EC 413 Write Up

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Lab 6

For the module, I tried my best to follow the pictures which was given by the pdf. I created 3 stages with one ALU, one Mux and one register. If something is reset, then all the input value goes to zero. If there is input and no reset, then all the input values are carried up to stage 3 to bring with some kind of output. Finally, output goes back into the register so that the output value can be written into the selected register number. The hardest part of this lab is naming and connecting the correct wires. Once, it was connected properly then it worked well.

A picture containing diagram

Description automatically generated

The picture below shows how I tested the module. Basically, I divided into two types, I type and R type. Then, I tested all six possible ALU options. 30 ns of waiting each time before the next operation was proper enough to show the result without any error.

Table

Description automatically generated

These two pictures are the waveform of my module. When I compare it with my testbench, it demonstrates that all the operations are working properly. I changed the result radix into signed decimal to check it more easily. I used the given register file. It means that r1 =10, r2 =20, r3 =30, r4 = 40, r5 = 50, and r6 = 60 in the beginning of the module.

Graphical user interface, application

Description automatically generatedA picture containing graphical user interface

Description automatically generated