TITLE
Senior Project Requirements

Fall 2023 & Spring 2024

Peter C. Chapin <peter.chapin@vermontstate.edu>

Introduction

[In this template, italicized text should be removed and replaced with your text. The italicized text is only intended to describe the contents of each section. Note also that the precise sections and coverage will depend on your project. Some of the advice here may not be applicable to what you are doing.]

Give a brief overview of your project. Explain what your project will do and what problem it solves. This section should be very short, maybe just one paragraph. You've already covered this ground with your proposal so you can probably just take some text from that earlier document.

Functional Requirements

Describe what your project is going to do in <u>concrete, measurable terms, if possible</u>. Categorize your requirements to <u>distinguish the essential ones from the less essential ones</u>. Use-cases are often a good way to capture functional requirements, but other methods can be effective as well, such as writing a complete reference manual. Note that some sort of reference manual (or equivalent) will be part of the required documentation for this course anyway, although the applicability of a reference manual to document functional requirements depends on the project.

<u>Consider the actors who will be interacting with your project</u>, and be sure to comment on your system's <u>user interface</u>. This can also be a good place to identify milestones, but be aware that you will be asked to prepare a separate schedule document.

It is usually a good idea to give individual requirements names so you can talk about them later and so you don't have to worry about renumbering them if (when) you make changes to your list of requirements.

In many requirements documents, the functional requirements are a bulk of the document. If your functional requirements only span a couple of pages, you probably aren't covering enough ground or providing enough detail.

Non-Functional Requirements

Here is where you describe requirements that are not related to the actual operation of your system but that are nevertheless important constraints on your design. Use the headers below to guide the content of this document but don't feel slavishly bound to

them. Some headers may not apply to your system, and other headers not listed here may be applicable.

Platform

What types of computer systems does your project need to support? Which operating systems will you target? Are you going to build a mobile version of your system? If your system is (or contains) a web application, which browsers and which back-end systems will you support?

Performance

What is the minimum number of resources (memory, disk space, etc.) that your project will require? Give specific numbers if possible. Are there any performance critical aspects to your system? If so, what performance constraints do they have? Be specific if possible.

Security

What kinds of attacks must your product be able to resist? What kinds of attacks will your product not necessarily protect against?

User Characteristics

Are the users technically knowledgeable? What skills do you assume the users have? Generally, uses come in several categories (normal users, administrators, etc.). You may have already discussed user categories in your functional requirements, however.

Scale

How large a system must your project support? (Number of users, number of files, number of simultaneous network connections, etc., as appropriate)

Documentation

[This this section, the non-italicized text is a requirement of this course and should be retained.]

1. **Design Documentation**. This document shall be a detailed design that describes how the various components of the system work. It may include block diagrams, schematics, or code snippets, as appropriate. The audience of this document is other developers who might want to understand and extend the system.

2. **User Documentation**. This document shall describe how to install, configure, and use the system. The audience of this document is people who want to use the system without understanding the internal operation of the system. *The reference manual can serve this role, although most users also want more accessible documentation such as a user manual, a tutorial, a "quick start" guide, or some combination of those things.*

3. **Website**. A website shall be produced that describes the system. The audience of this site is potential users considering the system and current users looking for technical support. This site can be hosted anywhere that is convenient. *For example, the GitHub Wiki for your project or on Lemuria.*

Data Formats

What kind of input/output formats must your project be able to handle? This is particularly relevant if there are standard formats to consider. You may also need to discuss interfacing requirements: in what way will your system interface with other systems? It might be appropriate for interfacing requirements to be under their own header.

Internationalization

Does your project need to support multiple languages or cultures? If it does not, it is best to say so explicitly.

Environment

In what sort of physical environment will your project operate? Is it required to work in adverse conditions such as high or low temperatures, under water, or high vibration?

Expected Enhancements

What sort of enhancements are likely? The answer to this question may impact how your system is organized.

Date

The final presentation will be on or about the last day of classes of the Spring 2024 semester. The final demonstration *(if needed)* and the documentation will be due at the end of finals week.