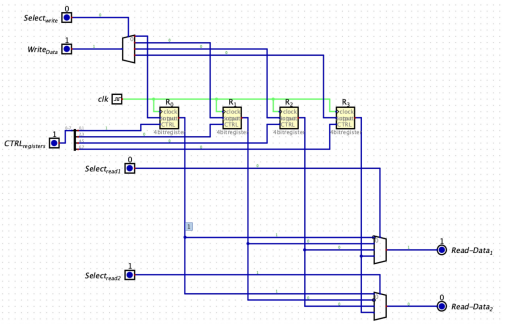
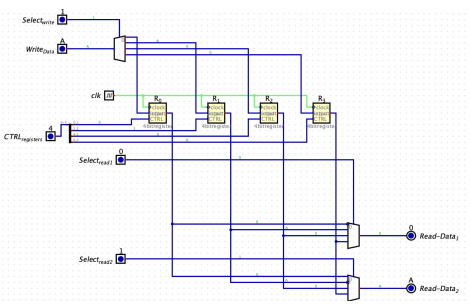
2. Register File Tests

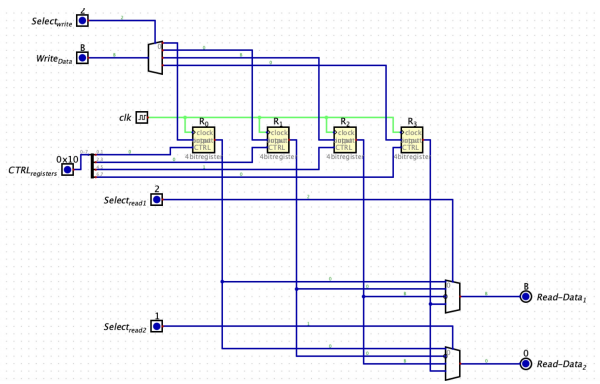
Test with value 01



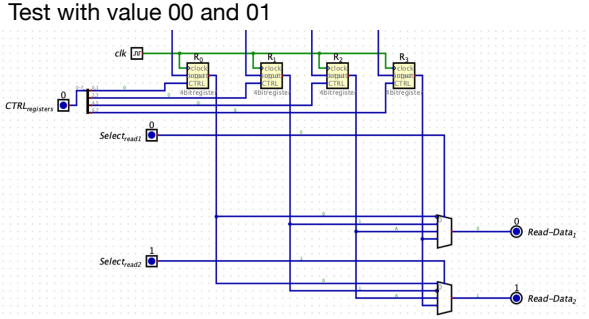
Test with value 10



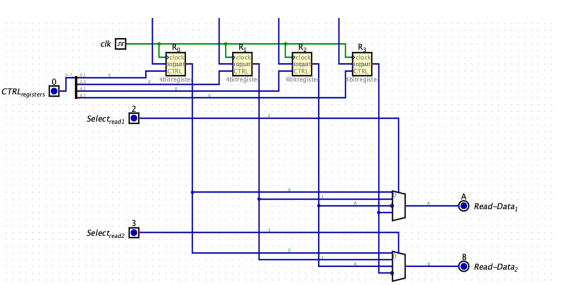
Test with value 11



Test with value 00 and 01

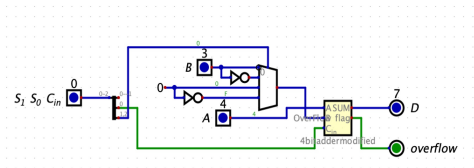


Test with value 10 and 11

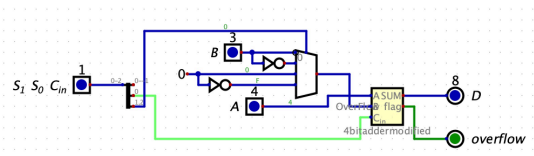


3. ALU Testing

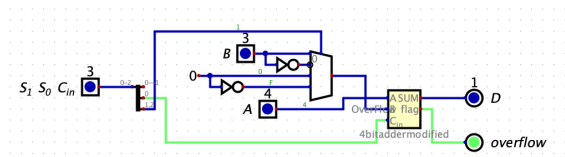
Add A + B



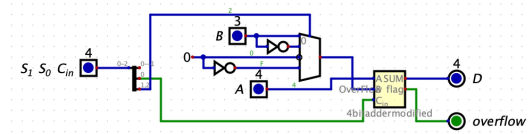
Add with Carry A + B + 1



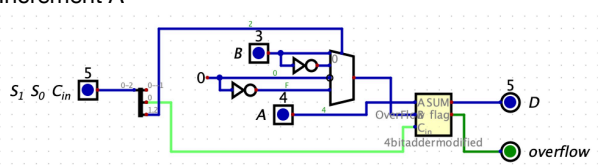
Subtrat and Borrow if needed A - B



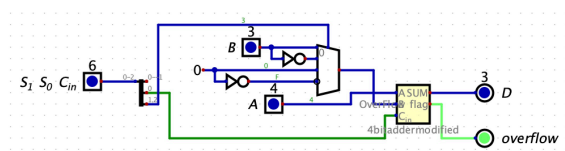
Transfer A



Increment A



Decrement A



Brief report.
For the register file circuit I created two two select read inputs that connect to a multiplexer that determines which register is being read. This allows for two different registers to be read simultaneously. And the write input is just a single multiplexer that determiens which register is being written to using another input as the selector pin.
For the ALU implementation I used a modified 4 bit adder that can handle subtraction. Then I used a splitter for S1S0Cin where the least significant bit is used as Cin on the adder and the two bits after that are used as the selector pin for the B input.

Github link: https://github.com/RMm32/Assignment2