Assignment #4 - Analysing Log data
Discrete Mathematics

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Log format

A log entry should contain the following:

level Information, Warning, Error

system System id

instance Instance id

action Action id

timestamp Time of the event

1 Create a dynamic analyser

Create a Finite State Automaton, that can handle log entries from a running application (system). The automaton should be able hold states for a number of running instances (Use case scenarios). The automaton should be able to monitor the following

- is the action legal according to the present state.
- is any instance stuck at a non-final (non-accepting) state.
- give a list of the running instances.

2 Create a Finite State Generator

Create an application that can create a Finite State Automaton to use in the analyser 1. The generator should take regular expression, and a list of actions (the alphabet) with max times as input.

Example: A(B|C)*D

A Login, 100

B List items, 50

C Edit item, 500

D Logout, 200

Tips:

- use the `regex-to-nfa.pdf` and slides for inspiration.
- template project can be found here: `https://github.com/datsoftlyngby/soft2018fall-dm-teaching-material.git`

Hand in

A link to the github repository. In groups on peergrade by Monday March 22nd no later than 08:30