

CSC 173 Project 5  
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### **Program Files Used**

All teacher-provided files, no more no less

### **How To Run My Project**

- can be run on any IDE or terminal.
- Navigate to where the folder containing our files is stored, type “make” then “./boolp” (which stands for boolean-project by the way)

### **How The Code Runs**

- First the teacher-provided circuit test runs because I didn’t delete it.
- Then Circuit A runs
- Followed by Circuit B
- Then C

### **How Circuit B is built**

I basically just replaced the NOR gates with consecutive OR and NOT gates, and the NAND gates with consecutive AND and NOT gates. It is pretty self-explanatory if you look at the function `CircuitB()` in my main program.

### **How My Tester Function Runs**

To enable this, I have a recursive `toBinary` function that converts any base 10 number to base 2.

When my tester function is called, I get the number of inputs of the circuit to test and while `i` is less than the left shift of the number of inputs, we call my tester helper function (so basically, if we have 3 inputs, we do this  $1 << 3 = 1 * 2^3 = 8$  times).

In my tester helper function, we set what each of the inputs will be (ie to true or false), then save our changes. Then, after printing out what inputs we’re testing, we print out the output using the teacher’s conveniently written `Circuit_getOutput()` function.

### **BONUS**

I did the one-bit adder bonus question. It was as simple as building any other circuit, except with a million more connections.

And that’s it!!