Demonstration of the DataSource module

On this page you will find usefull information, how to use DataSource module. This module is one of several modules of the **LISp-Miner** tool for knowledge discovery in databases (KDD, data mining).

The DataSource module (LMDataSource.exe file) is to:

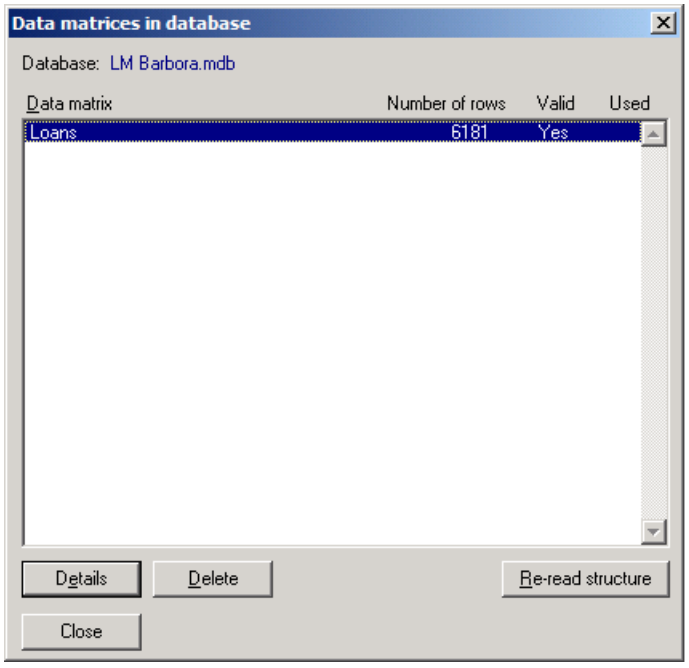
- mark the primary key,
- attributes creation,
- simple data exploration and data browsing.

In this demonstration we assume we have created ODBC datasource "LMexample" as we have created it in how to start.

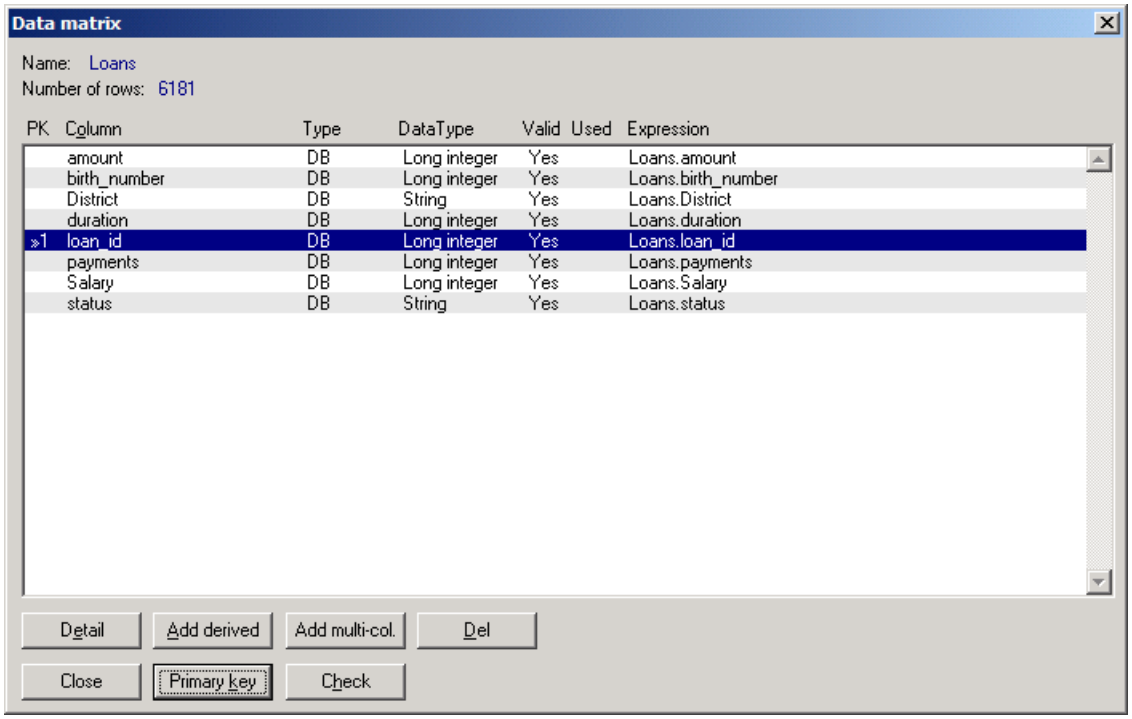
Mark and Check the Primary Key

Start the **LMDataSource.exe** file. In the window LISp-Miner working database select our **LMexample.mdb Metabase** and click on the **Select** button. Now, you got main window of the LMDataSource subsystem (KDD procedure). There is very simple trivial data exploration when you click on *Frequencies* (or *Rows*, *Columns*) button. But our goal is to mine for association rules, so we must use LMDataSource as a tool for attribute creation.

Select *Database|DataMatrices* in the main menu (or use *F5* key). You get this window:



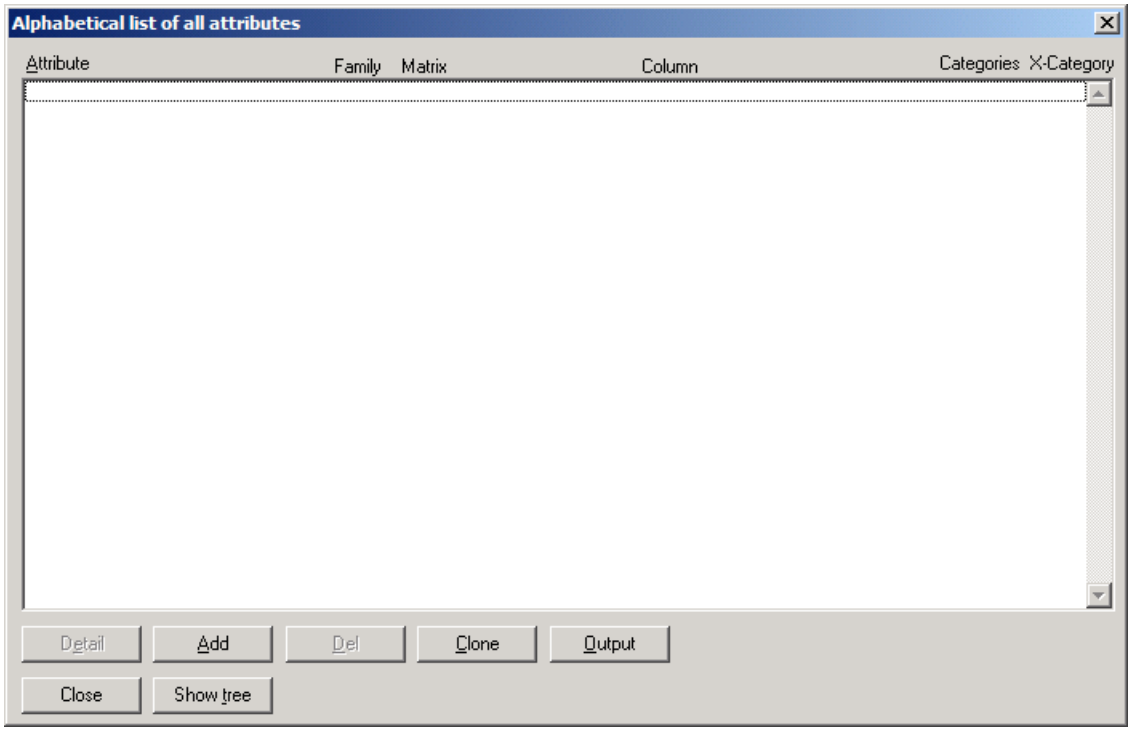
Select *Detail* button. Now, we mark **primary key** of the Loan data matrix: click on the row **loan_id** and then click on the *Primary key* button – primary key is marked:



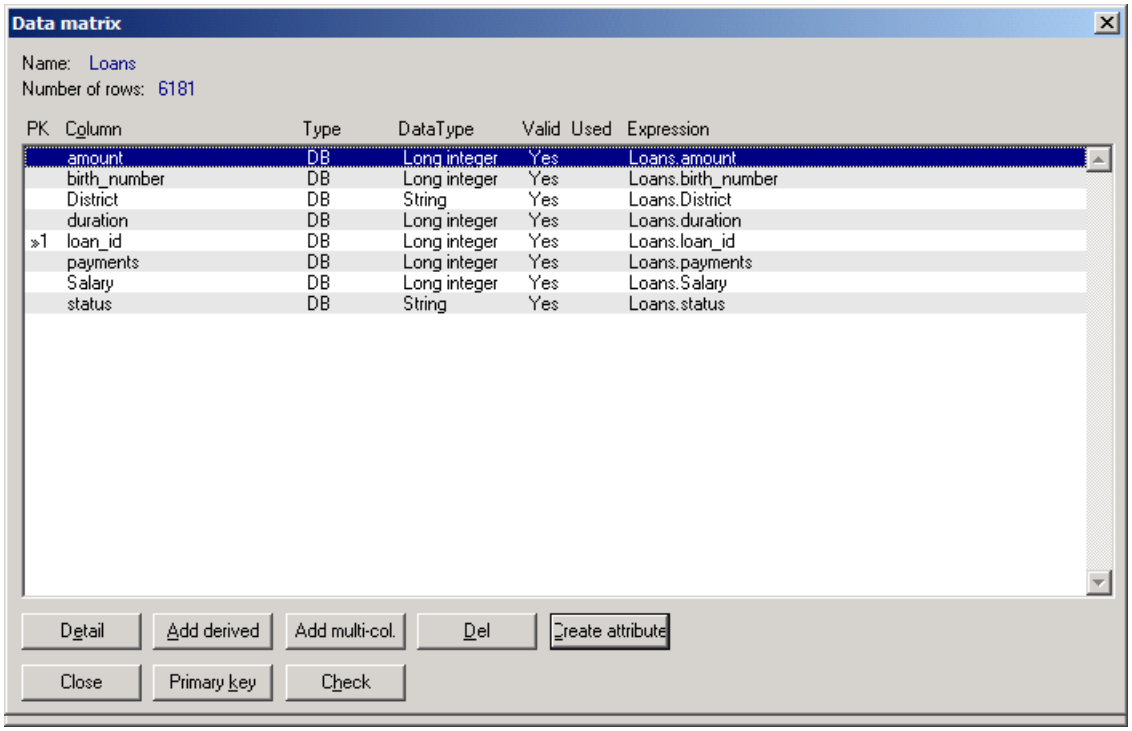
Select *Check* button and confirm the check of the primary key for duplicites. If the check is OK, you can go on. (It is necessary to mark primary key and check it for duplicites before you start tho process of attribute preparing. The primary key can be composed of one or more data columns.) Close both Data matrix and Data matrices in database windows.

Attributes Creation and Data Exploration

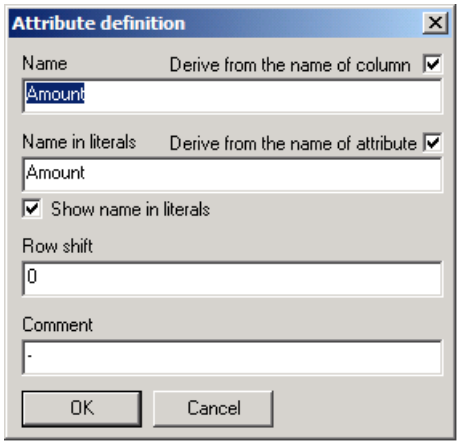
Select *Database|Attributes list* in the main menu (or use *Ctrl+F7* key combination). You get window Alphabetical list of all attributes:



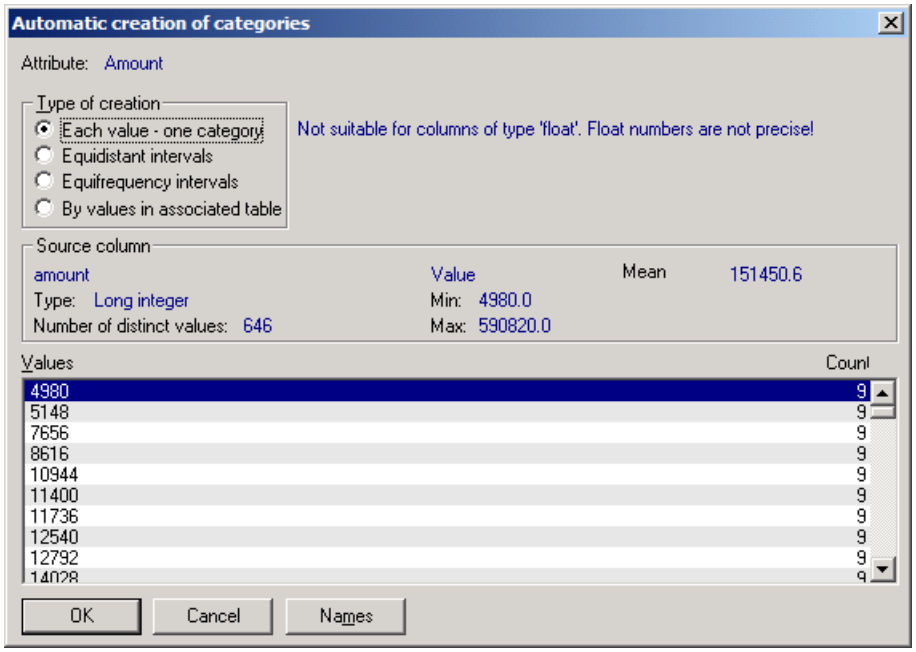
Select *Add* button. You get Select a data matrix… window: Click on *Select* button. You get window Data matrix:



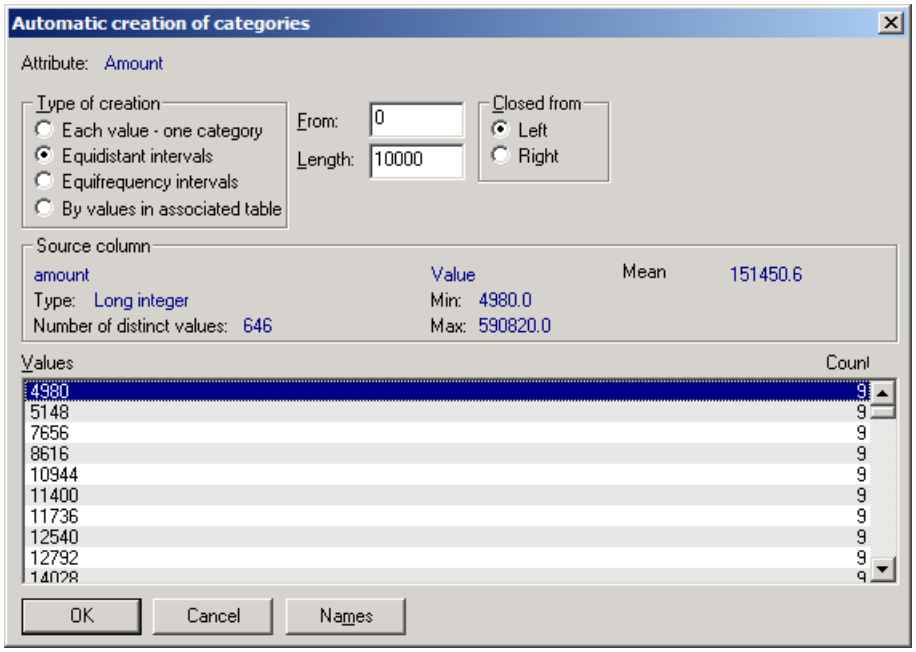
Select first row – "amount" column and then click on *Create attribute* button. You get Attribute definition window:



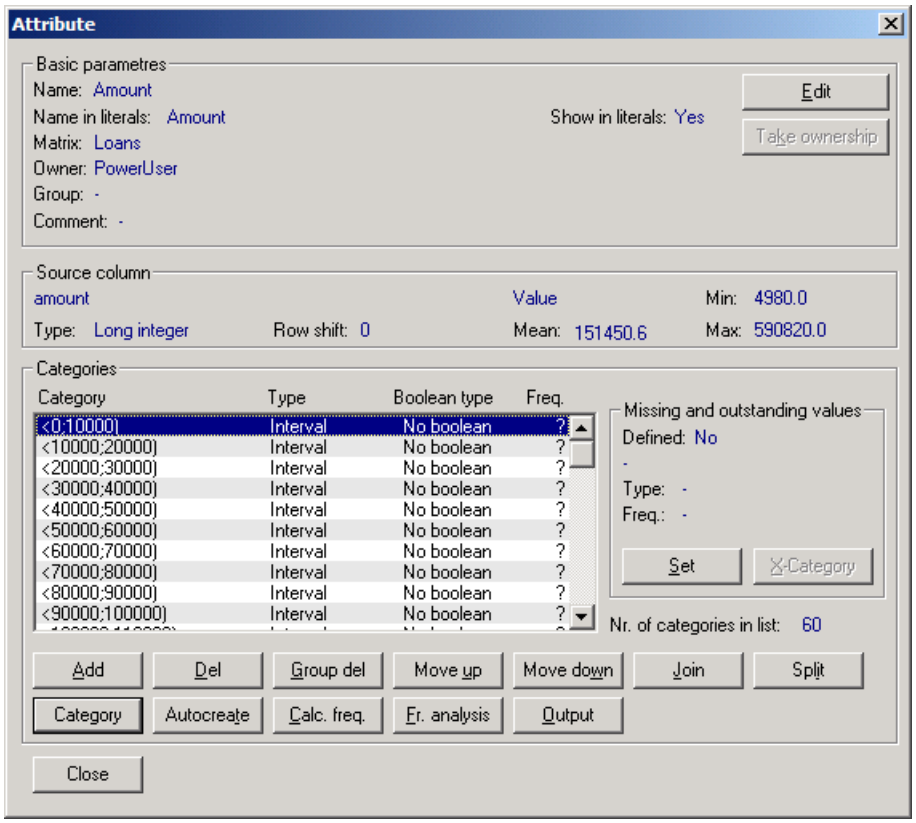
Confirm this Attribute definition by *OK* button. You get Automatic creation of attributes window:



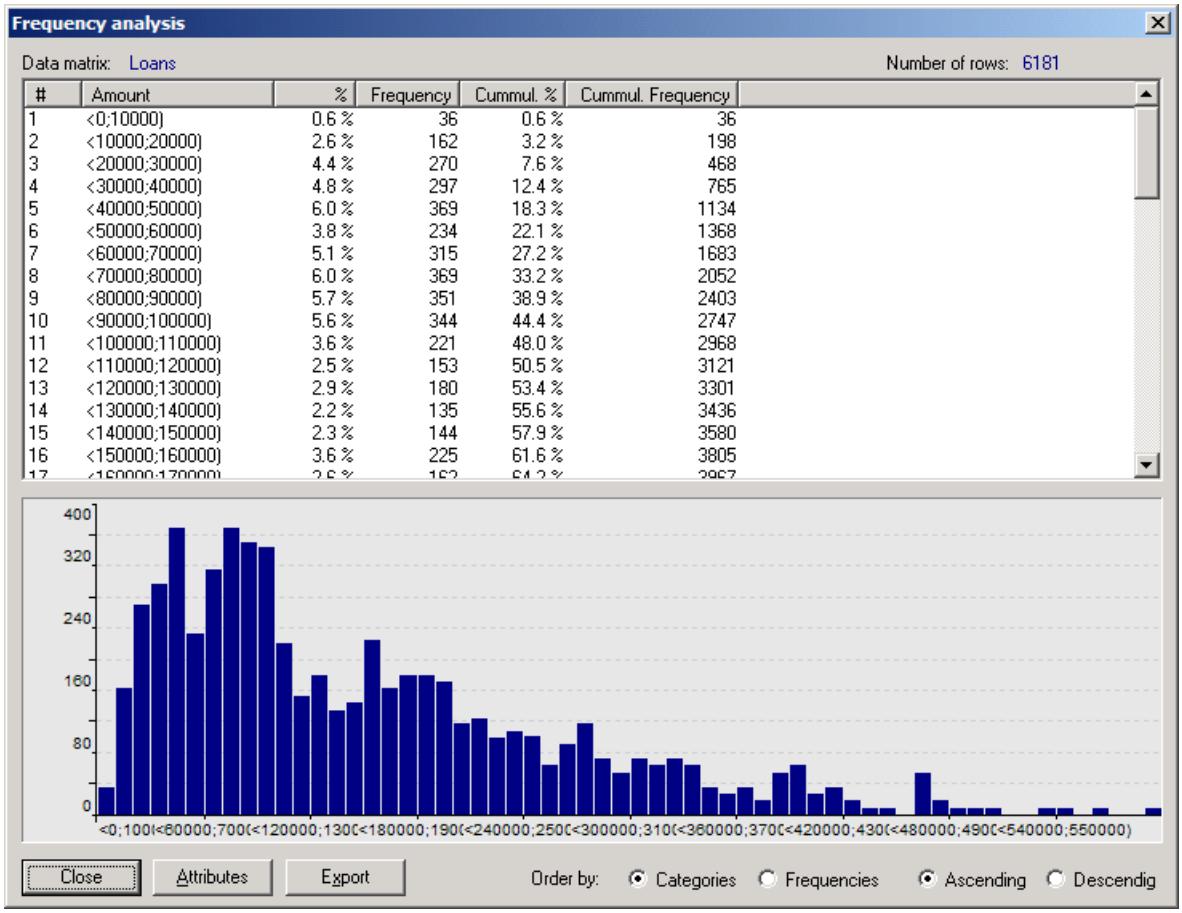
It seems to be reasonable to create equidistant intervals of values of "amount": intervals from 0, length of intervals 10 000:



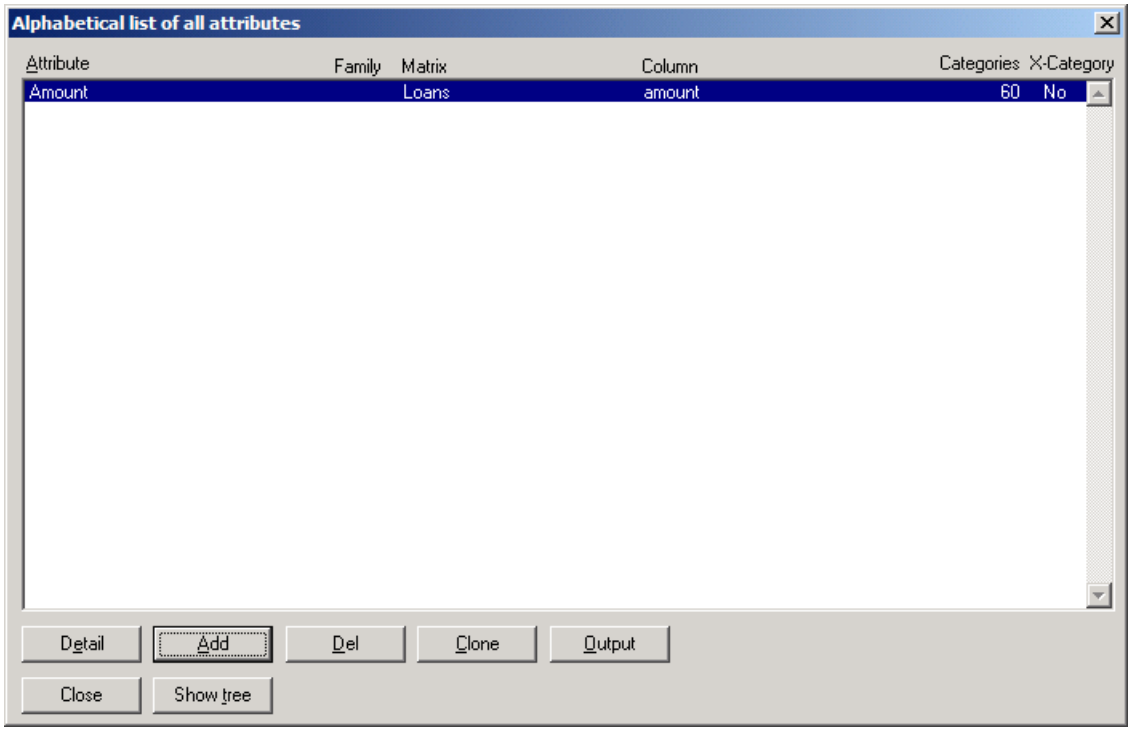
Confirm this creation of the attribute "amount" by *OK* button. You get attribute window:



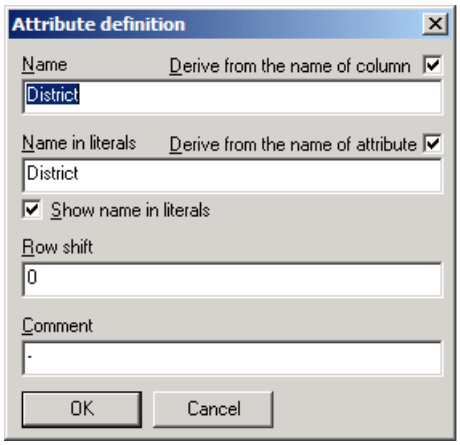
Select *Fr. analysis* button:



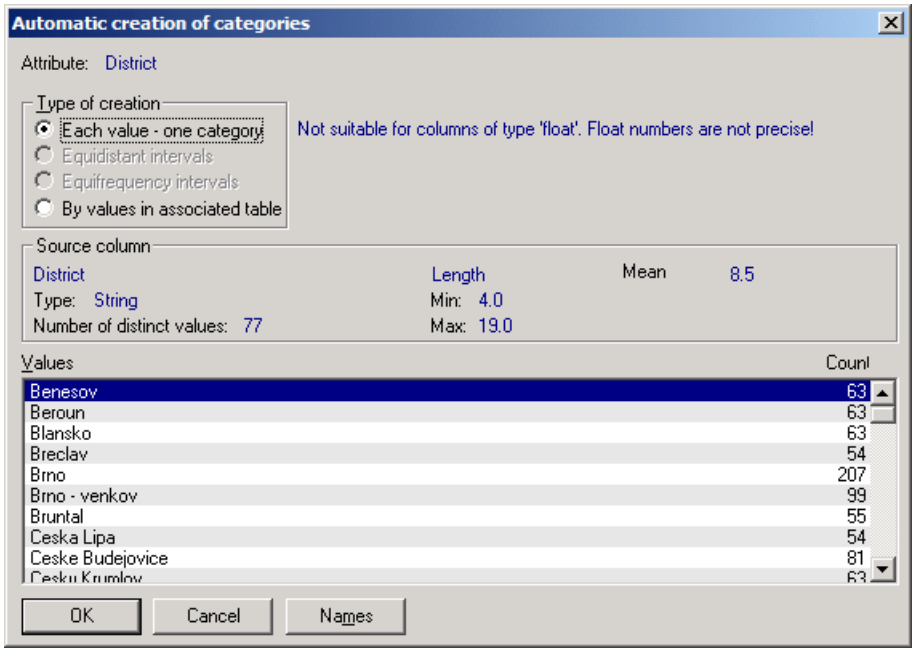
Now you can close the window Frequency analysis. You created first attribute. Close the window, see the alphabetical list of attributes:



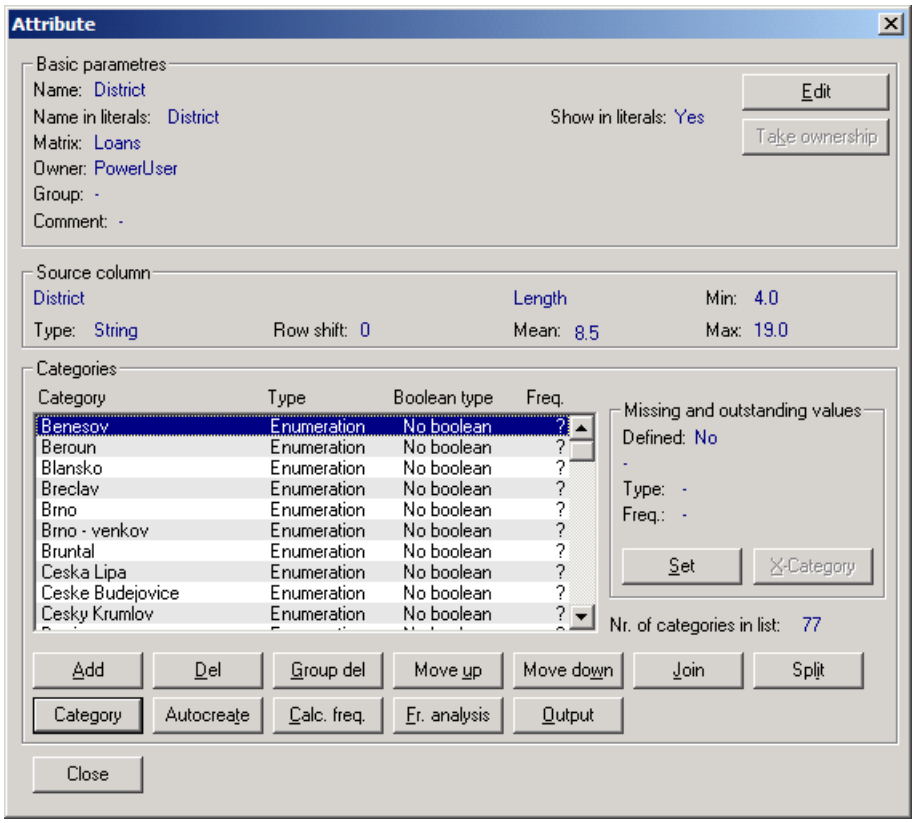
Select *Add* button. You get Select a data matrix… window: Click on *Select* button. You get window Data matrix. Click on "Distric" and then click on *Create attribute* button. You get Attribute definition window:



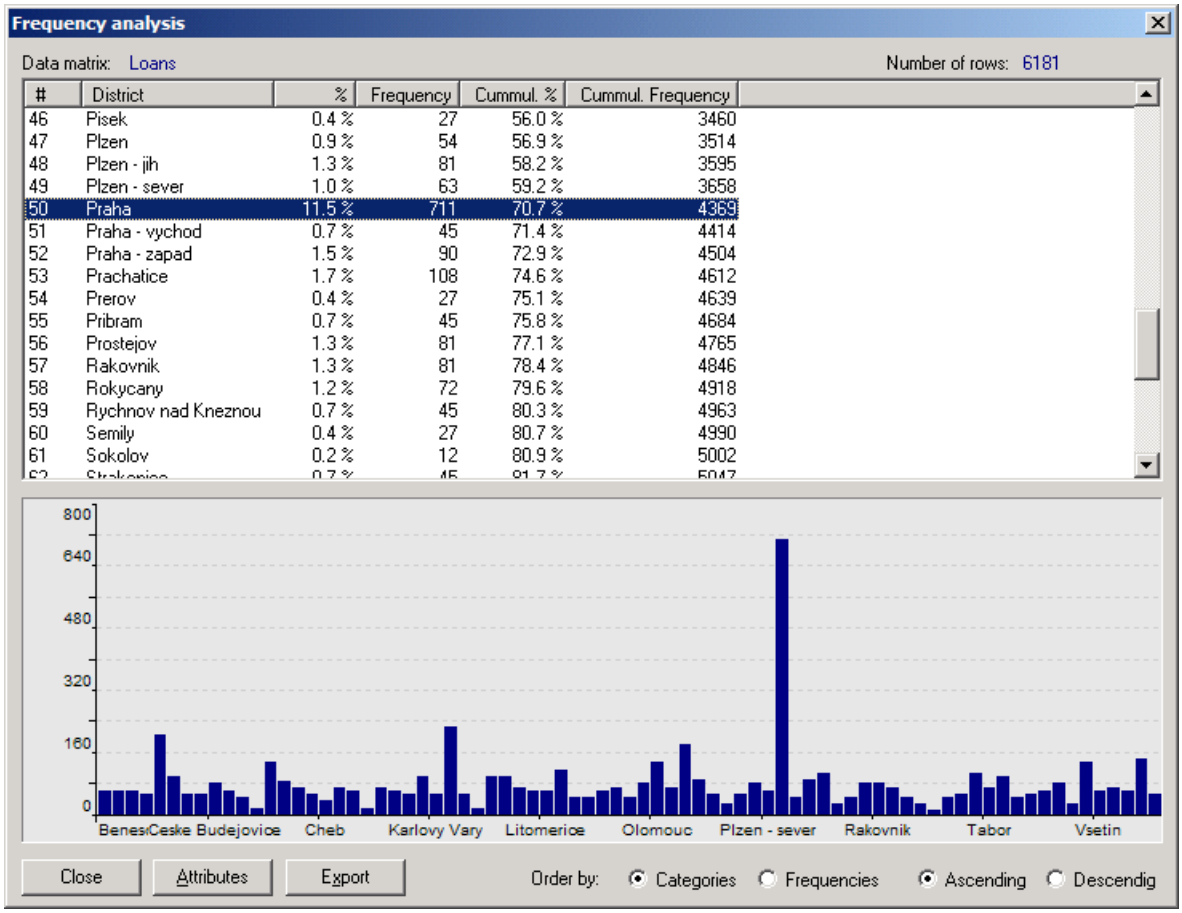
Confirm this attribute definition by *OK* button. You get Automatic creation of categories window:



It is reasonable to confirm this creation of categories by *OK* button. You get Attribute window:



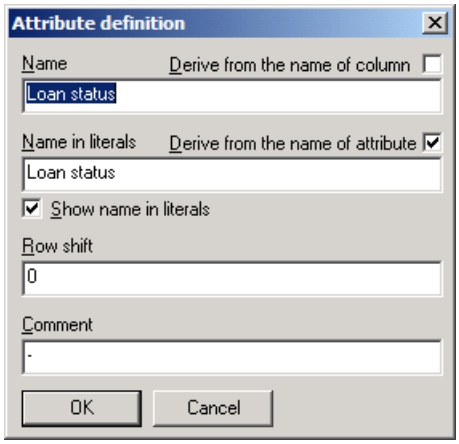
Click on *Fr. analysis* button to get the frequency analysis:



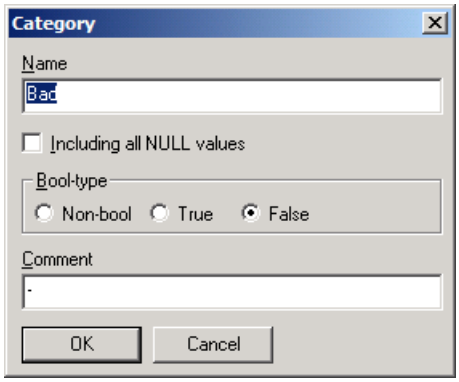
Close the Attribute window. We have created two attributes ” Amount and District.

Select *Add* button. You get Select a data matrix… window: Click on *Select* button. You get window Data matrix. Click on “Duration” and then click on *Create attribute* button. You get Attribute definition window. Confirm this attribute definition by *OK* button. You get Automatic creation of categories window. It is reasonable to confirm this creation of categories by *OK* button. You get Attribute window. As category 12 means, that certain loans should hold 12 months, etc. it could be reasonable to join “12” and “13” categories. Mark both “12” and “13” categories and click on *Join* button. Close Attribute window.

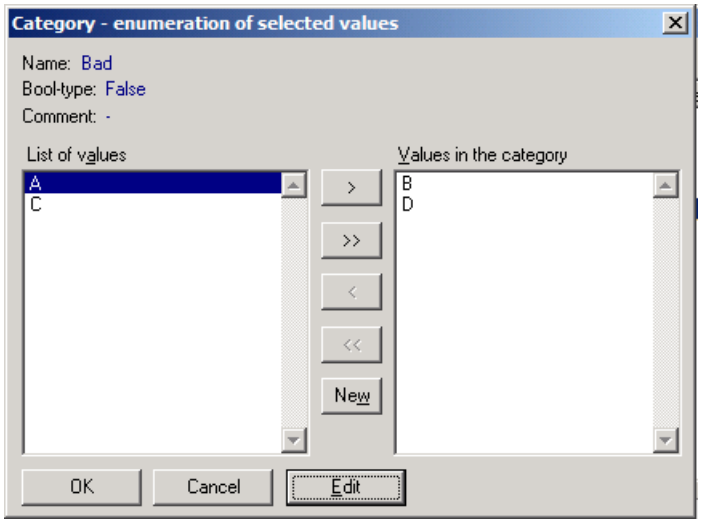
Now we continue by creating fourth attribute. Select *Add* button. You get Select a data matrix… window: Click on *Select* button. You get window Data matrix. Click on “Status” and then click on *Create attribute* button. You get Attribute definition window. You can change the name of the attribute:



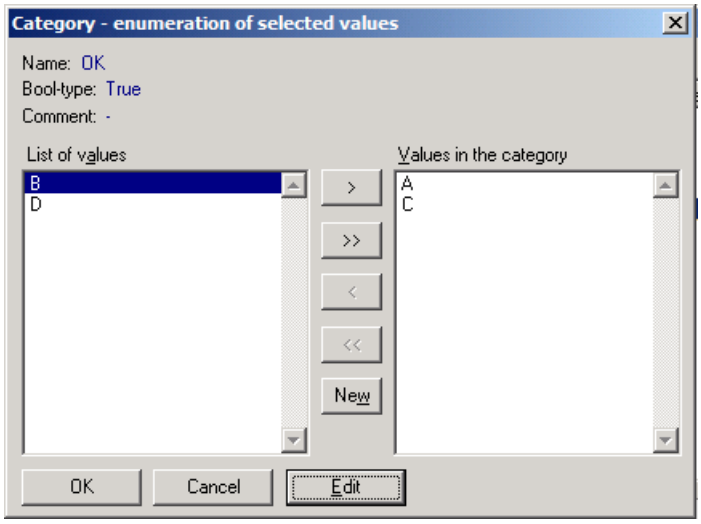
Confirm this attribute definition by *OK* button. You get Automatic creation of categories window. Confirm "Each value – one category" creation by *OK* button. You get Attribute window. As categories "B" and "D" means, that ceratin loan is bad, it is reasonable to join these categories: mark both "B" and "D" and click on *Join* button. Then click on the new join-category. Then click on *Category* button, you get window Category – enumeration of selected categories. Then click on *Edit* button and change the name and mark Bool-type as false:



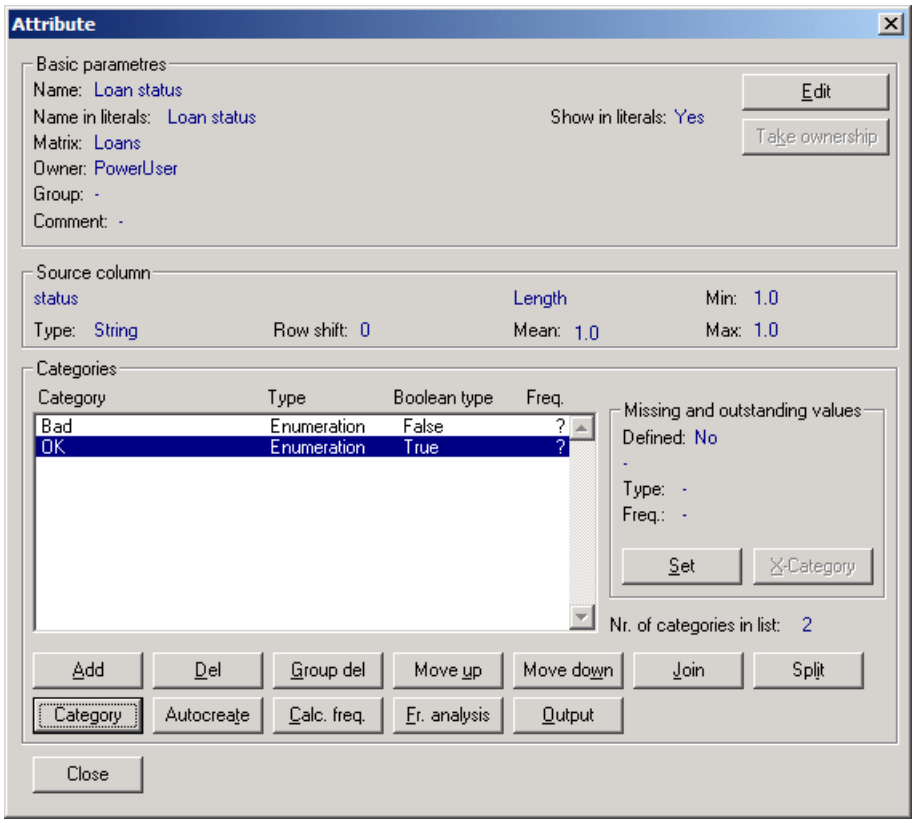
Close window Category, you get back the window Category – enumeration of selected categories:



Now mark both “A” and “C” categories and then click on *Category* button. Then click on *Edit* button and change name of the category: OK and mark Bool-type as true. Then click on *OK* button, you get window:



Click on *OK* button, you get window Attribute:



You can watch frequecy analysis by clicking on *Fr. analysis* button (finish it by *Close* button). Close the window Attribute by *Close* button.

Data exploration & browsing

Select *Analysis* in the main menu to get several simple data exploration (analysis):

- *Data Exploration* output is table of attribute-values for each item of the data matrix
- *Frequency Histogram* output is classical histogram for selected attributes
- *4FT Contingency Table*. You will get "Four-fold contingency table analysis" window. Use *Antecedent*, *Succedent*, *Condition* buttons to set up Antecedent, Succedent and Conditions. Values of both all folds of 4-fold table and some characteristic values (e.g. Confidence, support, average difference, etc.) will be counted as output of 4FT Contingency analysis.
- *K×L Contingency Table*. You select two attributes and data matrix to get 3D histogram.
- *Categorized Data Export* is to export of attribute-values for each item of the data matrix

There are *Columns*, *Rows*, *Frequencie* buttons on the main window. Use these buttons to do simple data browsing.