Documentation FA

The FA class is a finite automation which implements operations on an automaton read from a file. The file for the automaton contains the states, alphabet, transitions, initial state and final states (out states). The states, alphabet, transitions and final states are kept in separate lists.

Operations:

- init() – reads the file and identifies the states, alphabet, final states, initial state, transitions; throws Exception if the file is not in the correct form

- printListOfString(listname: String, list: String[]) – prints a list in a specific format

- printStates(), printAlphabet(), printOutputStates() – wrapper methods for printing the corresponding lists

- printInitialState() – display the initial state

- printTransitions() – prints the transitions of the finite automaton

- checkAccepted(word: String): Boolean – checks if the given string is accepted by the FA (starting from the initial state we reach a final state)

Transition

This class is used for representing a transition. It has 3 fields: from, to and label. A Transition has the form (from, to, label)

non_zero_digit = 1|2| .. |9 digit = 0|1|..|9

number = non_zero_digit{digit} letter = a|b|..|z|A|B..|Z character = letter | digit

firstLine = "states" "=" "{" {character} {"," character} "}" secondLine = “initial_state””=”{character}

thirdLine = "out_states" "=" "{" {character} {"," character} "}"

fourthLine = "alphabet" "=" "{" {character} {"," character} "}"

triple = "(" {character} "," {character} "," {character} ")"

fifthLine = "transitions" "=" "{" triple {";" triple} "}"

inputFile = firstLine "\n" secondLine "\n" thirdLine "\n" fourthLine "\n" fifth