

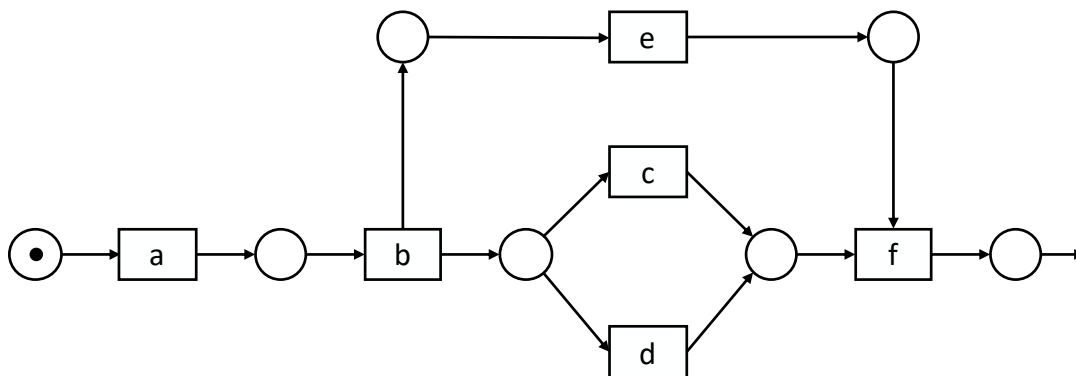
# Advanced Process Mining

Summer term 2020

## Exercise sheet 3

DFG Limitations • DFG Soundness • DFG to PN

### Exercise 1: Limitations of the Directly-Follows Graph

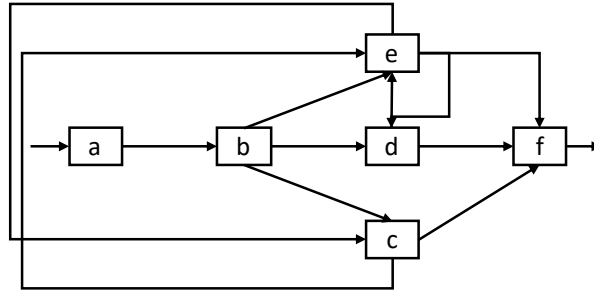


#	Trace
100	abcef
90	abecf
87	abdef
85	abedf
3	abef
1	abcdef

- Draw a Directly-Follows Graph for the event log above.
- Compare the Directly-Follows Graph from a) with the Petri net above. Does the DFG allow for behaviour that is not allowed according to the Petri net?
- Explain the thresholds  $\tau_{var}$ ,  $\tau_{act}$  and  $\tau_{df}$ .

**Exercise 2: Soundness in Directly-Follows Graphs**

- Define soundness in DFG in a non-formal way.
- How can a sound DFG be turned into an unsound DFG?

**Exercise 3: Transformation from DFG to PN**

Transform the DFG above into a Petri net. Model each transition as a combination of start and end event.