Data mining

With 4ftTask module
Introduction

- This presentation contains practical example of 4ft task module.
- See [4ft-Miner needed theory](#) tutorial for basic theory understanding.
4ft-Miner detailed architecture view

- **Metabase**
  - Definition of the data matrix
  - Definition of the relevant rules set
  - The set of simple rules

- **Data Source**
- **4ft-Miner**
- **4ftTask**
- **4ftResult**

- Analyzed data (read only)
Table of content

- Starting module
- Setting up the task
- Hypothesis generation
- Results of the task
- Changing parameters
Starting module, step 1

You can start 4ft-Task module from LMAdmin module by selecting „Add task“. Then select 4ft-Miner procedure.
Starting module, step 2

Select proper table

Then you can edit name of the task and add some comments
Starting module, step 2

Task is now ready in the task list.
Starting module, step 3

By clicking the Task Description, ... button, you will enter the task setting screen.
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- Starting module
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Setting up the task

We must set up following:

- **Antecedent**
- Succedent
- Quantifier

We can set up:

- Condition (not included in this tutorial)
Setting antecedent, step 1

Select antecedent
Setting antecedent, step 2

In this window, we can add partial cedent (Add button) or just click Cedent to proceed.
Setting antecedent, step 2
Setting antecedent, step 3

Now select attributes, which will be in antecedent. In our example its Age and District.
Setting antecedent, step 3

For each selected attribute there is a following windows for the literal option.
Setting antecedent, step 3

Let's set the literals as follows:

**Age**: Interval, length 1-2

**District**: Subset
Setting antecedent, step 4

We are concerned about Age and District to act together, so we must also change the length of antecedent to 2-2. Click the Edit button.
Setting antecedent, step 4

And set the Min. and Max. Length to 2.
Setting up the task

We must set up following:

- Antecedent
- **Succedent**
- Quantifier

We can set up:

- Condition (not included in this tutorial)
Setting succedent

- Setting up the succedent is exactly same as antecedent.
- In our example, succedent will have on literal, Status with coefficient type „One category“ and category „Bad“.

![Literal window with settings for Status attribute]
Setting succedent
Setting up the task

We must set up following:

- Antecedent
- Succedent
- **Quantifier**

We can set up:

- Condition (not included in this tutorial)
Setting quantifier

There are two default quantifiers, base and founded implication. We can let the default setting at this time.
Setting up the task

We must set up following:

- Antecedent
- Succedent
- Quantifier

We can set up:

- **Condition**
Setting condition

- Setting up the condition is also same as antecedent and succedent.
- In our example, condition will have one literal, Salary with coefficient type „One category" and category „Very high“. 
Setting condition

- As in antecedent, we must edit the length of Condition. We have only one literal there and we want to be covered up in the task – we choose the length 1-1.
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Starting the task

- We set up all necessary components to run the data mining task.
- We can run the task by Generate button.
Starting the task

Task in progress...
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Results of the task

After the task is finished, this informational window appears. There are several things to concern:

- Antecedent, succedent
- Condition
- Quantifiers
- Number of verifications and number of hypotheses

![Image showing the window with data and highlighted items](image-url)
Results of the task

Zero hypothesis indicates that there is a need of changing quantifier’s parameters of the task*.  

* For the tips about parameters setting, see the Notions and Tips tutorial.
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Changing the quantifier’s parameters

Default parameters are as follows – BASE quantifier $p=5.000$ and founded implication (FUI) $p=0.900$.

We can change those parameters by clicking the Quantifiers button.
Changing the quantifier’s parameters

In the following window there is a list of quantifiers. We change parameters by clicking the Quantifier button. Now we can change values of parameter.
Changing the quantifier`s parameters

Lets change BASE p to 50 (absolute value) a FUI to p=0.500.

We can regenerate task and see how the result is changed.
Results of the task

Now we have 23 verifications and 12 hypotheses.