

## Documentation for FA

BNF for the FA.in form:

```
<state> ::= a | b | ... | z
<states> ::= <state> | <states>, <state>
<digit> ::= 0 | 1 | ... | 9
<alphabet> ::= <digit> | <alphabet>, <digit>
<init_state> ::= <state>
<final_states> ::= <state> | <states>, <state>
<transition> ::= <state>, <digit>, <state>
<transitions> ::= <transition> | <transitions> newline <transition>
<file> ::= <states> newline <alphabet> newline <init_state> newline <final_states> newline
<transitions>
```

Data structure:

The FA is a class having the following attributes:

The states, alphabet and final states are represented by lists of strings (one string representing a state/alphabet)

The transitions are represented by a list of lists (these lists representing each one transition with 3 elements containing it)

The initial state is represented by one string (a state)

The methods:

- read\_file : reads the information from the FA.in file
- run\_menu : runs the menu where the program displays the information
- get\_transition\_for : it gets the destination states for one state and one element of the alphabet
- check\_dfa: checks if one sequence is accepted by the FA