Using Labels in the RelView System*

Institut für Informatik und Praktische Mathematik
Christian-Albrechts-Universität Kiel
Olshausenstraße 40
D-24098 Kiel, Germany

1 Introduction

Since version 6.2 the RelView system provides a mechanism for labeling rows and columns of relations and nodes of graphs. A **label** is simply a piece of text consisting of up to 16 characters, i.e. a RelView identifier.

Labels are mainly used for illustration purposes. Adding labels to rows and/or columns of relations and nodes of graphs often increases the readability and understandability of relations. Labels **do not carry a semantics within the system**. Especially the evaluation of relational terms does not depend on values of labels.

2 Label Sets

Labels are organized in so called "label sets". A label set is simply a named mapping from natural naumbers to labels, i.e. identifiers.

A label set can be defined in an ordinary text file using a special file format. A definition of a label set is of the following form:

$$\begin{array}{rcl} \gg\text{label-set-name}\ll = & \{ & \gg\text{number}\ll\ \gg\text{label}\ll, \\ & & \gg\text{number}\ll\ \gg\text{label}\ll, \\ & & \gg\text{number}\ll\ \gg\text{label}\ll, \\ & & \vdots \\ & & \gg\text{number}\ll\ \gg\text{label}\ll, \\ & & \gg\text{number}\ll\ \gg\text{label}\ll \\ & \} & \end{array}$$

Please note, that the blank between a number and a label acts as a separator. For simplicity, a label cannot contain blanks. The numbers in a label set definition have to be unique but are allowed to appear in any order.

3 Label Files

Label sets are stored in ordinary text files with the file extension ".label". In the following we call these files "label files" for short. One label file can contain an arbitrary number of definitions of label sets.

*WWW: http://www.informatik.uni-kiel.de/~progsys/relview.shtml

A label file, more exactly spoken the label sets stored in the file, can be loaded into the RelView system by using the filechooser, which can be opened by pressing the push button "FILES" in the first button row of the main window. Please select the filter "*.label" by selecting this item from the filter list.

4 Label Directory

The current label sets which are loaded into the system are displayed in the label directory, a window which can be opened by pressing the push button "LABEL" in the second button row of the main window. The label directory window contains two scroll lists:

- The first scroll list shows the names of the label sets loaded into the system. A label set can be selected by clicking onto the name of the set.
- The second scroll list displays the selected label set itself. The set is printed as a list of items of the following form:

  Number : Label

5 Attaching Labels to Relations

The rows and/or the columns of a relation can be labeled with different label sets. You can select the desired label sets by choosing the menu item "LABEL REL" from the submenu which is reachable via the menu entry "LABEL" in the pop up menu opened by pressing the right mouse button in the relation editor window. Please note, that all menu actions are invoked with the **right** mouse button.

Choosing the sketched menu item opens a pop up window with two input fields for entering the names of label sets for rows and columns.

After pressing the push button "LABEL" in this pop up, the rows and/or the columns of the relation in the relation editor are attached with the labels of the selected label sets.

Please note: The number of labels in a label set which should be used for labeling the rows or columns of a relation must not exceed the number of rows resp. columns of that relation.

6 Removing Labels from a Relation

The labels attached to the rows and/or columns of a relation can be removed by selecting the menu item "UNLABEL REL" in the submenu reachable via the menu entry "LABEL" in the pop up menu of the relation editor window.

7 Labeling Graphs

Graphs, more exactly spoken the nodes of a graph, cannot be labeled directly. Instead you can label the homogeneous relation belonging to the graph. Then the labels added to the relation are attached to the node of the graph automatically.

Please note: If you want to label the nodes of a graph, the rows **and** the columns of the corresponding relation have to be labeled with the **same label set**.

8 Miscellaneous

In no cases labels or the informations about the labeling of a relation or a graph are written into a xrv-file or a ddd-file.

9 Examples of Label Sets

In this section we show some examples of label sets for illustration purposes:

```
SimpleSet = { 1 row_1,
              2 row_2,
              3 row_3,
              4 row_4
            }

Conditions = { 1 Thinking_P1,
               2 Thinking_P2,
               3 Thinking_P3,
               4 Eating_P1,
               5 Eating_P2,
               6 Eating_P3
             }

SetWithGaps = { 3 column_3,
                11 a_prime_number,
                7 a_nice_label,
                22 the_last_label
              }
```