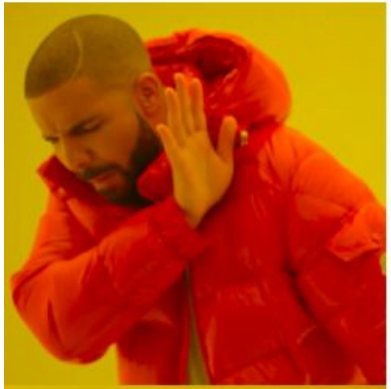
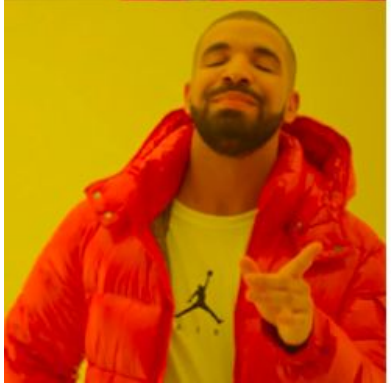
How it started

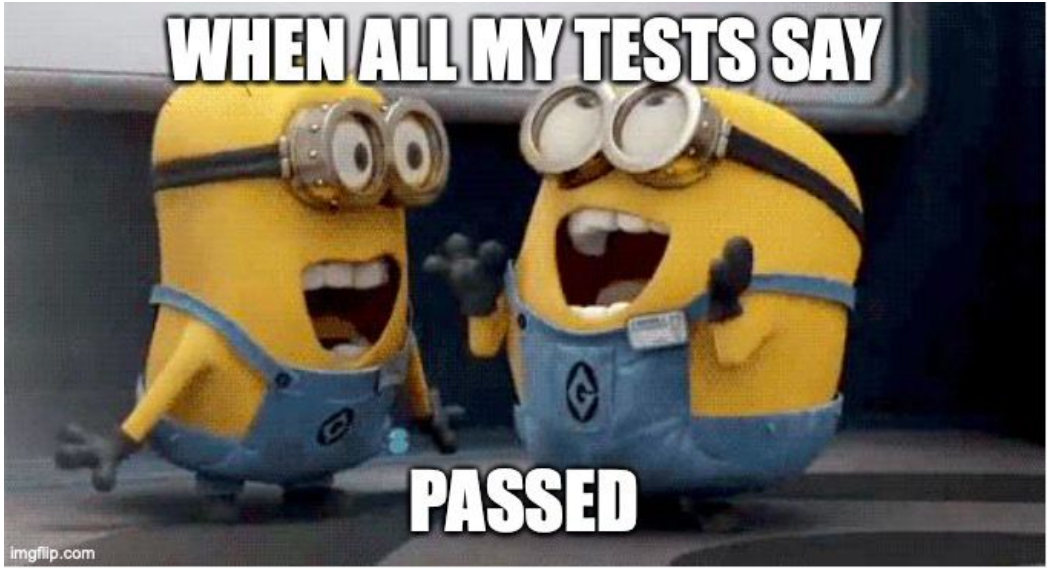
How its going



Confused and not knowing how to start this project...



spent time thinking, coded a lot, tests: PASSED



And now… to show you the code

How it runs in Ada

```
jchase@ada:~$ cd FinalProjCompSys-master/
jchase@ada:~/FinalProjCompSys-master$ gcc -o main main.c
jchase@ada:~/FinalProjCompSys-master$ ./main ./FSMdef.fsm ./in.inputs
processing FSM definition file ./FSMdef.fsm
FSM has 16 transitions
processing FSM inputs file ./in.inputs
        at step 0, input a transitions FSM from state 0 to state 1
        at step 1, input a transitions FSM from state 1 to state 0
        at step 2, input a transitions FSM from state 0 to state 1
        at step 3, input a transitions FSM from state 1 to state 0
        at step 4, input b transitions FSM from state 0 to state 1
        at step 5, input c transitions FSM from state 1 to state 2
        at step 6, input b transitions FSM from state 2 to state 1
        at step 7, input c transitions FSM from state 1 to state 2
after 8 steps, state machine finished successfully at state 2
jchase@ada:~/FinalProjCompSys-master$
```

```
jchase@ada:~/FinalProjCompSys-master$ ./test
Test 1: Passing too little command line arguments to program.
PASSED: result=-1, expected=-1, actual=-1

Test 2: Passing too many command line arguments to program.
PASSED: result=-1, expected=-1, actual=-1

Test 3: Passing invalid FSM definition file to program.
PASSED: result=-1, expected=-1, actual=-1

Test 4: Passing invalid Inputs file to program.
PASSED: result=-1, expected=-1, actual=-1

Test 5: Passing valid files to program.
PASSED: result=1, expected=1, actual=1

Test 6: Passing FSM file with too many states (51 to be exact).
PASSED: result=-1, expected=-1, actual=-1
```

```
jchase@ada:~/FinalProjCompSys-master$ ./main ./FSMinvalidState.fsm ./in.inputs
processing FSM definition file ./FSMinvalidState.fsm
Invalid start state value in FSM file. State value exceeded max integer value in C language. Terminating Program
.jchase@ada:~/FinalProjCompSys-master$
```

Some of the Hardest Parts

- I wrote it all as one big program so when I went to turn it into separate functions there was a lot of trial and error about how to structure the functions and use pointers
- I had also incorrectly assumed the max state value was 50 and had to figure out how to check if something is bigger than the valid max for an integer
- Checking if the line in FSM file was valid took me a long time to figure out, more than anything else
- Trying to figure out why some test edge cases had issues, and then going back and catching them in my functions

Some of the funnest parts

- Testing was actually quite fun even though it was challenging at some points, because it was cool to see how my functions and program were actually working
- When I would figure out something that was really tricky, I got so excited!! For example, how to check if int was valid, why function was misbehaving, a bad bug

Things I Definitely Learned

- The main thing: How to combine all the things we learned in class about C into a working program, including using pointers
- There are never too many tests, I kept thinking of new things to add
  - When it seems impossible, take a break, breathe, come back, and look with fresh eyes
  - Always ask questions, don’t assume anything
  - (ALWAYS CHECK PIAZZA - thanks to everyone else asking questions, they thought of things I might never have thought of!)


THAT'S ALL FOLKS. THANKS FOR LISTENING
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