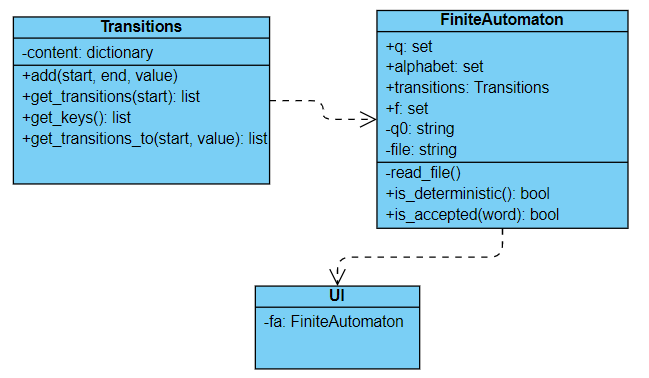
<https://github.com/hiImDeni/flcd>

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.



The FiniteAutomaton contains:

* q = set of states
* alphabet
* transitions of type Transitions (which is a dictionary with the key being a state and the value is tuple containing on position 0 the next state and on position 1 is the value)
* F = set of final states
* q0 = initial state

Checking if the FA is deterministic:

* for every state of the FA, we need to check if it can reach a certain value from the alphabet through only one transition

Checking if a word is accepted:

* start from the initial state
* for every character in the word
* check if it can be obtained by a transition starting from current state
* if it not be obtained => the word is not accepted
* else move to the next state
* if the last state we reached is also final => the word is accepted by the FA

Meaning of file:

* Line 1: set of states, initial state is the first one from the set
* Line 2: alphabet
* Line 3: set of final states
* Line 4-eof: transitions -> Separated by space: start\_state next\_state values

Tests:

fa.in :

q1 q2 q3 q4  
a b c d  
q3 q4  
q1 q1 a  
q1 q2 b  
q2 q4 d  
q1 q3 c

* States: q1, q2, q3, q4
* Alphabet:
* Deterministic
* Accepted words: a\*c+, abd