

Project Proposal: Design Approach

- The design approach is the “meat” of the senior project proposal. It describes the plan of how the project will be implemented.
- Typically, the design approach section is 10-15 pages of the proposal.

System Overview

- Generally, the design approach section of the proposal starts with a system overview.
- An introductory paragraph should layout the different parts of the project (its functional decomposition) and how they are connected with each other.

System Overview

- A block diagram of the functional decomposition of the project and how they are connected is useful for as part of the system overview.

Functional Decomposition

- Projects may be decomposed into functional areas in different ways. Most common are:
 - Frontend (UI) and backend (server)
 - Data objects and algorithms
- Most projects have some of each. E.g., a backend might consist of several data objects and algorithms.

Third-Party Subsystems

- Third-party subsystems that will be used should be identified as such. This includes:
 - Sponsor-provided subsystems such as databases and servers
 - Open-source or proprietary code frameworks and libraries
- Describe what these are and how they will be used.

Implementation

- Implementation information might include:
 - Technology/language that will be used
 - One or more data object definitions – description of attributes and methods
 - One or more algorithms to be used – summarized and how they are applied in the project

Design Evaluation/Conclusion

- Each functional area must be evaluated to show how it supports one or more of the specifications
- The goal is to be able to conclude that by implementing the proposed design, that **all** of the specifications will be met, and thus the problem will be solved.

Conclusion

- In addition to the design evaluation, the conclusion also should include:
 - Qualifications of the project engineer. That is, what makes you the right person to build this project. Give the courses you have taken or skills you have that are relevant to the project.

Conclusion

- Estimate of materials and costs including the number of hours you expect to work on the project. This should be no less than 100 hours. Typical projects have logged 150-200 hours. If hardware or other resources will be provided by the sponsor, say so.

Conclusion

- A schedule for the work to be done on the project starting with summer break. Typically the schedule is organized by weeks or by functional areas.
 - Give a description of the tasks to be completed and the number of hours that will be spent for each unit.
 - Note the project is expected to be demonstrated during the final presentations in early December.

Complete Draft of Proposal

- A **complete** draft of the project proposal in PDF format must be submitted to LiveText no later than 11:59pm, Thursday, April 13 (day before Easter break).
- “**Complete**” means **all** sections of the proposal must be present, and it must be formatted as specified in the posted guidelines.

Complete Draft of Proposal

- You must meet with your project advisor at least once before you submit your complete draft to LiveText, and you also should email a copy of the draft to your project advisor.
- The rest of these slides describes the remaining sections and/or formatting notes for the complete proposal.

Abstract

- As noted in the guidelines, the Abstract goes on the title page.
- An abstract is a short paragraph summary of the entire project
 - What is the problem?
 - How is the problem addressed by this project?
- Goal is to make the reader want to know more.

Introduction

- The introduction is a 1-3 paragraph summary of the entire project.
- Give the **highlights** of the proposal. Enough for the reader to understand the significance of your project.
- Again the goal is to make the reader want to know more.

Figures and Tables

- Figures and tables must be numbered and have a caption. E.g.,
Figure 3: System Overview Diagram
- Figures and tables must be referenced by number in the proposal text. E.g.,
“The system diagram shown in Figure 3...”
- If a figure was copied, a citation to the source should be included as part of the caption.

References

- Reference list should be ordered either by appearance in the document or by first author last name (or organization name).
- Reference list should be numbered in order. Citations should use these numbers. Citations should either be superscript[#] or [#].