ECE 411: Computer Organization and Design

MP 4 Report Guidelines

Below are some comments and guidelines regarding the format of your project report. Please pay attention to these guidelines as both the content and presentation quality of your report will be graded. Good luck to all!

1 General comments

Your project report should be written in a reasonably formal format by adhering to paragraphs, punctuation, proper grammar, expressions, and possibly figures. In short, assume that you are writing a report that is to be read by a group of people that you don't know, but that you would like to impress. Your objective is to write a clear and informative report so that whoever reads it understands exactly the points you want to make. At the same time, the style and format of your report should be such that it leaves a positive impression on the reader.

2 Structure

Organize your report in sections which present a clear and coherent analysis of your project and design. A guideline for the structure of the report is presented below. You may add sections if necessary, but the following is a rather complete guideline for the purposes of the ECE 411 report:

1. Introduction
2. Project overview
3. Design description
    (a) Overview
    (b) Milestones
        i. Checkpoint 1
        ii. Checkpoint 2
        iii. Checkpoint 3
    (c) Advanced design options
        i. Option 1 (e.g., branch prediction)
            A. Design
            B. Testing
            C. Performance analysis
        ii. Option 2 ...
4. Additional observations (if any)
5. Conclusion

Remember: Write this report to be read by any CE or CS major with some basic background on computer architecture. Better yet, assume the readership you address has taken ECE 220, ECE 391, and a basic computer architecture course. As such, write your report making reasonable assumptions as to what needs to be explained.

2.1 Introduction

Present the main technical thrust of the project and a very brief organization of the report. Typically, the introduction is broad and also gives a motivational explanation about the importance/impact of the work reported. In our case, you may want to outline the architectural level description of your work and describe the importance of completing this design as part of learning about computer architecture. Assume that you address an audience that is familiar with the broad subject but not with your specific work.

2.2 Project overview

Describe your project and provide insight into what was involved. Give the goals of the project and talk about what influenced the choice of goals. Use this section to describe the organizational and administrative aspects of your project, such as work sharing, project management complications, or notable achievements.

2.3 Milestones

Organize your progress reports for each of the checkpoints in chronological order to demonstrate the evolution of your processor. For each checkpoint, provide an overview of your design and present detailed descriptions of all aspects of your design so far. Include paper designs, diagrams, schematics, or charts where appropriate. Include how you tested different components and verified that they work according to specification. Transition to each checkpoint within this section to demonstrate the progress of your MP.

2.4 Advanced Design Features

For each advanced design option, describe design trade-offs and provide some performance analysis on the performance impact of the option. Ideally, note the speedup (or slowdown!) of adding each advanced feature to your processor. Describe how you implemented these features. Comment on the theoretical workloads that the feature would help with and some workloads that it may handle poorly.

2.5 Additional observations

Make observations about aspects of the project that do not fit in any of the above sections. This section is optional.

2.6 Conclusion

Succinctly give a summary of your design objectives and achievements and summarize any novel or interesting aspects of the work. Give any punchline conclusions if applicable.

Overall, this report is a concise but demonstrative document of your effort this semester and should accurately reflect (for better or worse) the performance of your processor.