

CprE 381 – Computer Organization and Assembly-Level Programming

Lab-03 Report

Student Name _____

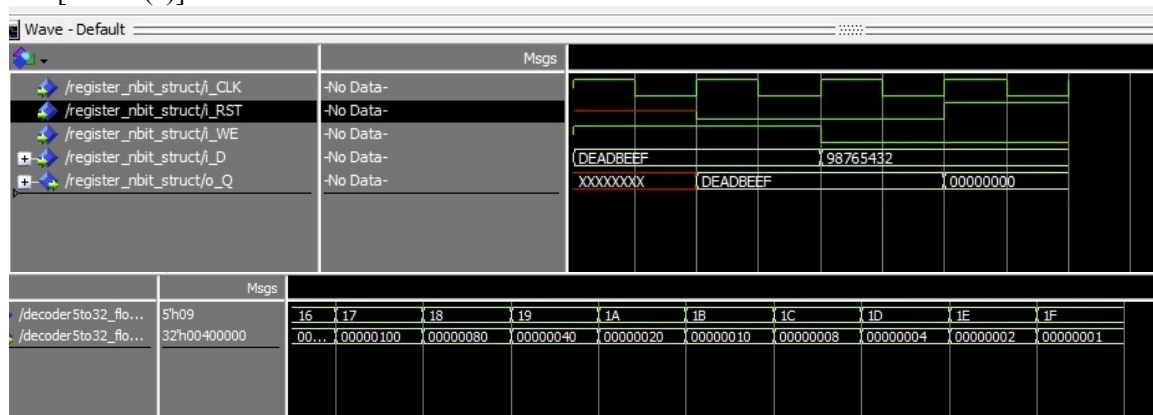
Section / Lab Time _____

Submit a typeset pdf version of this on Canvas by the due date (i.e., the start of your next lab section). Refer to the highlighted language in the Lab-03 instructions for the context of the following questions.

- a. [Part 1 (a)] Draw the interface description for the MIPS register file. Which ports do you think are necessary, and how wide (in bits) do they need to be?

3 register select lines each 5 bits
1 write enable 1 bit
1 32 bit input to store in a register
2 32 bit output lines
clock

- b. [Part 1 (c)] Waveform.



- e. [Part 1 (f)] In your write-up, describe and defend the design you intend on implementing for the next part.

I wrote a nbit to 1 multiplexer. I did this so it will hopefully be reusable in future designs. I did this in structural VHDL having $n/2$ muxs in a first row controlled by 1 bit that feed into another row which has $n/4$ muxs controlled by the next input. This is repeated for $\log_2(N)$ rows. This allows any of the inputs to be selected.

- f. [Part 1 (g)] Waveform.

- i. How many hours did you spend on this lab?

Task	During lab time	Outside of lab time
Reading lab	1	
Pencil/paper design	1	2hour
VHDL design		10-15
Assembly coding		0
Simulation		3
Debugging		15-20
Report writing		.5-75
Other:		
Total	2	Roughly 35 (3 complete days)

- ii. If you could change one thing about the lab experience, what would it be? Why?

This was 2-3 labs we were expected to do in 1 week. This is a 4 credit class. It is unreasonable to expect us to spend more then 40 hours a week on it. I know I am not the only one putting in such an unreasonable amount of time. This class is harming all of my other classes and I can feel it starting to affect my health.

- iii. What was the most interesting part of the lab?

I was really interested in getting the seeing the slowly building up of the processor, but after 37 hours I don't really care any more.