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)
- getNextAccepted(word: String): String – get the substring of the input word that is accepted by the FA

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" fifthLine