



UNIVERSITY OF TARTU



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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:

<http://tinyurl.com/repairLogs>

Analyze this log using both the process map view and then the BPMN view. Note: This log is sufficiently simple that you can visualize 100% of arcs and nodes.

1. Is there any rework in this process? If so, where?
2. 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)?
3. Analyze the handoff map to understand who is involved in this process and who hands work to whom.

## 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:

<https://www.dropbox.com/s/s8rqx4gtptm6h2h/Sepsis%20Cases%20-%20Event%20Log.csv.zip?dl=1>

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 at a factory: <https://data.4tu.nl/ndownloader/files/24045434>
  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 the process that is being executed 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? 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?