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Lab Report #4

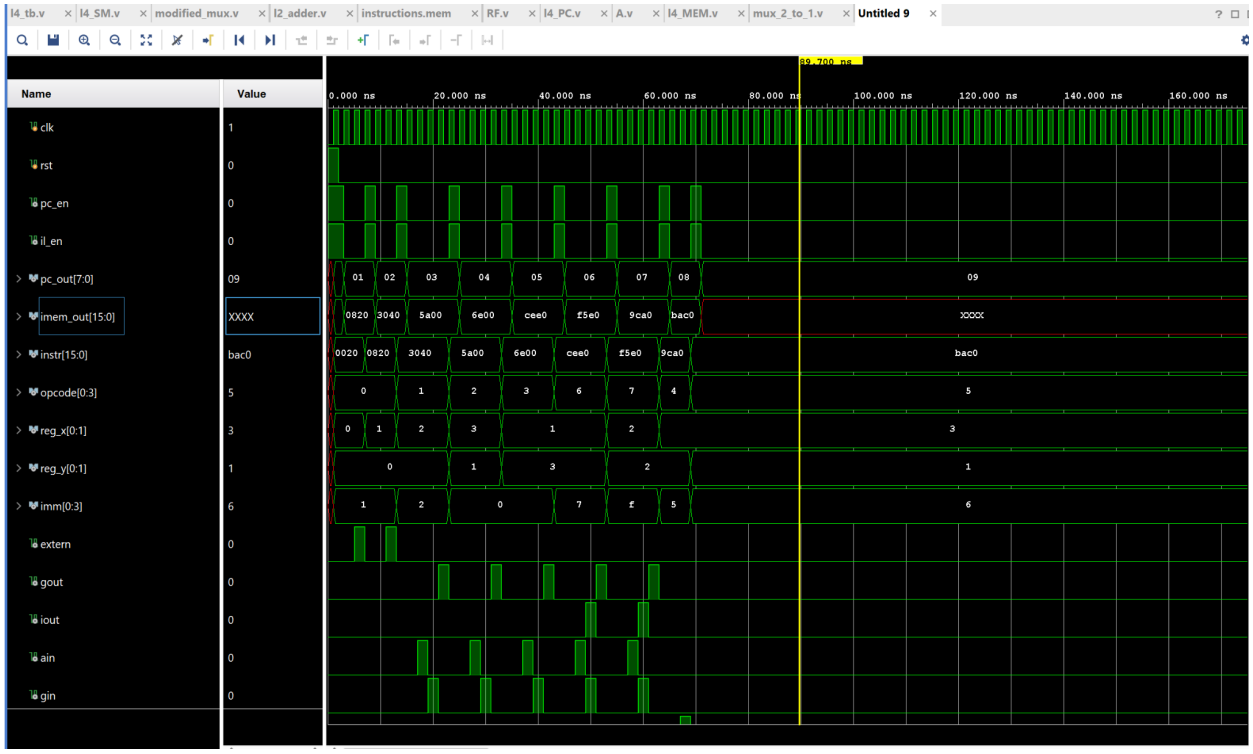
Lab #4: Fetch and Execute Instruction From Memory

Source Code:

Attached In Camino Submission

Link:
https://drive.google.com/file/d/1btxWnME0jPTT5Qfm6qrEKQGqOSlKHcHW/view?usp=sharing

Waveform:



What problems did you encounter?

We had a problem with our procedure of states where we forgot to remove the execution condition and also forgot to include our halt state which should loop. Furthermore, we mislabeled our test instructions so when we went to execute we had a problem interpreting the data and had to rewrite these.

What did the TA notice when you demoed?

When we went to demo, Thomas helped us interpret our timing diagram and recognize that our inputs were mislabeled. This was useful because we were struggling to understand what

we should expect in our waveform output, especially as we were basing it on our mislabeled instructions. While we were trying to find the problems in the operations, he helped us see that we were incorrectly interpreting our inputs. We didn't think of these errors by ourselves because we did not know what to expect and therefore couldnot analyze the output correctly.

What would happen if you did not implement the halt instruction?

This would be problematic because, without an execute input, the instructions would continue to loop and give repeated outputs. The alternative would be to add the halt instruction which prevents the constant looping output.