Lab4 Radu Ceaca 932/1

Link to git: https://github.com/raduceaca1234/Formal-Languages-and-Compiler-Design/tree/main/Lab4FLCD

Write a program that:

1. Reads the elements of a FA (from file)

2. Displays the elements of a finite automata, using a menu: the set of states, the alphabet, all the transitions, the set of final states.

3. For a DFA, verify if a sequence is accepted by the FA.

For transitions I used a dictionary where each pair is assigned to a list of destinations.

For states, alphabet, q0 and final_states I used a list.

finiteAutomata.py:

- getLine(line)
  - pre: receive a line
  - post: return a list of arguments from the given line
- readFromFile(filename)
  - pre: receive a file name
  - post: populate transitions dictionary and states, alphabet, q0 and final_state lists
- isDfa()
  - pre: takes the transitions
  - post: checks if fa is dfa

main.py:

- __read_fa():
  - Reads the given fa
- __display_all():
  - Display everything from fa
- __display_states():
  - Display the states
- __display_alphabet():
  - Display the alphabet
- __display_transitions():

Display the transitions

__display_final_states():

Display the final states

__dfa():

Checks if fa is dfa

run():

Let the user to choose what he wants to do in this program

fa.in

```
states = A B C
alphabet = 0 1
q0 = A
final_states = A C
transitions =
   (A, 0) -> A
   (A, 1) -> C
   (B, 0) -> B
   (B, 1) -> A
    (C, 0) -> C
    (C, 1) -> B
```