ENGR-433
HW#7

Preface

For homework #6 you created a block diagram draft and some timing info for the Lab 5-6 assignment. While you did create a draft block diagram and many of you showed some timing information, my review of your hw6 revealed that more work remained to refine the block diagram and definition of timing. Since then you have done further work on the lab and thus you may already have done much of HW7, in which case turn in your work.

I want to emphasize that creating a block diagram that clearly shows both signal flow and control signals, together with a good description of timing, is recommended prior to writing VHDL and forms a required part of the lab report that you submit for this lab. Thus doing this assignment helps complete the lab.

HW7

1) Refine your block diagram to clearly show data flow from one block to another and the control signals going in or out of a block. It should be clear what type of memory you are using to store the 32 data words.

2) You may find a state machine useful for sequencing or controlling signal flow. If so, then a block on your block diagram will be called state machine. And you should include a state diagram for it.

3) This homework needs to clearly define the timing of data and control signals in your circuit. I am not enforcing a particular way of doing the documentation. The result however should be that a reader, particularly you and the instructor, can look at your documentation and understand how your circuit works. Specific clock speed(s) or time intervals need to be shown (you don't need to list propagation delays unless you think some time interval is critical and you specifically investigate propagation delay).

4) This documentation can be hand drawn or machine generated. In either case try to make it comply with good drafting standards, i.e. not all bunched into a corner of the sheet it is drawn on, legible labeling, direction arrows on lines representing signals, etc. I am allowing varioius drawing media so you can use the most time effective method. (Sometimes I find using a CAD tool as efficient as hand drawing and other times hand drawing helps me think through a problem). If by hand, I recommend using pencil to draw because you can erase.

5) Turn in HW#7 by scanning or photographing it and submitting to D2L by class time Monday.