,
00531                     lRequestDayString, lRequestDate);
00532
00533     if (IsRequestDateReadable == false) {
00534       std::cerr << "The default booking request and travel solution list are kept
    ."
00535                 << std::endl;
00536       return ioBookingRequestStruct;
00537     }
00538
00539     // Read the request time.
00540     ++itTok;
00541     if (itTok->empty() == true) {
```

```
00542       return ioBookingRequestStruct;
00543     }
00544     const std::string lRequestHourString = *itTok;
00545     ++itTok;
00546     if (itTok->empty() == true) {
00547       return ioBookingRequestStruct;
00548     }
00549     const std::string lRequestMinuteString = *itTok;
00550     const bool IsRequestTimeReadable =
00551       retrieveTime (lRequestHourString, lRequestMinuteString,
00552                     lRequestTime);
00553
00554     if (IsRequestTimeReadable == false) {
00555       std::cerr << "The default booking request and travel solution list are kept
      ."
00556                 << std::endl;
00557       return ioBookingRequestStruct;
00558     }
00559
00560     // Read the POS.
00561     ++itTok;
00562     if (itTok->empty() == false) {
00563       lPOS = *itTok;
00564       boost::algorithm::to_upper (lPOS);
00565     }
00566
00567     // Read the channel.
00568     ++itTok;
00569     if (itTok->empty() == false) {
00570       lChannel = *itTok;
00571       boost::algorithm::to_upper (lChannel);
00572     }
00573
00574     // Read the trip type.
00575     ++itTok;
00576     if (itTok->empty() == false) {
00577       lTripType = *itTok;
00578       boost::algorithm::to_upper (lTripType);
00579     }
00580
00581     // Read the stay duration.
00582     ++itTok;
00583     if (itTok->empty() == false) {
00584       try {
00585
00586         lStayDuration = boost::lexical_cast<unsigned short> (*itTok);
00587
00588       } catch (boost::bad_lexical_cast& eCast) {
00589         std::cerr << "The stay duration ('" << *itTok
00590                   << "') cannot be understood." << std::endl;
00591         return ioBookingRequestStruct;
00592       }
00593     }
00594
00595     // At this step we know that all the parameters designed to construct
00596     // the travel solution and the booking request are correct.
00597
00598     // Empty the travel solution list to store a new travel solution.
00599     ioInteractiveTravelSolutionList.pop_front();
00600     // Construct the new travel solution.
00601     stdair::TravelSolutionStruct lTravelSolution;
00602     std::ostringstream oStr;
```

```
00603     oStr << lAirlineCode
00604          << stdair::DEFAULT_KEY_FLD_DELIMITER
00605          << lflightNumber
00606          << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00607          << lDepartureDate
00608          << stdair::DEFAULT_KEY_FLD_DELIMITER
00609          << lOriginAirport
00610          << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00611          << lDestinationAirport
00612          << stdair::DEFAULT_KEY_FLD_DELIMITER
00613          << lDepartureTime;
00614     lTravelSolution.addSegment (oStr.str());
00615     ioInteractiveTravelSolutionList.push_front(lTravelSolution);
00616
00617     // Construct the new booking request.
00618     stdair::DateTime_T lRequestDateTime (lRequestDate, lRequestTime);
00619     const stdair::BookingRequestStruct &lBookingRequestStruct =
00620       stdair::BookingRequestStruct(lOriginAirport,
00621                                    lDestinationAirport,
00622                                    lPOS,
00623                                    lDepartureDate,
00624                                    lRequestDateTime,
00625                                    stdair::CABIN_ECO,
00626                                    stdair::DEFAULT_PARTY_SIZE,
00627                                    lChannel,
00628                                    lTripType,
00629                                    lStayDuration,
00630                                    stdair::FREQUENT_FLYER_MEMBER,
00631                                    lDepartureTime,
00632                                    stdair::DEFAULT_WTP,
00633                                    stdair::DEFAULT_VALUE_OF_TIME);
00634
00635     return lBookingRequestStruct;
00636   }
00637 }
00638
00639 // ////////////////////////////////////////////////////////////////////
00640 // Analyze the tokens of the 'display' command in order to retrieve
00641 // an airport pair and a departure date.
00642 void parseFlightDateKey (const TokenList_T& iTokenList,
00643                          stdair::AirportCode_T& ioOrigin,
00644                          stdair::AirportCode_T& ioDestination,
00645                          stdair::Date_T& ioDepartureDate) {
00646
00647   TokenList_T::const_iterator itTok = iTokenList.begin();
00648
00649   // Interpret the user input.
00650   if (itTok->empty() == true) {
00651
00652     std::cerr << "Wrong parameters specified. Default paramaters '"
00653               << ioOrigin << "-" << ioDestination
00654               << "/" << ioDepartureDate
00655               << "' are kept."
00656              << std::endl;
00657
00658   } else {
00659
00660     // Read the origin.
00661     ioOrigin = *itTok;
00662     boost::algorithm::to_upper (ioOrigin);
00663
00664     // Read the destination.
```

```
00665     ++itTok;
00666     if (itTok->empty() == false) {
00667       ioDestination  = *itTok;
00668       boost::algorithm::to_upper (ioDestination);
00669     }
00670 
00671     // Read the departure date.
00672     ++itTok;
00673     if (itTok->empty() == true) {
00674       return;
00675     }
00676     std::string lYearString = *itTok;
00677     ++itTok;
00678     if (itTok->empty() == true) {
00679       return;
00680     }
00681     std::string lMonthString = *itTok;
00682     ++itTok;
00683     if (itTok->empty() == true) {
00684       return;
00685     }
00686     std::string lDayString = *itTok;
00687     const bool IsDepartureDateReadable =
00688       retrieveDate (lYearString, lMonthString, lDayString,
00689                     ioDepartureDate);
00690     if (IsDepartureDateReadable == false) {
00691       std::cerr << "Default paramaters '"
00692                 << ioOrigin << "-" << ioDestination
00693                 << "/" << ioDepartureDate
00694                 << "' are kept."
00695                 << std::endl;
00696       return;
00697     }
00698   }
00699 }
00700 
00701 // ////////////////////////////////////////////////////////////
00702 std::string toString (const TokenList_T& iTokenList) {
00703   std::ostringstream oStr;
00704 
00705   // Re-create the string with all the tokens, trimmed by read-line
00706   unsigned short idx = 0;
00707   for (TokenList_T::const_iterator itTok = iTokenList.begin();
00708        itTok != iTokenList.end(); ++itTok, ++idx) {
00709     if (idx != 0) {
00710       oStr << " ";
00711     }
00712     oStr << *itTok;
00713   }
00714 
00715   return oStr.str();
00716 }
00717 
00718 // ////////////////////////////////////////////////////////////
00719 TokenList_T extractTokenList (const TokenList_T& iTokenList,
00720                               const std::string& iRegularExpression) {
00721   TokenList_T oTokenList;
00722 
00723   // Re-create the string with all the tokens (which had been trimmed
00724   // by read-line)
00725   const std::string lFullLine = toString (iTokenList);
00726 
```

```
00727   // See the caller for the regular expression
00728   boost::regex expression (iRegularExpression);
00729
00730   std::string::const_iterator start = lFullLine.begin();
00731   std::string::const_iterator end = lFullLine.end();
00732
00733   boost::match_results<std::string::const_iterator> what;
00734   boost::match_flag_type flags = boost::match_default | boost::format_sed;
00735   regex_search (start, end, what, expression, flags);
00736
00737   // Put the matched strings in the list of tokens to be returned back
00738   // to the caller
00739   const unsigned short lMatchSetSize = what.size();
00740   for (unsigned short matchIdx = 1; matchIdx != lMatchSetSize; ++matchIdx) {
00741     const std::string lMatchedString (std::string (what[matchIdx].first,
00742                                                    what[matchIdx].second));
00743     //if (lMatchedString.empty() == false) {
00744     oTokenList.push_back (lMatchedString);
00745     //}
00746   }
00747
00748   // DEBUG
00749   // std::cout << "After (token list): " << oTokenList << std::endl;
00750
00751   return oTokenList;
00752 }
00753
00754 // //////////////////////////////////////////////////////
00755 // Parse the token list of the 'price' command.
00756 TokenList_T extractTokenListForTSAndBR (const TokenList_T& iTokenList) {
00778   const std::string lRegEx("^([[:alpha:]]{2,3})"
00779                            "[[:space:]]+([[:digit:]]{1,4})"
00780                            "[/ ]*"
00781                            "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00782                            "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00783                            "[[:space:]]*([[:digit:]]{1,2})[[:space:]]*"
00784                            "[[:space:]]+([[:alpha:]]{3})"
00785                            "[[:space:]]+([[:alpha:]]{3})"
00786                            "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"

00787                            "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00788                            "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00789                            "[[:space:]]*([[:digit:]]{1,2})"
00790                            "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"

00791                            "[[:space:]]+([[:alpha:]]{3})"
00792                            "[[:space:]]+([[:alpha:]]{2})"
00793                            "[[:space:]]+([[:alpha:]]{2})"
00794                            "[[:space:]]+([[:digit:]]{1})$");
00795
00796   //
00797   const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegEx);
00798   return oTokenList;
00799 }
00800
00801 // //////////////////////////////////////////////////////
00802 // Parse the token list of the 'display' command.
00803 TokenList_T extractTokenListForOriDestDate (const TokenList_T& iTokenList) {
00813   const std::string lRegEx("^([[:alpha:]]{3})"
00814                            "[[:space:]]*[/-]?"
00815                            "[[:space:]]*([[:alpha:]]{3})"
00816                            "[[:space:]]*[/-]?"
```

```
00817                             "[[:space:]]*([[:digit:]]{2,4})"
00818                             "[[:space:]]*[/-]?"
00819                             "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})"
00820                             "[[:space:]]*[/-]?"
00821                             "[[:space:]]*([[:digit:]]{1,2})$");
00822 
00823   //
00824   const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegEx);
00825   return oTokenList;
00826 }
00827 
00828 // ///////// M A I N ////////////
00829 int main (int argc, char* argv[]) {
00830 
00831   // State whether the BOM tree should be built-in or parsed from an
00832   // input file
00833   bool isBuiltin;
00834 
00835   // Fare input file name
00836   stdair::Filename_T lFareInputFilename;
00837 
00838   // Readline history
00839   const unsigned int lHistorySize (100);
00840   const std::string lHistoryFilename ("simfqt.hist");
00841   const std::string lHistoryBackupFilename ("simfqt.hist.bak");
00842 
00843   // Default parameters for the interactive session
00844   stdair::AirportCode_T lInteractiveOrigin;
00845   stdair::AirportCode_T lInteractiveDestination;
00846   stdair::Date_T lInteractiveDepartureDate;
00847 
00848   // Output log File
00849   stdair::Filename_T lLogFilename;
00850 
00851   // Call the command-line option parser
00852   const int lOptionParserStatus =
00853     readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename);
00854 
00855   if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00856     return 0;
00857   }
00858 
00859   // Set the log parameters
00860   std::ofstream logOutputFile;
00861   // Open and clean the log outputfile
00862   logOutputFile.open (lLogFilename.c_str());
00863   logOutputFile.clear();
00864 
00865   // Initialise the fareQuote service
00866   const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00867   SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00868 
00869   // DEBUG
00870   STDAIR_LOG_DEBUG ("Welcome to SimFQT display");
00871 
00872   // Check wether or not a (CSV) input file should be read
00873   if (isBuiltin == true) {
00874     // Build the sample BOM tree (filled with fares) for Simfqt
00875     simfqtService.buildSampleBom();
00876   } else {
00877     // Build the BOM tree from parsing a fare file
00878     SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);
```

```
00879     simfqtService.parseAndLoad (lFareFilePath);
00880   }
00881
00882   // DEBUG: Display the whole BOM tree
00883   const std::string& lCSVDump = simfqtService.csvDisplay();
00884   STDAIR_LOG_DEBUG (lCSVDump);
00885
00886   // DEBUG
00887   STDAIR_LOG_DEBUG ("====================================================");
00888   STDAIR_LOG_DEBUG ("=       Beginning of the interactive session       =");
00889   STDAIR_LOG_DEBUG ("====================================================");
00890
00891   // Initialise the GNU readline wrapper
00892   swift::SReadline lReader (lHistoryFilename, lHistorySize);
00893   initReadline (lReader);
00894
00895   // Now we can ask user for a line
00896   std::string lUserInput;
00897   bool EndOfInput (false);
00898   Command_T::Type_T lCommandType (Command_T::NOP);
00899
00900   while (lCommandType != Command_T::QUIT && EndOfInput == false) {
00901
00902     stdair::TravelSolutionList_T lInteractiveTravelSolutionList;
00903     stdair::TravelSolutionStruct lInteractiveTravelSolution;
00904
00905     // Update the default booking request.
00906     // If there is an input file, we want the CRS booking request (defined in std
      air).
00907     // If not, we want the default booking request.
00908     const bool isCRSBookingRequest = !isBuiltin;
00909     const stdair::BookingRequestStruct& lInteractiveBookingRequest =
00910       simfqtService.buildBookingRequest (isCRSBookingRequest);
00911
00912     // Update the default parameters for the following interactive session.
00913     if (isBuiltin == true) {
00914       lInteractiveOrigin = "LHR";
00915       lInteractiveDestination = "SYD";
00916       lInteractiveDepartureDate = stdair::Date_T(2011,06,10);
00917       simfqtService.buildSampleTravelSolutions (lInteractiveTravelSolutionList);
00918     } else {
00919       lInteractiveOrigin = "SIN";
00920       lInteractiveDestination = "BKK";
00921       lInteractiveDepartureDate = stdair::Date_T(2010,01,30);
00922       //
00923       const std::string lBA9_SegmentDateKey ("SQ, 970, 2010-01-30, SIN, BKK, 07:1
      0");
00924
00925       // Add the segment date key to the travel solution.
00926       lInteractiveTravelSolution.addSegment (lBA9_SegmentDateKey);
00927
00928       // Add the travel solution to the list
00929       lInteractiveTravelSolutionList.push_back (lInteractiveTravelSolution);
00930     }
00931
00932     // Prompt.
00933     std::ostringstream oPromptStr;
00934     oPromptStr << "simfqt "
00935                << "> ";
00936     // The last parameter could be ommited.
00937     TokenList_T lTokenListByReadline;
00938     lUserInput = lReader.GetLine (oPromptStr.str(), lTokenListByReadline,
```

```
00939                                     EndOfInput);
00940
00941     // The history could be saved to an arbitrary file at any time.
00942     lReader.SaveHistory (lHistoryBackupFilename);
00943
00944     if (EndOfInput) {
00945       std::cout << std::endl;
00946       break;
00947     }
00948
00949     // Interpret the user input.
00950     lCommandType = extractCommand (lTokenListByReadline);
00951
00952     switch (lCommandType) {
00953
00954       // ////////////////////////////// Help ////////////////////////
00955     case Command_T::HELP: {
00956       // Search for information to display default parameters lists.
00957       // Get the first travel solution.
00958       stdair::TravelSolutionStruct& lTravelSolutionStruct =
00959         lInteractiveTravelSolutionList.front();
00960       // Get the segment-path of the first travel solution.
00961       const stdair::SegmentPath_T& lSegmentPath =
00962         lTravelSolutionStruct.getSegmentPath();
00963       // Get the first segment of the first travel solution.
00964       const std::string& lSegmentDateKey = lSegmentPath.front();
00965       // Get the parsed key of the first segment of the first travel solution.
00966       const stdair::ParsedKey& lParsedKey =
00967         stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00968       // Get the request date time
00969       const stdair::DateTime_T& lRequestDateTime =
00970         lInteractiveBookingRequest.getRequestDateTime();
00971       const stdair::Time_T lRequestTime =
00972         lRequestDateTime.time_of_day();
00973       std::cout << std::endl;
00974       // Display help.
00975       std::cout << "Commands: " << std::endl;
00976       std::cout << " help" << "\t\t" << "Display this help" << std::endl;
00977       std::cout << " quit" << "\t\t" << "Quit the application" << std::endl;
00978       std::cout << " list" << "\t\t"
00979                 << "List all the fare rule O&Ds and the corresponding date ranges
      " << std::endl;
00980       std::cout << " display" << "\t"
00981                 << "Display all fare rules for an O&D and a departure date. \n" <
      < "\t\t"
00982                 << "If no parameters specified or wrong list of parameters, defau
      lt values are used: \n"<< "\t\t"
00983                 << "      display " <<  lInteractiveOrigin << " "
00984                 << lInteractiveDestination << " "
00985                 << lInteractiveDepartureDate << std::endl;
00986       std::cout << " price" << "\t\t"
00987                 << "Price the travel solution corresponding to a booking request.
       \n" << "\t\t"
00988                 << "If no parameters specified or wrong list of parameters, defau
      lt value are used: \n" << "\t\t"
00989                 << "      price "
00990                 << lParsedKey._airlineCode << " "
00991                 << lParsedKey._flightNumber << " "
00992                 << lParsedKey._departureDate << " "
00993                 << lParsedKey._boardingPoint << " "
00994                 << lParsedKey._offPoint << " "
00995                 << lParsedKey._boardingTime << " "
```

```
00996                 << lRequestDateTime.date() << " "
00997                 << lRequestTime.hours() << ":" << lRequestTime.minutes() << " "
00998                 << lInteractiveBookingRequest.getPOS() << " "
00999                 << lInteractiveBookingRequest.getBookingChannel() << " "
01000                 << lInteractiveBookingRequest.getTripType() << " "
01001                 << lInteractiveBookingRequest.getStayDuration() << std::endl;
01002       std::cout << std::endl;
01003       break;
01004     }
01005
01006       // ////////////////////////////// Quit /////////////////////////
01007     case Command_T::QUIT: {
01008       break;
01009     }
01010
01011       // ////////////////////////////// List /////////////////////////
01012     case Command_T::LIST: {
01013
01014       // Get the list of all airport pairs and date ranges for which
01015       // there are fares available.
01016       const std::string& lAirportPairDateListStr =
01017         simfqtService.list ();
01018
01019       if (lAirportPairDateListStr.empty() == false) {
01020         std::cout << lAirportPairDateListStr << std::endl;
01021         STDAIR_LOG_DEBUG (lAirportPairDateListStr);
01022
01023       } else {
01024         std::cerr << "There is no result for airport pairs and date ranges."
01025                   << "Make sure your input file is not empty."
01026                   << std::endl;
01027       }
01028
01029       break;
01030     }
01031
01032       // ////////////////////////////// Display /////////////////////////
01033     case Command_T::DISPLAY: {
01034
01035       // If no parameters are entered by the user, keep default ones.
01036       if (lTokenListByReadline.empty() == true) {
01037
01038         std::cout << "No parameters specified. Default paramaters '"
01039                   << lInteractiveOrigin << "-" << lInteractiveDestination
01040                   << "/" << lInteractiveDepartureDate
01041                   << "' are kept."
01042                   << std::endl;
01043
01044       } else {
01045
01046         // Find the best match corresponding to the given parameters.
01047         TokenList_T lTokenList =
01048           extractTokenListForOriDestDate (lTokenListByReadline);
01049
01050         // Parse the best match, and give default values in case the
01051         // user does not specify all the parameters or does not
01052         // specify some of them correctly.
01053         parseFlightDateKey (lTokenList, lInteractiveOrigin,
01054                             lInteractiveDestination, lInteractiveDepartureDate);
01055
01056       }
01057
```

```
01058       // Check whether the selected airportpair-date is valid:
01059       // i.e. if there are corresponding fare rules.
01060       const bool isAirportPairDateValid =
01061         simfqtService.check (lInteractiveOrigin, lInteractiveDestination,
01062                              lInteractiveDepartureDate);
01063
01064       if (isAirportPairDateValid == false) {
01065         std::ostringstream oFDKStr;
01066         oFDKStr << "The airport pair/departure date: "
01067                 << lInteractiveOrigin << "-" << lInteractiveDestination
01068                 << "/" << lInteractiveDepartureDate
01069                 << " does not correpond to any fare rule.\n"
01070                 << "Make sure it exists with the 'list' command.";
01071         std::cout << oFDKStr.str() << std::endl;
01072         STDAIR_LOG_ERROR (oFDKStr.str());
01073
01074         break;
01075       }
01076
01077       // Display the list of corresponding fare rules.
01078       std::cout << "List of fare rules for "
01079                 << lInteractiveOrigin << "-"
01080                 << lInteractiveDestination << "/"
01081                 << lInteractiveDepartureDate
01082                 << std::endl;
01083
01084       const std::string& lFareRuleListStr =
01085         simfqtService.csvDisplay (lInteractiveOrigin,
01086                                   lInteractiveDestination,
01087                                   lInteractiveDepartureDate);
01088
01089       assert (lFareRuleListStr.empty() == false);
01090       std::cout << lFareRuleListStr << std::endl;
01091       STDAIR_LOG_DEBUG (lFareRuleListStr);
01092
01093       break;
01094     }
01095
01096       // ////////////////////////////// Price ////////////////////////
01097     case Command_T::PRICE: {
01098
01099       // If no parameters are entered by the user, keep default ones.
01100       if (lTokenListByReadline.empty() == true) {
01101
01102         lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01103
01104         std::cout << "No parameters specified. Default booking request and defaul
      t travel solution list are kept.\n"
01105                   << "Booking request: << "
01106                   << lInteractiveBookingRequest.display()  << " >>"
01107                   << "\nTravel Solution: << "
01108                   << lInteractiveTravelSolution.display() << " >>"
01109                   << "\n********** \n"
01110                   << "Fare quote"
01111                   << "\n**********"
01112                 << std::endl;
01113
01114         // Try to fareQuote the sample list of travel solutions.
01115         try {
01116         simfqtService.quotePrices (lInteractiveBookingRequest,
01117                                    lInteractiveTravelSolutionList);
01118         } catch (stdair::ObjectNotFoundException& E) {
```

```
01119           std::cerr << "The given travel solution corresponding to the given book
      ing request can not be priced.\n"
01120                     << E.what()
01121                     << std::endl;
01122           break;
01123         }
01124       } else {
01125
01126         // Find the best match corresponding to the given parameters.
01127         TokenList_T lTokenList =
01128           extractTokenListForTSAndBR (lTokenListByReadline);
01129
01130         // Parse the best match, and give default values in case the
01131         // user does not specify all the parameters or does not
01132         // specify some of them correctly.
01133         stdair::BookingRequestStruct lFinalBookingRequest
01134           = parseTravelSolutionAndBookingRequestKey (lTokenList,
01135                                                      lInteractiveTravelSolutionLi
      st,
01136                                                      lInteractiveBookingRequest);

01137
01138
01139         assert (lInteractiveTravelSolutionList.size() >= 1);
01140         lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01141
01142         // Display the booking request and the first travel solution
01143         // before pricing.
01144         std::cout << "Booking request: << "
01145                   << lFinalBookingRequest.display()  << " >>"
01146                   << "\nTravel Solution: << "
01147                   << lInteractiveTravelSolution.display() << " >>"
01148                   << "\n********** \n"
01149                   << "Fare quote"
01150                   << "\n**********"
01151                 << std::endl;
01152
01153         // Try to fareQuote the sample list of travel solutions.
01154         try {
01155           simfqtService.quotePrices (lFinalBookingRequest,
01156                                      lInteractiveTravelSolutionList);
01157         } catch (stdair::ObjectNotFoundException& E) {
01158           std::cerr << "The given travel solution corresponding to the given book
      ing request can not be priced.\n"
01159                     << E.what()
01160                     << std::endl;
01161           break;
01162         }
01163       }
01164
01165       // Display the first travel solution after pricing:
01166       // one or more fare option have been added.
01167       lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01168       std::cout << "Travel Solution: << "
01169                 << lInteractiveTravelSolution.display() << " >>\n"
01170                 << std::endl;
01171
01172       break;
01173     }
01174
01175       // ////////////////////////// Default / No value ///////////////////////
01176     case Command_T::NOP: {
```

```
01177       break;
01178     }
01179     case Command_T::LAST_VALUE:
01180     default: {
01181       // DEBUG
01182       std::ostringstream oStr;
01183       oStr << "The '" << lUserInput << "' command is not yet understood.\n"
01184            << "Type help to have more information." << std::endl;
01185
01186       STDAIR_LOG_DEBUG (oStr.str());
01187       std::cout << oStr.str() << std::endl;
01188     }
01189     }
01190   }
01191
01192   // DEBUG
01193   STDAIR_LOG_DEBUG ("End of the session. Exiting.");
01194   std::cout << "End of the session. Exiting." << std::endl;
01195
01196   // Close the Log outputFile
01197   logOutputFile.close();
01198
01199   /*
01200     Note: as that program is not intended to be run on a server in
01201     production, it is better not to catch the exceptions. When it
01202     happens (that an exception is thrown), that way we get the
01203     call stack.
01204   */
01205
01206   return 0;
01207 }
```

25.61 test/simfqt/FQTTestSuite.cpp File Reference

25.62 FQTTestSuite.cpp

```
00001
00005 // ////////////////////////////////////////////////////////////////////
00006 // Import section
00007 // ////////////////////////////////////////////////////////////////////
00008 // STL
00009 #include <sstream>
00010 #include <fstream>
00011 #include <string>
00012 // Boost Unit Test Framework (UTF)
00013 #define BOOST_TEST_DYN_LINK
00014 #define BOOST_TEST_MAIN
00015 #define BOOST_TEST_MODULE FQTTestSuite
00016 #include <boost/test/unit_test.hpp>
00017 // StdAir
00018 #include <stdair/basic/BasLogParams.hpp>
00019 #include <stdair/basic/BasDBParams.hpp>
00020 #include <stdair/basic/BasFileMgr.hpp>
00021 #include <stdair/service/Logger.hpp>
00022 #include <stdair/bom/TravelSolutionStruct.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 // SimFQT
00025 #include <simfqt/SIMFQT_Service.hpp>
00026 #include <simfqt/config/simfqt-paths.hpp>
00027
```

```
00028 namespace boost_utf = boost::unit_test;
00029
00033 struct UnitTestConfig {
00035   UnitTestConfig() {
00036     static std::ofstream _test_log ("FQTTestSuite_utfresults.xml");
00037     boost_utf::unit_test_log.set_stream (_test_log);
00038     boost_utf::unit_test_log.set_format (boost_utf::XML);
00039     boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
00040     //boost_utf::unit_test_log.set_threshold_level (boost_utf::log_successful_tes
      ts);
00041   }
00042
00044   ~UnitTestConfig() {
00045   }
00046 };
00047
00048 // ////////////////////////////////////////////////////////////////////
00052 void testFareQuoterHelper (const unsigned short iTestFlag,
00053                            const stdair::Filename_T iFareInputFilename,
00054                            const bool isBuiltin) {
00055
00056   // Output log File
00057   std::ostringstream oStr;
00058   oStr << "FQTTestSuite_" << iTestFlag << ".log";
00059   const stdair::Filename_T lLogFilename (oStr.str());
00060
00061   // Set the log parameters
00062   std::ofstream logOutputFile;
00063   // Open and clean the log outputfile
00064   logOutputFile.open (lLogFilename.c_str());
00065   logOutputFile.clear();
00066
00067   // Initialise the SimFQT service object
00068   const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
00069                                          logOutputFile);
00070
00071   // Initialise the Simfqt service object
00072   SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00073
00074   // Check wether or not a (CSV) input file should be read
00075   if (isBuiltin == true) {
00076
00077     // Build the default sample BOM tree (filled with fares) for Simfqt
00078     simfqtService.buildSampleBom();
00079
00080   } else {
00081
00082     // Build the BOM tree from parsing the fare input file
00083     SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
00084     simfqtService.parseAndLoad (lFareFilePath);
00085   }
00086
00087   // Build a sample list of travel solutions and a booking request.
00088   stdair::TravelSolutionList_T lTravelSolutionList;
00089   simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00090   stdair::BookingRequestStruct lBookingRequest =
00091     simfqtService.buildBookingRequest();
00092
00093   // Try to fareQuote the sample list of travel solutions
00094   simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00095
00096   // Close the log file
```

```
00097   logOutputFile.close();
00098
00099 }
00100
00101 // /////////////// Main: Unit Test Suite //////////////
00102
00103 // Set the UTF configuration (re-direct the output to a specific file)
00104 BOOST_GLOBAL_FIXTURE (UnitTestConfig);
00105
00106 // Start the test suite
00107 BOOST_AUTO_TEST_SUITE (master_test_suite)
00108
00109
00112 BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {
00113
00114   // Input file name
00115   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv");
00116
00117   // State whether the BOM tree should be built-in or parsed from an input file
00118   const bool isBuiltin = false;
00119
00120   // Try to fareQuote the sample default list of travel solutions
00121   BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin));

00122
00123 }
00124
00129 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {
00130
00131   // Input file name
00132   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError01.cs
      v");
00133
00134   // State whether the BOM tree should be built-in or parsed from an input file
00135   const bool isBuiltin = false;
00136
00137   // Try to fareQuote the sample default list of travel solutions
00138   BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
00139                      SIMFQT::AirportPairNotFoundException);
00140 }
00141
00146 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {
00147
00148   // Input file name
00149   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError02.cs
      v");
00150
00151   // State whether the BOM tree should be built-in or parsed from an input file
00152   const bool isBuiltin = false;
00153
00154   // Try to fareQuote the sample default list of travel solutions
00155   BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
00156                      SIMFQT::PosOrChannelNotFoundException);
00157 }
00158
00163 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {
00164
00165   // Input file name
00166   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError03.cs
      v");
00167
00168   // State whether the BOM tree should be built-in or parsed from an input file
```

```
00169   const bool isBuiltin = false;
00170
00171   // Try to fareQuote the sample default list of travel solutions
00172   BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
00173                      SIMFQT::FlightDateNotFoundException);
00174 }
00175
00180 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {
00181
00182   // Input file name
00183   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError04.cs
      v");
00184
00185   // State whether the BOM tree should be built-in or parsed from an input file
00186   const bool isBuiltin = false;
00187
00188   // Try to fareQuote the sample default list of travel solutions
00189   BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
00190                      SIMFQT::FlightTimeNotFoundException);
00191 }
00192
00197 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {
00198
00199   // Input file name
00200   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError05.cs
      v");
00201
00202   // State whether the BOM tree should be built-in or parsed from an input file
00203   const bool isBuiltin = false;
00204
00205   // Try to fareQuote the sample default list of travel solutions
00206   BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
00207                      SIMFQT::FeaturesNotFoundException);
00208 }
00209
00214 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {
00215
00216   // Input file name
00217   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError06.cs
      v");
00218
00219   // State whether the BOM tree should be built-in or parsed from an input file
00220   const bool isBuiltin = false;
00221
00222   // Try to fareQuote the sample default list of travel solutions
00223   BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
00224                      SIMFQT::AirlineNotFoundException);
00225 }
00226
00231 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {
00232
00233   // Input file name
00234   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError07.cs
      v");
00235
00236   // State whether the BOM tree should be built-in or parsed from an input file
00237   const bool isBuiltin = false;
00238
00239   // Try to fareQuote the sample default list of travel solutions
00240   BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
00241                      SIMFQT::FareFileParsingFailedException);
00242 }
```

```
00243
00248 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {
00249
00250   // Input file name
00251   const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/missingFile.cs
      v");
00252
00253   // State whether the BOM tree should be built-in or parsed from an input file
00254   const bool isBuiltin = false;
00255
00256   // Try to fareQuote the sample default list of travel solutions
00257   BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
00258                      SIMFQT::FareInputFileNotFoundException);
00259 }
00260
00265 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {
00266
00267   // Input file name
00268   const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/ ");
00269
00270   // State whether the BOM tree should be built-in or parsed from an input file
00271   const bool isBuiltin = true;
00272
00273   // Try to fareQuote the sample default list of travel solutions
00274   BOOST_CHECK_NO_THROW(testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin));

00275 }
00276
00277
00278 // End the test suite
00279 BOOST_AUTO_TEST_SUITE_END()
00280
00281
```

Index