ECE 385 Lab 6 Report Outline

- ❑ **Introduction**
  - ❑ Summarize the basic functionality of the SLC-3 processor
- ❑ **Written Description and Diagrams of SLC-3**
  - ❑ Summary of Operation
    - ❑ Describe in words how the SLC-3 performs its functions. In particular, you should describe the Fetch-Decode-Execute cycle as well as the various instructions the processor can perform.
  - ❑ Written Description of all .sv Modules
    - ❑ A guide on how to do this was shown in the Lab 5 report outline.
  - ❑ Block Diagram of slc3.sv
    - ❑ This diagram should represent the placement of all your modules in the **slc3.sv**. *Please only include the slc3.sv diagram and not the RTL view of every module*.
  - ❑ Description of the operation of the ISDU (Instruction Sequence Decoder Unit)
    - ❑ Named ISDU.sv, this is the control unit for the SLC-3. Describe in words how the ISDU controls the various components of the SLC-3 based on the current instruction. If you prefer to, you can lump this section into the module description section under ISDU.sv.
  - ❑ State Diagram of ISDU
    - ❑ This should represent all states present in the ISDU and their transitions. The diagram from Patt & Patel Appendix C can be used as a starting point, but would need to be modified to be representative of the ECE385 implementation of the LC-3. *You will lose points if you just copy the diagram*.
- ❑ **Simulations of SLC-3 Instructions**
  - ❑ Simulate the completion of 3 instructions from the following groups: ADD/ADDi/AND/ANDi/NOT; BR/JMP/JSR; LDR/STR. For example, consecutively simulating ADD, BR and then LDR would be an acceptable simulation. You *must* annotate this diagram (for instance, label where instructions begin, where the answer is stored, etc.)
- ❑ **Post-Lab Questions**
  - ❑ Fill out the Design Resources and Statistics table from Post-Lab question one
  - ❑ Answer the following two questions
    - ❑ What is the function of the MEM2IO.sv module?
    - ❑ What is the difference between the BR and JMP instructions?
- ❑ **Conclusion**
  - ❑ Discuss functionality of your design. If parts of your design didn't work, discuss what could be done to fix it
  - ❑ Was there anything ambiguous, incorrect, or unnecessarily difficult in the lab manual or given materials which can be improved for next semester? You can also specify what we did right so it doesn't get changed.