Alpha Algorithm Implementation

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Business Intelligence II

Group 03

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1. Approach

1.1. Language,Tools and libraries

Alpha Miner was implemented with Python. As a development environment we have chosen *Google Colab* since it was also more convenient for the collaboration.

For reading XES files we used **read_xes()** method from *PM4PY*.

For generating a visual representation of Petri-Net we used *Snakes*.

The general approach, as also seen in the code, was to correctly read the log file and identify temporal dependencies. As the first step we spotted start and end tasks and afterwards created sets of 4 types of dependencies and used it as a base for generating our petri-net.

1.2. Challenges

The implementation is unfortunately not correct and needs further fine-tuning. As a base for generation of Petri net we currently use the set of causal relations, which is not right and also does not allow to differentiate between the kinds of splits.

We will try to further adjust the implementation for the presentation for our own learning purposes.

1.3. How to run

Code can be run by pressing a “run” button in Google Colab. It is very straightforward and all the libraries will also be installed on the fly.

1.4. Team work

We have not separated tasks in a certain way, but rather were meeting up and learning/ implementing together.