User's Guide

Benchmarking Summarizability Processing in XML Warhouses with Complex Hierarchies

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The program is run with Java NetBeans (JDK 1.7) to generate XML data with complex hierarchies, QBS, and Pedersen queries.

I. Source Code

The source files are organized into directories:

- src/ contains the Java code of the application organized in packages;
- lib/ contains the *.jar files needed for program execution;
- data/ contains XWeB (TPC-H/dbgen) source data files;
- dimensionXML/ contains XWeB dimensions in XML format
- outputDWXML/ is a temporary directory for storing generated fact and dimension XML documents
- PedersenOverheadXML/ stores summarizable XML documents produced before query processing of Pedersen
- outputGrouping/ store XML documents which are the result of QBS and Pedersen grouping

II. Generate complex hierarchy XML data warehouse

1. Open java project XWebCH
2. In XWCH package, double click Run.bat (to run .\XWebCH\src\XWCH\MainForm.java)
3. You will see the form as follow

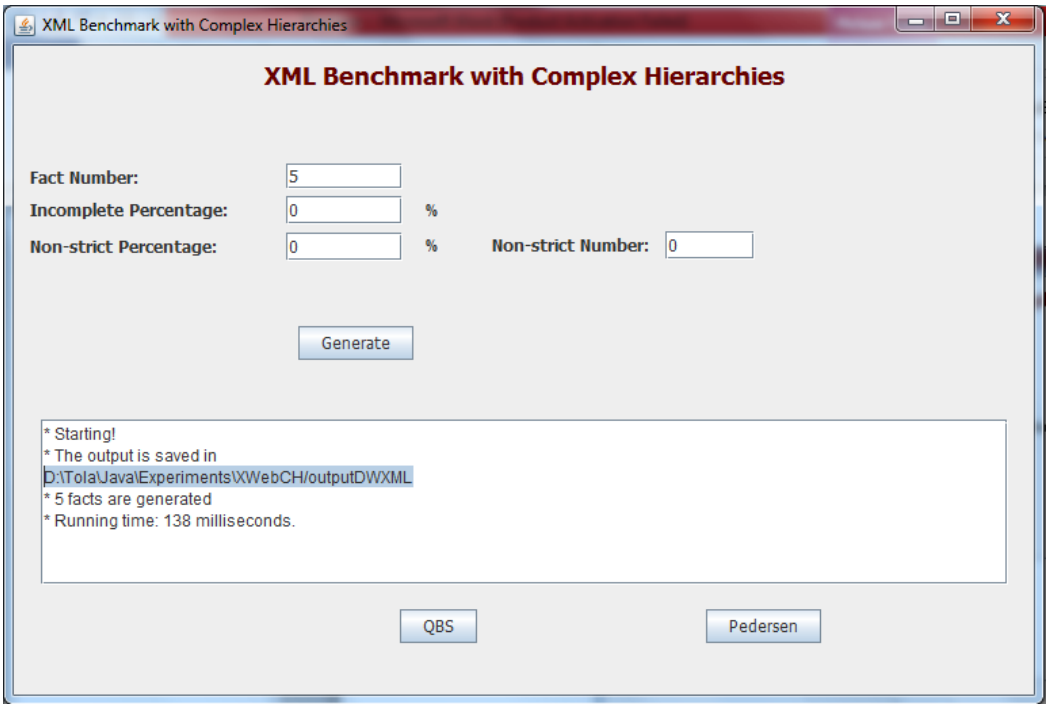
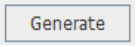
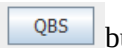


Figure 1. MainForm

4. Set the values of fact number, incomplete percent, non-strict percent, and non-strict number
   Note:
   fact number > 0
   incomplete percentage >= 0
   non-strict percent >=0
   non-strict number >1 if non-strict percent > 0
5. Click on 

button to generate complex hierarchy XML Data warehouse which is stored in the specified directory (.\XWebCH\outputDWXML)

III. **QBS Query**

1. On Figure 1, click on 

button, you will see the window below.

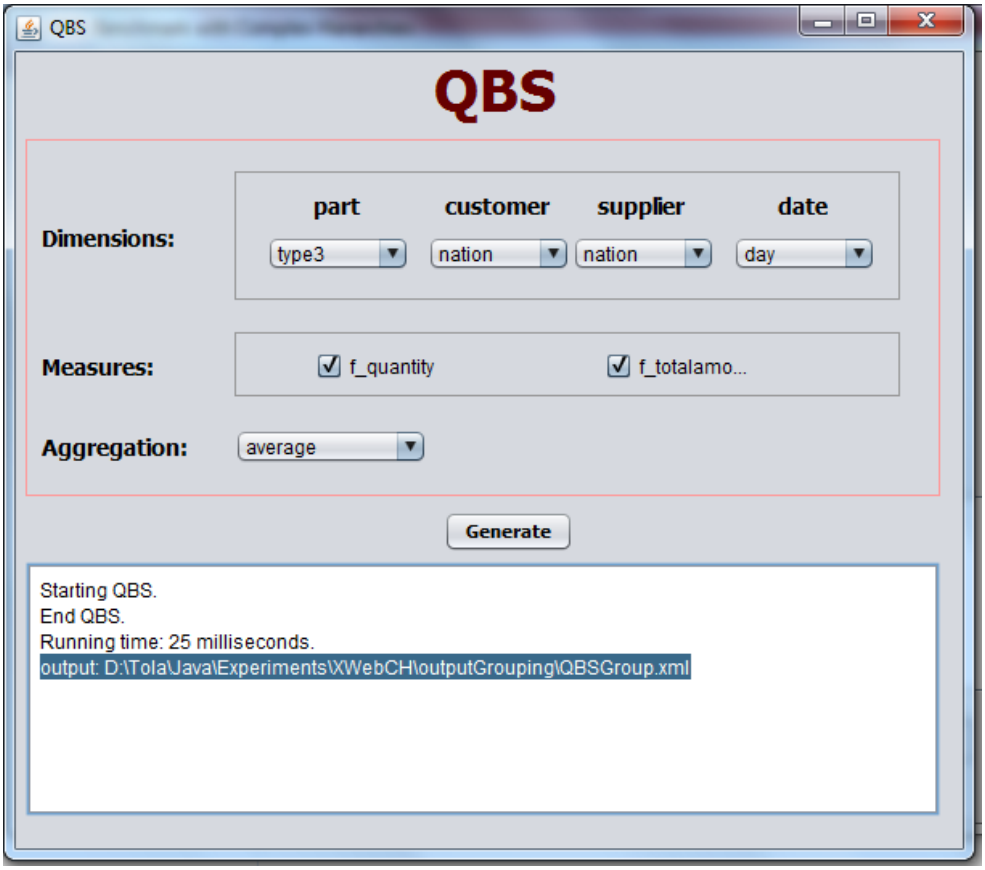
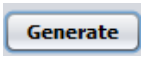


Figure 2. QBS Query

2. In Figure 2, you can make QBS query by specifying:
   a. Dimensions for multidimensional cube
   b. Measures
   c. Aggregation

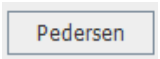
   Note: at least one dimension and one measure are selected

   The current version, for ease of use, we use Java GUI for specifying the query. In the future we will include XQuery

3. Click on 

button to run the query
4. The output will be an XML document whose file location is specified in the output text (.\XWebCH\outputGrouping\QBSGrouping.xml).

IV. **Pedersen Query**

1. On Figure 1, click on 

button, you will see the window below.

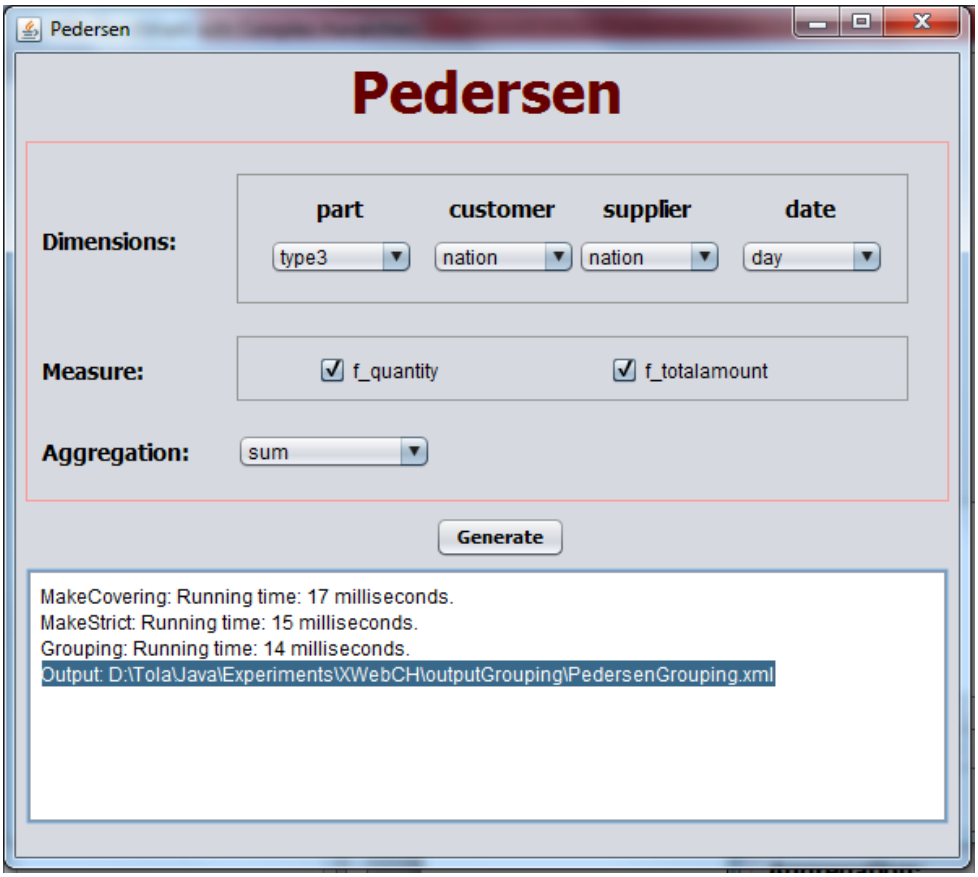
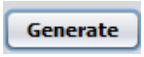


Figure 3. Pedersen Query

2. In Figure 3, you can make Pedersen query by specifying:
    a. Dimensions for multidimensional cube
    b. Measures
    c. Aggregation

    Note: at least one dimension and one measure are selected

    The current version, for ease of use, we use Java GUI for specifying the query. In the future we will include XQuery

3. Click on 

button to run the query
4. The output will be an XML document whose file location is specified in the output text (.\XWebCH\outputGrouping\PedersenGrouping.xml).

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