

Example

In this part we will show an example of **4ftTask**. We will use data of fictitious bank *Barbora* where are 6181 objects. For our analysis we will use these attributes divided into partial cedents:

Client with two attributes:

- *Age* – with 5 categories (intervals with step 10 years),
- *Sex* – with 2 categories (male, female).

Social Status with two attributes:

- *Salary* – with 3 categories,
- *District* – with 77 categories.

Loan with three attributes:

- *Amount* – the amount of borrowed money in thousands of Czech crowns divided into 6 categories (intervals),
- *Repayment* – repayment in thousands of Czech crowns with 10 categories,
- *Duration* – length of the loan with 5 categories.

Loan Quality with one attribute:

- *Loan* – with 2 categories

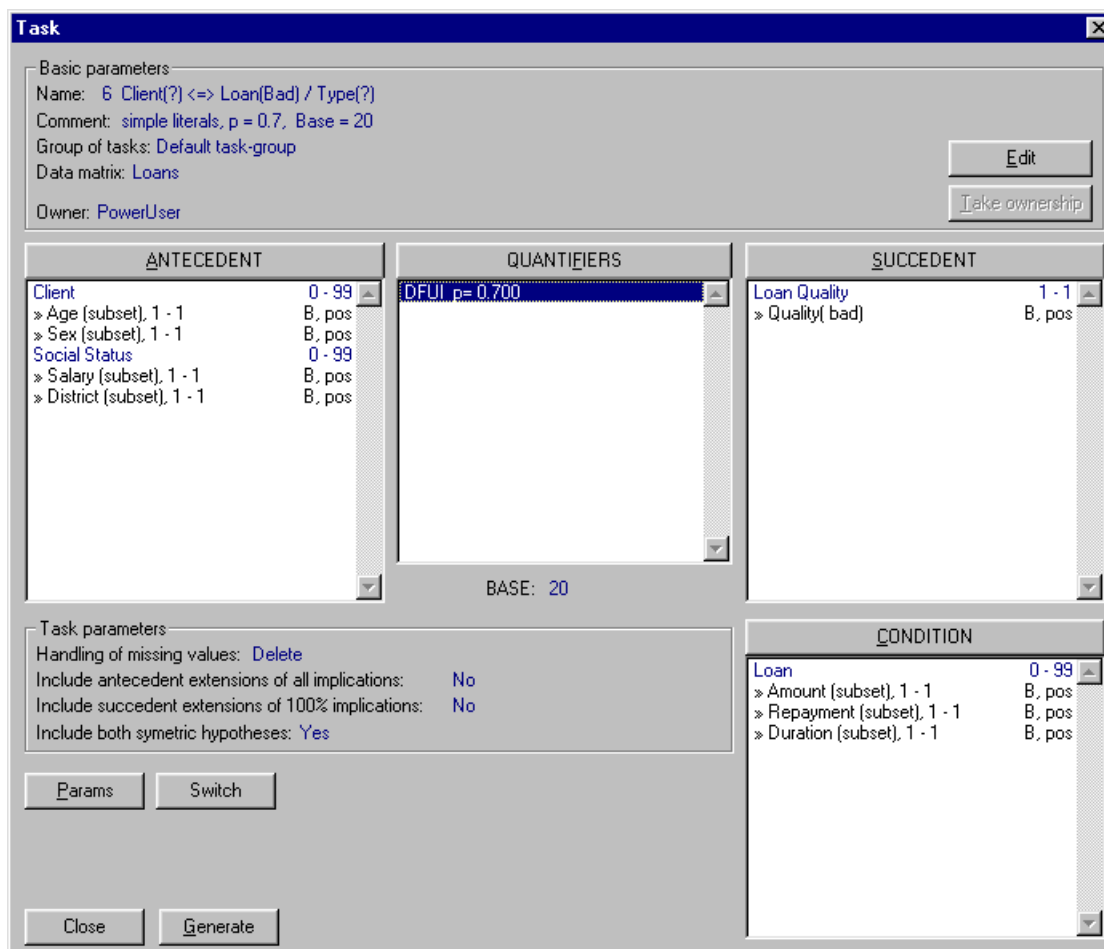


Figure 1: Input parameters

We solve the task *What combinations of characteristics of a client (antecedent) lead to good loan*. We can write this task as an association rule in the form:

$$\text{Client} \wedge \text{Social Status} \wedge \text{Region} \Leftrightarrow \text{Loan Quality}(\text{good}) / \text{Loan}$$

Figure 1 shows our task in general. Here can be seen that as quantifier is used *Double Founded Implication* with p value 0.700. Parameter *Base* is set 20. Antecedent consists of two partial cedents (*Client*, *Social Status*). These partial cedents for antecedent can be seen in detail on next three figures. From each figure can be seen all necessary parameters as length of partial cedents and all parameters for each attribute.

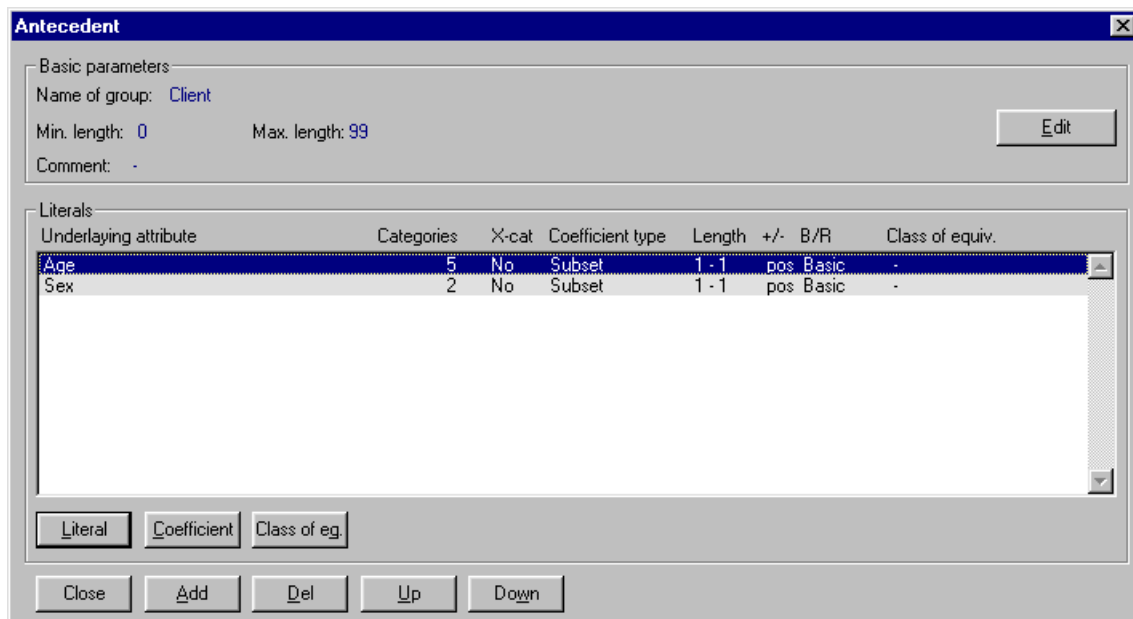


Figure 2: Partial antecedent – Client

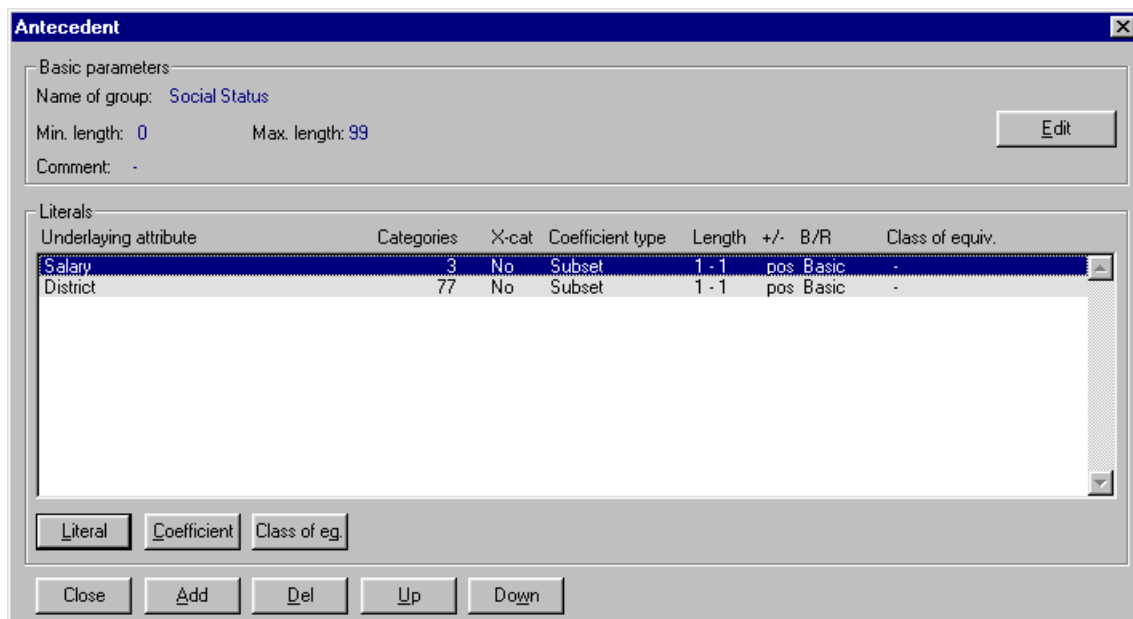


Figure 3: Partial antecedent – Social Status

Succedent consist of one partial cedent. This partial cedent is on the next figure. Here can be seen that we will examine only one category of the attribute *Loan Quality – good*

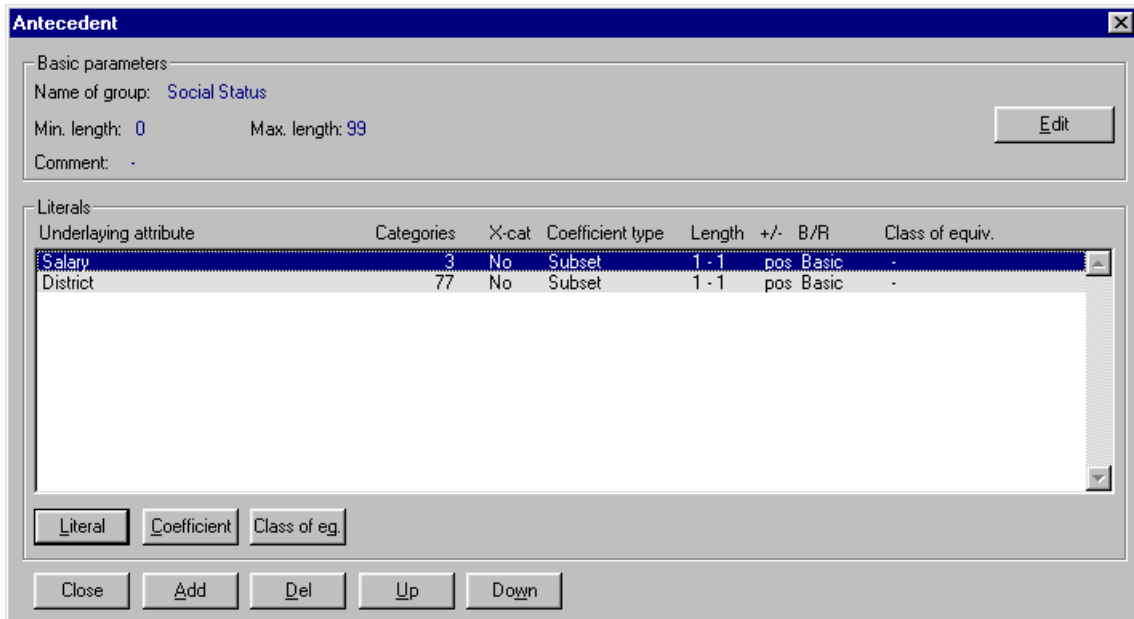


Figure 4: Partial succedent – Loan Quality

Condition consists again of one partial cedent (see next figure).

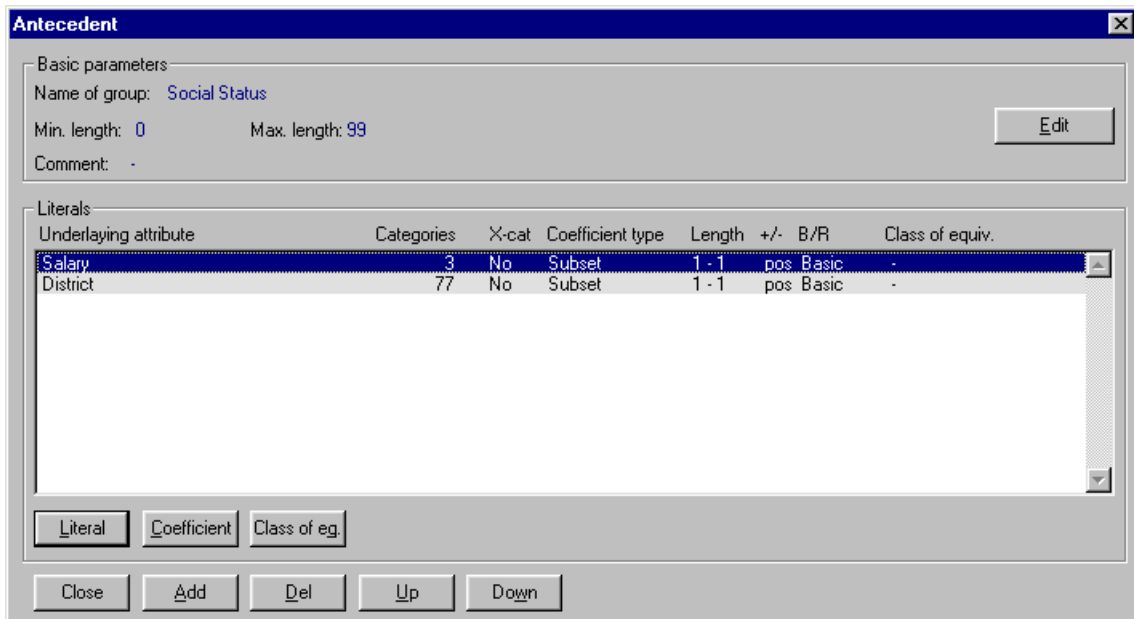


Figure 5: Partial condition – Loan

After generating this task we get 10 hypothesis and one of them is displayed on fig. 6. This hypothesis says that *Men with low salary living in Havlickuv Brod with condition that they borrow 100–250 thousands crowns and they have to repay it in 1–2 years are bad borrowers.*

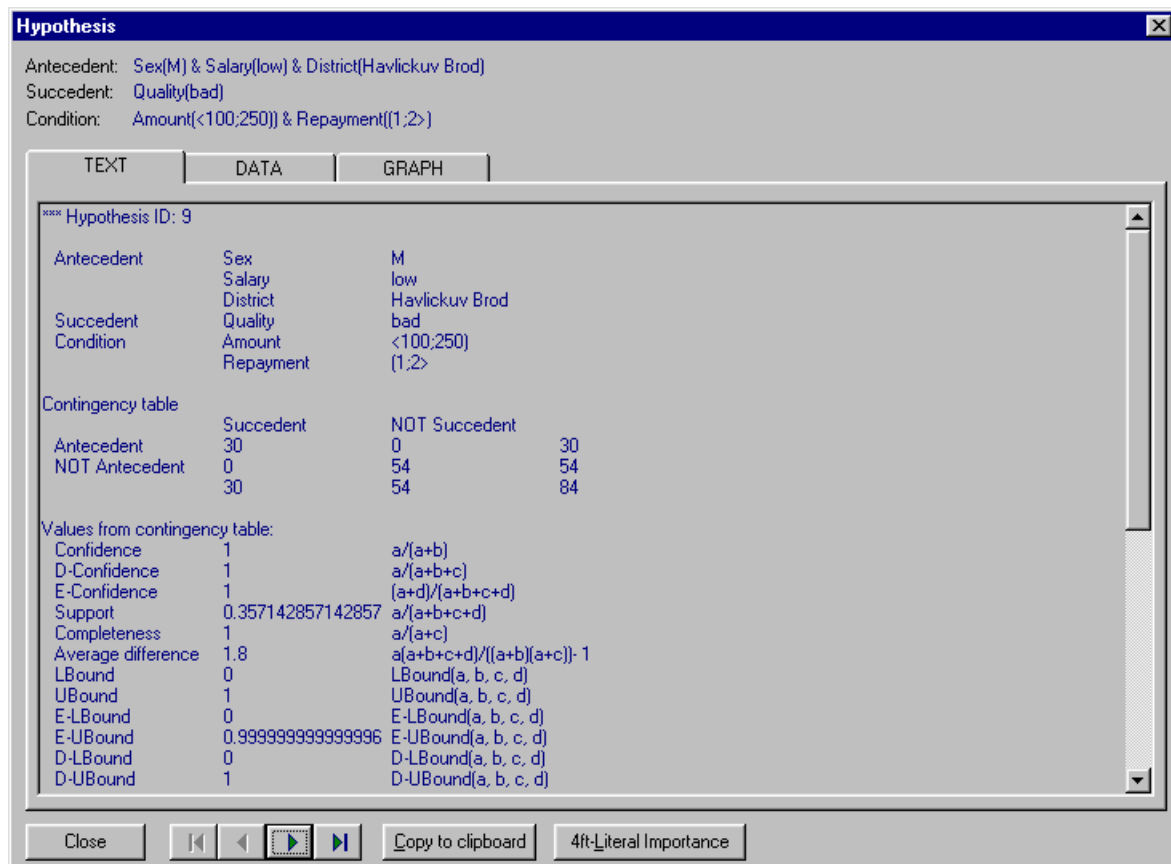


Figure 6: Hypothesis