

Advanced Process Mining

Summer term 2020

Exercise sheet 2

4D of Quality • DFG • Heuristic Miner

Exercise 1: Four dimensions of quality

Given the following event log, discover three process models that fulfil the following quality properties:

- | | | | |
|-------------------------|------------------------|-----------------------------|-------------------------|
| a) fitness: high | precision: high | generalisation: low | simplicity: low |
| b) fitness: low | precision: high | generalisation: low | simplicity: high |
| c) fitness: high | precision: low | generalisation: high | simplicity: high |

#	Trace
342	abdfh
200	abefh
101	acfh
62	acfg
55	abdfg
17	abefg
16	abeficfg
13	acficfg
8	abefibdfibcfh
7	acficficficfg

Exercise 2: Directly Follows Graph

#	Trace
342	abdfh
200	abefh
101	acfh
62	acfg
55	abdfg
17	abefg
16	abeficfg
13	acficfg
8	abefibdfibcfh
7	acficficficfg
1	bcdh

- What appropriate filtering criteria might be applied on this log?
- Create a Directly-Follows Graph on the following event log

Exercise 3: Heuristic Miner

#	Trace
342	abdfh
200	abefh
101	acfh
62	acfg
55	abdfg
17	abefg
16	abeficfg
13	acficfg
8	abefibdfibcfh
7	acficficficfg
1	bcdh

- Discover a process model from this event log with the Heuristics Miner algorithm
- Is the dependency matrix always symmetrical?
- If you multiply the occurrence of all observed traces by 1000 and the threshold will remain the same at $\Rightarrow_L > 0.95$, does this change the discovered Petri net?