

PODS Final Exam: Theoretical Part

Name: _____
 Student ID: _____

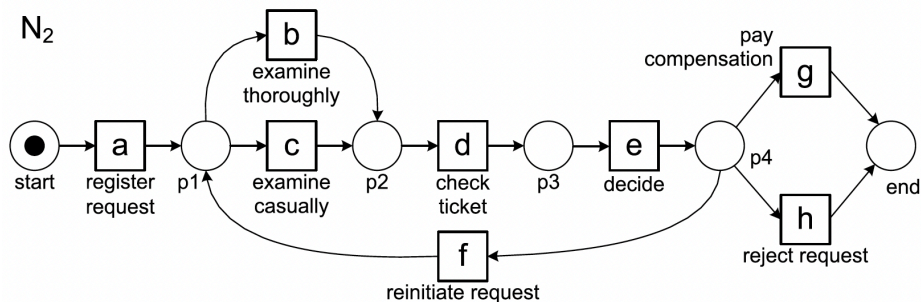
Exercise 1. The following event log was extracted from an enterprise information system:

$$L = [< a, c, d, f >, < b, e, f >, < a, d, c, f >]$$

1. Derive the $\rightarrow L$ relation.
2. Use the eight steps of the α -algorithm to construct the corresponding Petri net and draw the Petri net (delivering all of the intermediate results is not necessary, only the resulting Petri net is required).
3. Give a trace possible according to the discovered model but not (yet) observed in the log.
4. Is the discovered model sound? Explain your answer.

Exercise 2. Consider the following log and Petri net:

$$L = [<a, c, d, e, h>^{25}, <a, b, d, e, g>^{19}, <b, d, e, h>^{10}]$$



1. Compute fitness of the event log with respect to the model using token-replay fitness.
2. Compute an optimal alignment for the trace $<a, b, d, e, f, c, e, g>$, and its corresponding fitness. Use the standard cost function, i.e. log/model moves have cost 1, synchronous moves have cost 0.