Jesse Alltop

Asg 2

jalltop

Add secret directory

**Summary:**

First and foremost, I did find this assignment to be rather challenging, I felt that I dedicated a pretty significant amount of time to the assignment and still needed extra time to complete it to my liking. This resulted in three different occasions where I threw out what I had built to start over fresh.

For the classes that I used through this assignment I have State, which represents a state in the NFA composed of a name and the transitions it can make. Then I also have a class called dfaState, which of course is a state in the DFA machine that results from the conversion of the NFA, it also contains a name, a list of NFA states that compose this state, and a hash map that has a input character as a key and a list of the NFA states that can reached given that key. Those are the only two classes that I implemented for this assignment. It is also worth noting that all of the parameters are public, I know this is poor practice, but with running behind schedule it made for cleaner and quicker coding.

So, with the actual conversion of the NFA to DFA, I first begin with building up the NFA machine. This is done within the createNfa method which takes in a file scanner. Within the createNfa method we set the number of states, create the states, find all available input tokens, add the available transitions for each state to the appropriate state, and finally save the initial and accepting states for the machine. As far as data structures go I used ArrayList, so I could dynamically grow with the number of NFA states as I needed to. Since the input characters are static I used a simple array for those.

Next, I move on to converting/building the DFA from this now existing NFA.