

Assignment 5

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October 2023

1 Task 1

For task 1 we were required to implement all five parts of datapath for addi instruction.

The five datapaths are:-

- Instruction Fetch (IF)
- Instruction Decode (ID)
- Execute (EX)
- Memory (MEM)
- Write Back (WB)

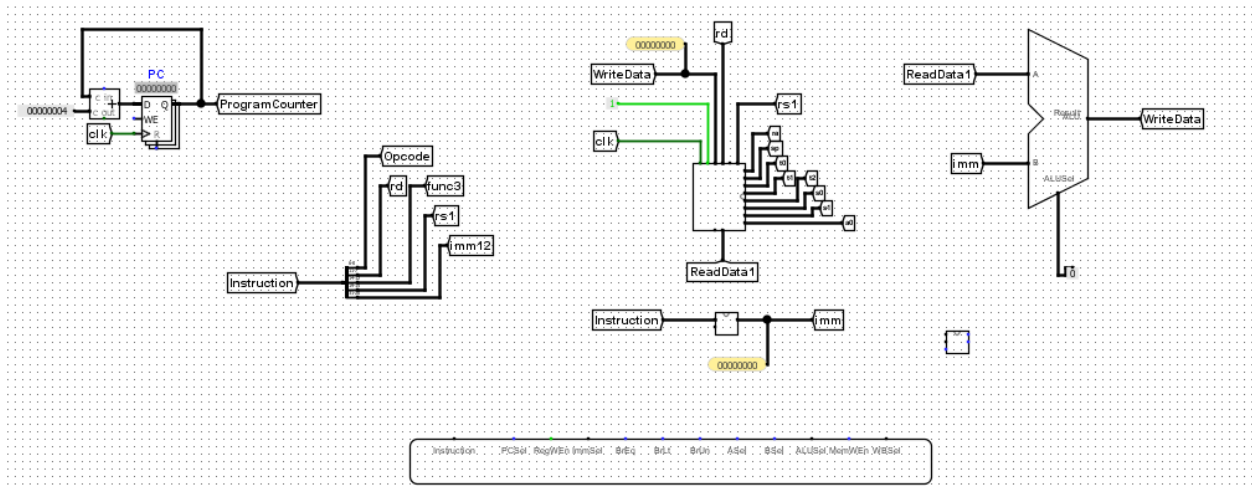
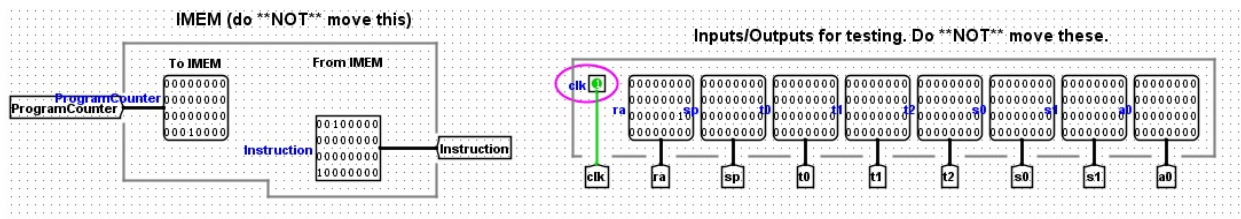


Figure 1: Datapath for addi instruction

Additional Points:

- Since we are not using control signals, we have hardwired some of the control signals.
- Splitter has been used to split the different fields for instruction.
- Various parts of instruction has been given input to register file and the ALU.



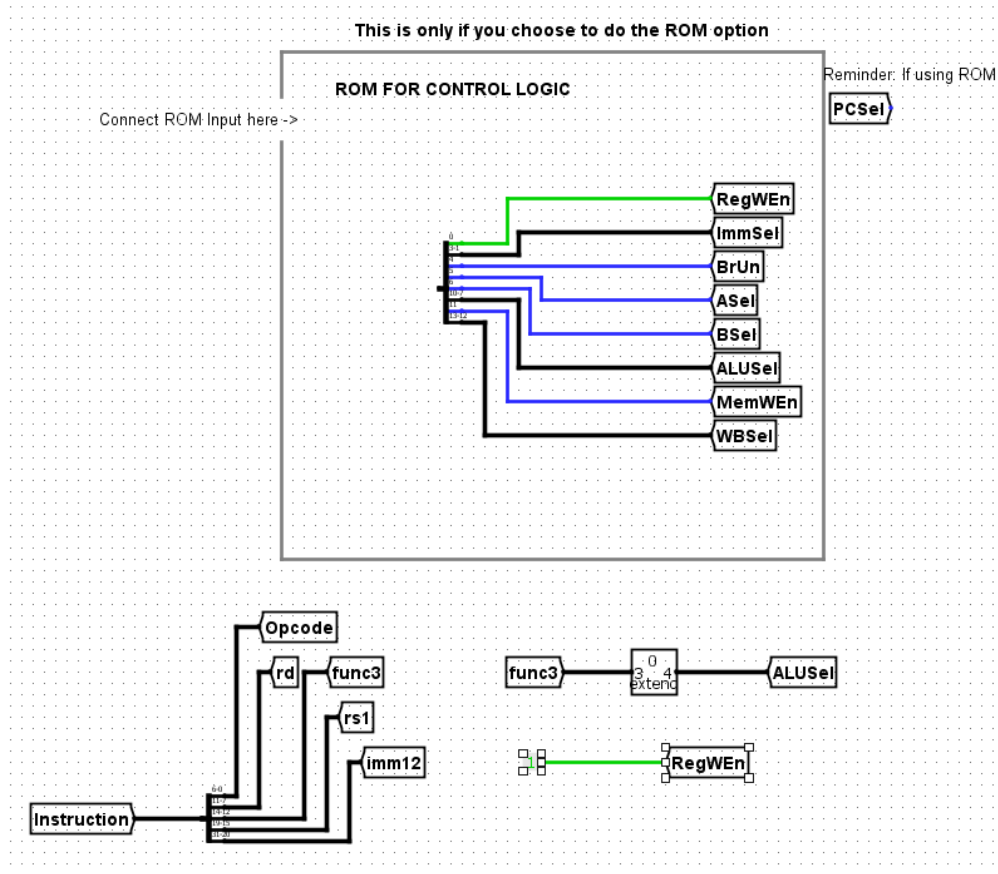


Figure 4: Control Logic for Task 2.2

3 Task 3

In Task 3, we are required to implement the R-type instruction.

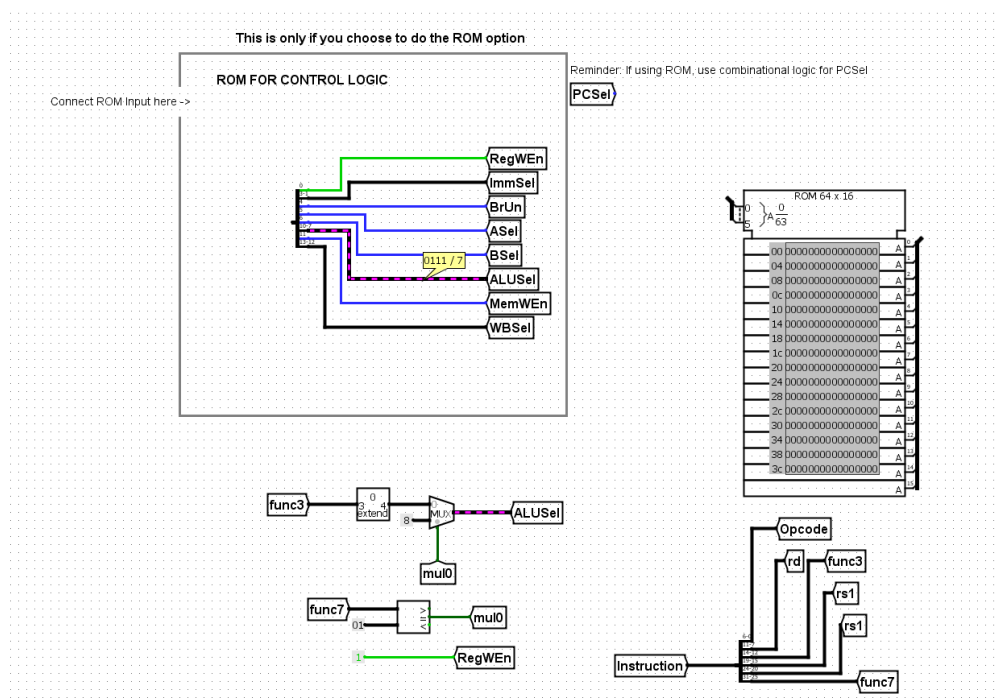


Figure 6: Control Logic for R-type instructions