Lab4 – Finite Automata

Github link:
https://github.com/teodoraarsene/Formal-Languages-and-Compiler-Design/tree/main/labs/labs1234
The FiniteAutomata class processes the finite_automata.in file and computes the corresponding finite automata. After that it checks if the automata is valid (with the method validate()) and given a sequnce it checks if it is accepted by the automata (with the method is_accepted()).

EBNF FA

DIGIT = '0' | '1' | '2' | '3' | '4' | '5' | '6' | '7' | '8' | '9'

LETTER = 'a' | 'b' | ... | 'z' | 'A' | 'B' | ... | 'Z'

SYMBOL = "+" | "-" | "*" | "/" | "(" | ")" | "<" | ">" | "{" | "}"

FA = STATES"\n"ALPHABET"\n"INITIAL_STATE"\n"FINAL_STATE"\n"TRANSITIONS

STATES = "Q = " LETTER " " {LETTER " "}

ALPHABET = "E = " (LETTER | SYMBOL) " " {(LETTER | SYMBOL) " "}

FINAL_STATES = "F = " LETTER " " {LETTER " "}

TRANSITIONS = "S = \n" "(" LETTER "," (LETTER | SYMBOL) ") ->" (LETTER | SYMBOL) "\n"
{"(" LETTER "," (LETTER | SYMBOL) ") ->" (LETTER | SYMBOL) "\n"}