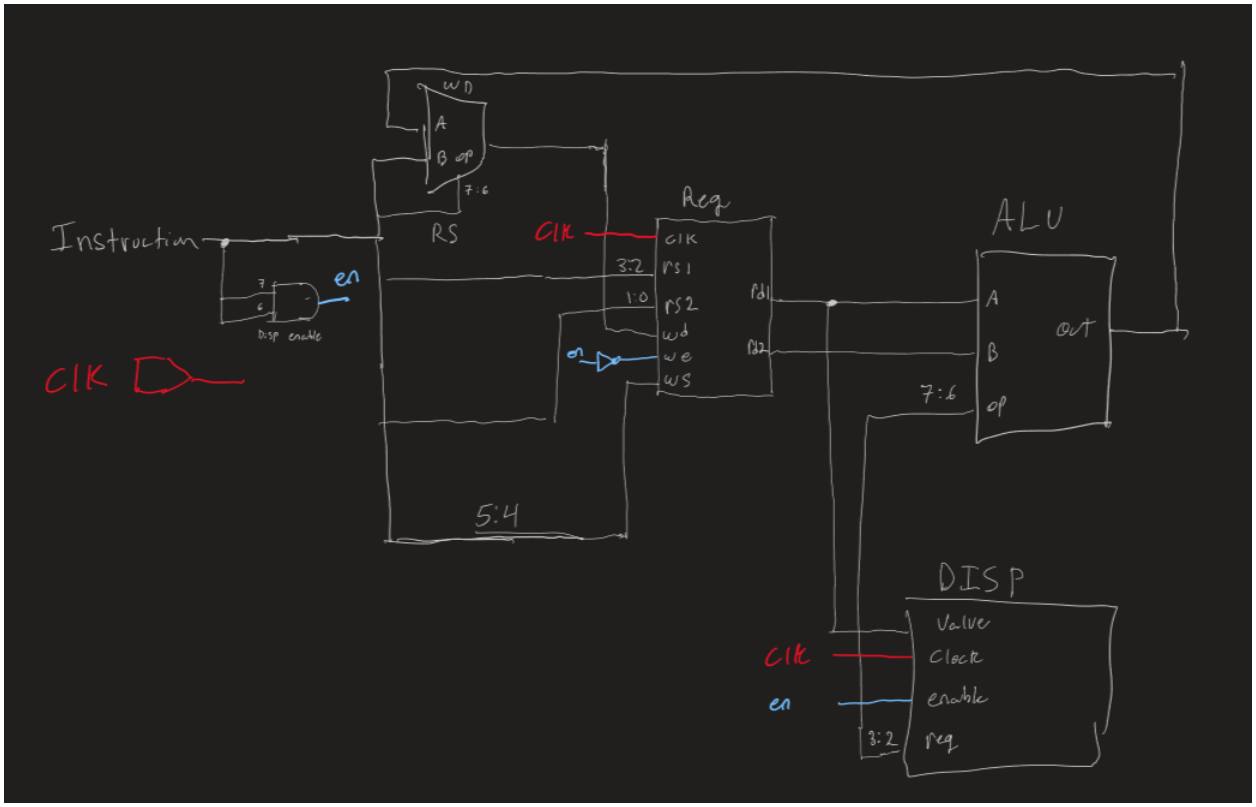
Alexander Hayes
Samuel Calvert

Lab 4- Calculator

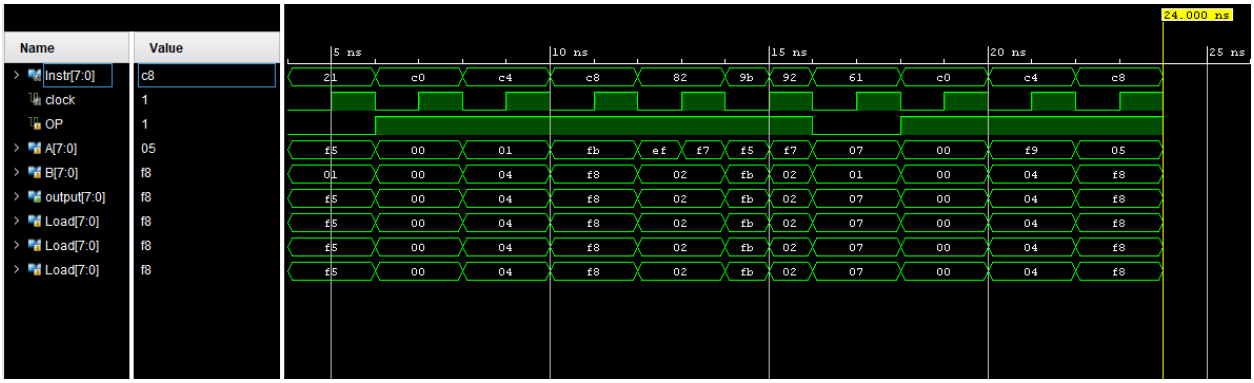
RTL Circuit for our calculator



Testbench Methodology:

During testing, the first thing that we wanted to test was the addition of our calculator. So we first load the decimal value of (-6) to register 1 and load in the decimal value of (-5) into register 2. We then tested our add function by adding together the two values and storing it into register 3 and then proceeded to call our display function on that same register and returned a result of -11 which is correct. The next thing we wanted to test was our subtract function. We decided to change the number that was register 1 to the decimal value of 2 and then proceeded to subtract 2-(-5) and got a result of 7 which is also correct.

Simulation



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Console Output

```
run all
Note: The value in register 0
Time: 7 ns  Iteration: 2  Process: /Calculator_
Note: is -6
Time: 7 ns  Iteration: 2  Process: /Calculator_
Note: The value in register 1
Time: 9 ns  Iteration: 2  Process: /Calculator_
Note: is -5
Time: 9 ns  Iteration: 2  Process: /Calculator_
Note: The value in register 2
Time: 11 ns  Iteration: 2  Process: /Calculator
Note: is -11
Time: 11 ns  Iteration: 2  Process: /Calculator
Note: The value in register 0
Time: 19 ns  Iteration: 2  Process: /Calculator
Note: is 2
Time: 19 ns  Iteration: 2  Process: /Calculator
Note: The value in register 1
Time: 21 ns  Iteration: 2  Process: /Calculator
Note: is -5
Time: 21 ns  Iteration: 2  Process: /Calculator
Note: The value in register 2
Time: 23 ns  Iteration: 2  Process: /Calculator
Note: is 7
Time: 23 ns  Iteration: 2  Process: /Calculator
Note: end of test
Time: 24 ns  Iteration: 0  Process: /Calculator
```