CS112 (LFA) - Projects Lab 1

February 2022

Exercise 1. *(1p) Implement a library/program in a programming language of your choosing to load and validate a DFA input file of the format presented in the Appendix.*

$dfa\_parser\_engine.py \quad dfa\_config\_file$

Exercise 2. *(1p) Implement a library/program in a programming language of your choosing to test acceptance of a DFA - loaded from a DFA config file.*

$dfa\_acceptance\_engine.py \quad dfa\_config\_file \ <word\_to\_test>$

Appendix

DFA input file must be of the following format:

```
#
# comment lines (skip them)
#
Sigma:
    letter1
    letter2
    ...
End
#
# comment lines (skip them)
#
States:
    state1
    state2
    state3,F
    ...
    stateK,S
    ...
End
#
# comment lines (skip them)
#
Transitions:
    stateX,letterY,stateZ
    stateX,letterY,stateZ
    ...
End
```

Sections can be in any order. By validation we ask to check that transition section has valid states (first and third word) and valid letters (word two), and also test for determinism. Note that states can be succeeded by "F", "S", both or nothing. "S" symbol can succeed only one state.