Chapter 13

Personal Project: Part B

The purpose of this laboratory is to give you the opportunity to select your own digital design project, design this project, and successfully implement the project in the lab. You are required to complete your proposed project and demonstrate it to the TA. After completing this lab, your project design should be complete.

An important component of this laboratory exercise is working with another person. Working with another person has a number of benefits including the ability to accomplish more work, companionship during the lab, and the ability to share ideas. Working with another person can also present challenges. The following questions are provided to encourage you to reflect on your experience working with a partner for this lab.

Question: Indicate your level of effort on this lab as a fraction of the entire project effort. For example, if you and your partner both worked on the lab with equal effort, respond with 50%. If you completed the project yourself with no help from your partner, respond with 100%.

Question: Summarize some of the positive and negative aspects of working with another person on this lab. Note that the purpose of this question is not to complain or praise your partner. Rather, the purpose of this question is for you to reflect on your experience working with a partner and discuss anything you would do differently if placed in a similar situation in the future.

Some projects may need to be modified due to complications during the design or improper specification. Describe any changes in your original specification on Learning Suite.

Question: Describe any changes to the original specification.

Question: Indicate the number of slices, I/O pads, and BRAMs that are occupied by your design.

Project Documentation and Archival

You are required to document your project with a single README.txt file. The purpose of this file is to provide the user of your project information about the project authors and instructions on how to use the project. Make this file as neat and readable as possible (use plenty of white space). As a minimum, include the following:

- **AUTHORS**: Include the name(s) of all persons who contributed to this project
- **COURSE**: Indicate the class, semester, instructor, and university (i.e. ECEN 320, Fall 2012, Dr. Mike Wirthlin, Brigham Young University).
- **SUMMARY**: Provide a short 1-2 sentence description of your project
- **INSTRUCTIONS**: Provide instructions on how to use/run your project. If your project requires external hardware, provide a brief description of what hardware is needed
- **FUTURE WORK**: Indicate any future work you would do if you were to continue working on the project. This may give future students some ideas on projects they could complete
- **PROJECT BUILD OPTIONS**: Indicate any special options or build procedures that were needed to synthesize your circuit
- **PROJECT SIZE**: Summarize your project FPGA utilization by including the following:

    – Indicate the number of lines of VHDL code

    – Indicate the size of your project (slices, BRAMs, I/O, etc.)

Your student project represents a lot of hard work and will provide a nice demonstration to future students on what can be done with digital systems. To help future students use your project, create a .zip archive that includes all of the following:

- Your README.txt file
- The FPGA configuration .bit file generated by the implementation tools

Upload: Upload your .zip file that includes the items described above.

Pass Off

To pass off this laboratory assignment, demonstrate your working design to the TA. Note any changes in your original specification.