EECS150 Term Project: Guidelines for Writing the Final Report

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The final report is a technical description of the device that you have designed and built in your term project. The main purposes of documentation are to allow users to understand and operate your system, and for your fellow engineers to understand your design so it can be upgraded, improved, and maintained. Your goal should be to ensure that your design will be useful even if you are no longer around to explain its function. Without adequate documentation, many great designs are sent to the scrap heap. Leave time for editing, typing, and proof–reading.

Your report should follow this general outline:

1. Title.
2. Abstract (1 paragraph).
3. Overview (1–2 pages).
   (a) Purpose and Use of Project.
   (b) Design (Block Diagram).
   (c) Brief Description of Major Sub–Modules.
4. System Description (3–5 pages) + figures.
   (a) Subsystem 1- Data Path.
      i. Module 1 through –
      ii. Module n.
   (b) Subsystem 2- Control Unit.
      i. Module 1 through –
      ii. Module n.
5. Design Metrics (1 page max)
   (a) Critical timing path for your design, and maximum clock rate.
   (b) number of CLBs, IOBs, etc.
   (c) Design and debugging time estimates ("engineering cost")
6. Conclusion (1 page).
   (a) Summary of main features.
   (b) Problems Encountered.

For the overview section, try to give a "breadth before depth" introduction to your project. Readers need to get a general picture of your system before they can understand the details. Describe the user–visible features; save the detailed inner workings for the system description section. The block diagram you prepared in the beginning of the project belongs in this section.

The detailed system description can start with functional and input/output specifications. Modules can be described in order from input to output, or from most to least important module. Illustrate the descriptions with the logic diagrams and timing diagrams you have prepared; refer to these as figures.

For the conclusion, summarize the key design features. What will the reader need to be careful about if they were to attempt to duplicate or modify your design? And, what are possible improvements which could be made to the design?

Standard hints for the Final Project Report:

1. Type/ DO NOT hand write (exceptions are allowed for diagrams and other drawings).
2. Use standard 8.5 by 11 paper throughout the report, except for diagram pages, which can be on larger sheets. (Larger sheets for diagrams are easier to follow, and can be neatly folded to fit in a standard binder.) Minimum 11 pt font, single spaced with 1 inch margins. Text portion of report should not exceed 9 pages. Any text after the first 9 pages will not be read. Appendices, including timing diagrams and schematics can be as long as needed.
3. Make a copy of your report for safety.
4. Include block diagrams, logic diagrams, timing diagrams, state diagrams, and tables as appropriate and on or as near as possible to the page in which they are referenced.
5. Put titles on all figures and diagrams.
6. Control Unit documentation
   (a) Explain fully the formats of the different micro-instructions and/or control signals you are using.
   (b) Use a Mnemonically Documented State Diagram, and INCLUDE COMMENTS! Since notation of the form 00/100 is hard to follow for state transitions, instead use $\overline{In}\ \ \overline{Done}/LoadA\ \ \overline{ClrB}\ \ \overline{OutEnA}$

Due Date and Time and Turn in Requirements

The report and unwrapped Xilinx kit are due Friday 12/3/99 in 204B Cory, by 4 pm. The report will not be accepted without a Xilinx kit. Your deposit check will be returned to you when we receive your Xilinx kit.