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Business Process Mining

Practice 4: Automated Process Discovery

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Exercise 1: Discovery of a Repair Process

Consider the log of a device repair process available at: https://courses.cs.ut.ee/2022/pm/spring/uploads/Main/repairExample.csv.zip

Note: This log is sufficiently simple that you can visualize 100% of arcs and nodes.

1. A case is “completed” if the “Archive repair” task has been performed. Are there cases that have not yet completed (or for which the completion has not been recorded in the system)?

2. Is there any rework in this process based on the process map (identify at least one short-loop and one cycle)? Is the existence of rework confirmed in the BPMN map?

3. Analyze the handoff map to understand who is involved in this process and who hands work to whom? Are there any potential bottlenecks in terms of resources?
Exercise 2: Discovery of a hospital treatment process

Consider the following event log of a process for treatment of patients with Sepsis infection in a Dutch hospital:

1. Describe the most frequent paths in this process (case variants).
2. What is/are the differences between Release A and other types of patient releases (e.g., Release B, C, etc.)?
3. Which parts of the process get repeated? What are the most frequent loops?
Exercise 3: Discovery of a manufacturing process

Consider the following event log of a manufacturing process: https://courses.cs.ut.ee/2022/pm/spring/uploads/Main/manufacturingProcess.csv.zip

1. How many cases are there in this process? How many case variants are there? What do these two numbers imply?

2. Which are the most frequent activities? If you had to sketch this process to your manager, on the “back of a napkin”, using a boxes-and-arrows diagram with at most 7 boxes, how would you draw it?
   - Hint: Try to abstract away some of the nodes using the Nodes slider.
   - Note: Q.C. stands for quality control.

3. Which tasks are re-worked the most?

4. Looking at the process map, try to answer the following question: If you had to preprocess this event log in order to make it easier to understand, what would you do during preprocessing?