Hardware Laboratory Course
Report Guidelines

Background

The general format for a laboratory report is modeled on the standard structure for a scientific paper, but there are significant differences because laboratory assignments are learning exercises, not research projects.

To begin, here is the structure of a research paper or journal article:

- **Title, Author, Affiliation**
  These three items are written, centered, on three separate lines. The title should be a first-level heading, while the author and affiliation are in a normal text style.
- **Abstract**
  The abstract is a paragraph that summarizes the entire paper. The purpose is to give enough information to the reader so that he or she will know what the paper is about and whether or not to read the rest of the paper. The word "Abstract," like the other section names listed below, is a second level heading, and the paragraph is in a normal text style.
- **Introduction**
  The introduction gives the rationale for performing the research, and includes a review of other research to which the present work is related. The other works are cited in the body of the text either by putting the author's last name and year of publication in parentheses or by putting a reference number in square brackets.
- **Method**
  The method section tells exactly what procedures were followed in enough detail that an interested reader could perform the same procedures in an attempt to replicate the author's findings.
- **Results**
  The results section, as its name implies, presents the results of carrying out the procedures given in the Method section. The format of the Results section is English prose, just like the rest of the paper, but tables and figures are often included here to help present the data clearly and effectively. The results of any statistical analyses performed on the results would also be presented in this section. However, this section is strictly objective in nature, and thus it does not contain any interpretation of what the results mean.
- **Discussion**
  The discussion section is where the author interprets the results obtained, comments on how the results relate to the rationale for the doing the research, and draws conclusions about the significance of the experiment. If the author feels that further research should be done based on the results obtained, this is the appropriate section for suggesting what that research would be.

- **Conclusion and/or Summary**
  A conclusion or summary may be included, but does not have to be a separate section. It can just be the last paragraph or so of the Discussion section.
- **References**
  Each article, book, or web page that is cited is listed in the References section exactly once, no matter how many times it is cited in the body of the paper. Each item should include the author's name(s), the title of the work, and enough information so the reader can access a copy. The list is alphabetical by author's last name (if citations are by author and year) or numerically in the order in which the items were first cited in the body of the text (if citations are numeric). Some papers include a "Bibliography" section, which is a list of other material that is relevant to the paper, but not cited directly.
- **Appendices**
  Data tables or other written material that is too big to fit in the body of the paper without making it difficult to read can be put in Appendices. Appendices seldom appear in journal articles, but are often found in books.

Laboratory Reports

Laboratory Reports should follow the basic structure of a research paper. For this course, the differences are as follows:

- **Title, Author, and Affiliation**
  Use a meaningful name for the report. An example of a *non*-meaningful title would be "Laboratory I." List all members of your lab group as authors. For your affiliation, use the course name, Queens College, and the semester.
- **Abstract**
  Not needed.
- **Introduction**
  Give the goals and objectives of the laboratory assignment in your own words. I know it's impossible to describe the assignment better than I already did in the lab handout itself, but try.
- **Method**
  Tell what code you wrote and how you tested it. Summarize the algorithms implemented, and mention any prototyping code you wrote that isn't included in the final version of the project.
- **Results**
  Describe the functionality and performance of the projects completed for the assignment.
- **Discussion**
  Tell how well the projects did or did not match the goals of the assignment. If the goals were not met, this is the place to suggest how they might have been met successfully or why they turned out to be unrealistic. Suggestions for

improvements in either the assignment or in your code are appropriate, but not required, here too.

- **References**
  Unless you actually cited something in your report, you may omit this section. But if you did use an algorithm or some code from someplace other than the lab assignment handout or the manuals assigned for the course, you should cite them in your Method section, and list the sources here.
- **Appendices**
  Not needed.

Preparing and Submitting a Report

Use a Word Processor to Prepare the Report

You can use Microsoft Word (available on the laboratory computers) or some other word processor, such as Open Office, to prepare your report. Use the word processor's "styles" to structure the document. Use "Heading 1" for the title, and use "Heading 2" for each of the main sections (Method, Results, Discussion). If you don't know how to use a word processor yet, ask.

The name of your report is to be "Laboratory_I.doc." Adjust the roman numeral to match which laboratory you are doing, and adjust the extension to match your word processor's standard name if it is not .doc.

Grading criteria for your report will include basics of English usage: spelling, grammar, sentence structure, and paragraph structure. Express yourself clearly and completely. On the other hand, there is no need to pad the report out to make it seem bigger than it needs to be. Avoid redundancy.

Create a Zip file of the Workspace for the Laboratory

You are also to submit a zip file containing the Workspace directory that you set up for the assignment. Before you create the zip file, delete the contents of all subdirectories under the project directories for the lab. Typically, there will be an RC200E and a Debug subdirectory for each project. These directories hold the intermediate and output files produced by DK and the Xilinx tools, which get to be quite large and which can be recreated simply by building the projects over again.

You can create the zip file by right clicking on the workspace directory and selecting *WinZip → Add to xxx.zip*, where xxx is the name of the workspace directory you clicked on. The Zip file will be placed in the directory *above* the workspace directory.

Submit the Report and the Workspace

Attach the report document and the workspace zip file to an email message, and send it to me in a message with the subject line of **CS-345 Laboratory_I** (adjust the roman numeral to match the laboratory). Put your name and your four-digit student ID number in the body of the message. Note that the capitalization and spacing of the subject line

must be exactly as shown to avoid losing your project to my spam filter. Use *vickery##babbage.cs.qc.edu* as my email address, substituting an at sign for the *##***.**