CS 497 - Senior Design Project II

Final Report Guidelines

The final report is a formal communication that both fulfills a contract obligation and tells a story. Since the final report is, in some cases, the "product" of the project effort, and in all cases the official record of that effort, it should be prepared carefully. It must be complete enough to account for all of the essential information pertaining to your project, so that you or anyone else could reconstruct and understand what has been done. It must also be accurate; reality must not be warped either by inflation or by depreciation. Mistakes or failures should be explained, but not covered up. Tell it like it was.

Report content will vary as widely as do types of project activities; some will be mostly data or code, others will be mostly words. You may have tables and graphs, or you may have none. Do whatever you need to do to tell a story that is understandable, complete, and accurate.

Final reports will be "published" in the *UE EECS Journal of Senior Projects*. Copies will be provided to all senior project students along with project posters and final presentation videos.

Common Report Format

The sections of a common report format are presented below.

Title Page

The title page should indicate the name of the project, the project engineer(s), the sponsor, the project advisor, the University, and the date.

Abstract

An abstract is a one paragraph summary of the report and appears on the title page.

Acknowledgments

Give credit for any help you received in this section. This includes significant advice, data, equipment, labor, and so forth. This is not a book or a dissertation, so do not thank your spouse or special friend for their great patience, tolerance, and understanding. Dedications are similarly out of place.

List of Figures

Each figure (anything drawn or reproduced, or screen images) should be numbered as "Figure n" in the order presented. Give the number and title of each figure together. The same title should be used on the figure itself as (part of) a caption written under the figure. A figure should be inserted

into the text on the same page as it is mentioned if possible, otherwise at the top of the following page. Note: All figures must be referenced in the body of the report as "Figure n". Captions of reproduced figures should include a citation to the source material listed in the references.

List of Tables

Each table should be numbered as "Table n", separately from figures. (A table is usually composed of words and/or numbers in a table format.) Give the number and title of each table together. The same title should be used on the table itself as a caption. A table should be inserted into the text on the same page as it is mentioned if possible, otherwise at the top of the following page. Note: All tables must be referenced in the body of the report as "Table n".

Introduction (or Summary)

Present a quick overview of the entire design process: the motivation, problem definition, approach, and results. By giving the reader a good, overall "big picture," you will vastly simplify their task of reading and understanding all that follows.

Problem Statement and Specifications

Give a more detailed statement of the problem and the project requirements and specifications as they were presented, and as they have evolved to the final state that has been implemented. Include any technical discussions that help bring the problem into focus.

Design Approach

This is the main point of the report. Tell how you decided to attack the problem. Include a system diagram showing the major components of your project. Make it clear what parts of the project were given or obtained from a third-party, e.g., frameworks, cloud storage, etc., and what you actually designed and coded. Include the database tables, classes, methods, algorithms, UI designs, etc., used in the various components of the overall task. Relevant technical discussions should be inserted as needed, but if they are too bulky or do not continue the flow of discussion, put them into appendices and cite accordingly. **Conclude this section with a brief description of any alternate designs that you considered and explain why the final design was chosen.**

Results

Tell what came of it all. Give the punchline first, then the details. It is a good idea to present the results of component tasks in the same order used to discuss those tasks in the design. Use visual aids, such as screen shots, wherever appropriate to add clarity to an otherwise obscure discussion. Small code samples are appropriate here, but code listings, if any, should be put in appendices.

Conclusion(s)

The reader may wonder "so what?"; this section should tell them. If you have recommendations to make, you can add another section with that title, or you can include them here. Implications for future work can also be presented here or in a separate "Future Work" section. Note that any ideas you have for <u>how</u> to do the follow-on work are ordinarily reserved for another proposal. If additional work seems appropriate, suggest it to the sponsor.

References

Provide a complete list of all references cited in the report in a suitable format. The referencing requirement is to list and number each reference. References should be listed in either the order they are used in the report, or in alphabetical order by author/organization. When citing them in the text, use the corresponding reference number.

Biography

Provide a short biography of yourself. It should include your immediate future plans after graduation. It also may include other information such as: where you are from, kinds of activities you enjoy, anything noteworthy that you have done, long-term plans, etc.

Appendices

Extensive side discussions, lists of data, code listings, etc. are packaged by topics in separate appendices. The order of presentation should follow the order in which they were mentioned in the main body of the report. Note that it is not necessary to provide the entire code listing for a project in this report.

Notes on preparation

The prose in a technical report should follow standard English usage for this type of document. In particular, it should not be "folksy" in tone except in rare cases where such language would enhance the reader's understanding. Likewise, use of contractions and the second person pronoun ("you") is generally discouraged. The report should use technical vocabulary as appropriate, but also define them on first use.

A good outline is indispensable in turning out a coherent report; it will keep you from omitting things or repeating yourself. A detailed outline is especially valuable if you parcel out sections in a team project. A team report written in this manner will need to have one person do a rewrite to make the style and vocabulary consistent.

When you have "completed" the report, it is helpful to put it aside for a few days and then read it in its entirety. Not only will you catch errors that were overlooked in proofing, but you may also become aware of omissions, redundancies, and obscurities. An "outside" reader—someone unfamiliar with the project—can provide another good check on clarity.

Formatting Requirements

- File type: A PDF version of the report must be submitted to the course coordinator.
- Title Page: The title must be centered with at least a one and one-half inch margin on the left and right. Times New Roman typeface is required, bold faced, 14 point.
- Author, Program, University, and Date: The author name(s) should be centered below the title with two spaces between the two. There should be a one and a half inch margin on the left and right. 'Times New Roman' typeface is required, bold faced, 12 point.

- Abstract: The abstract should be appear on the title page 2 inches below the title and author information with the heading word "ABSTRACT" above the abstract paragraph.
- Page numbers: **DO NOT** number the pages.
- Header and footer: **DO NOT** use a header or a footer in your paper. Leave this space blank and it will be added later.
- Headings: Use headings for all major sections. They may be numbered or unnumbered. The headings should be left justified in all uppercase using Times New Roman 12 point. Subheadings should be left justified in mixed case and in italics.
- Front matter: The Acknowledgment section should start on a new page, followed by the List of Figures and the List of Tables.
- Body of the report: The body of the report begins with the Introduction section starting on a new page. Subsequent sections optionally may start on a new page. There should be a 1 inch margin all around in one column format, left justification, skipping one line between paragraphs. Times New Roman typeface is required, 12 point, using only standard symbols and abbreviations in text and illustrations.
- Figures and tables: Figures and tables should be incorporated in the report text. All figures must be numbered consecutively and captioned. All tables must be numbered consecutively (but separately from the figures) and captioned. Figures and tables copied from other sources must have an appropriate reference citation at the end of the caption. All figures and tables must be referenced in the report body as "Figure X" or "Table Y".
- References: References should follow the body of the paper with 4 spaces between it and the last sentence of the paper. Times New Roman typeface is required, 10 point. Citations should be either in superscript form, or in "[#]" form.
- Biography: Each author should include a short biography. Put this information below the bibliographic information with 4 spaces between it and the end of the bibliographic data. Times New Roman typeface is required, 10 point.
- Appendices: Appendices should start on a separate page after the biography in the standard page format.