Computer Science Department

Mount Holyoke College

CS 341
Software Design
Project Assignment 1
Project Description
Due: Oct. 25, in class

Objectives

- To define the project that you will be working on for the remainder of the semester.
- To gain experience in planning a project.

Assignment

The purpose of this assignment is to define the project that you will be working on for the remainder of the semester. This document should clearly describe the functionality of the proposed system and avoid discussion of how you will implement the system. Try to keep your expectations realistic, although it is better to be too ambitious at this stage than not ambitious enough. As the project progresses, we can pare back the project goals if they turn out to be too ambitious. Your document should contain the following sections:

1. The purpose of the software. At a high-level, what does the software do? Presumably, it automates some task. What is that task and what are the benefits to automating it? (1-2 paragraphs)
2. The proposed functionality. This section should give a more detailed description of the types of functionality provided by the software. You should talk about broad categories here. For example, if you were describing a browser, one category might be viewing Web pages, another maintaining bookmarks. Given the length of time you have to work on the project, I would not expect more than 2-3 categories. (1-3 paragraphs per category).
3. Expected users. Who do you expect to use this system? This will influence the type of user interface you should provide. (1 paragraph per type of user. 1 type of user is ok if that makes sense for your project).
4. User interface design.
   a. Screen layouts. You should provide drawings of the main screens your software will contain.
   b. Main domain-specific commands. You should identify what the commands will be and what they will do. A domain-specific command is one that is specific to your type of application. In a web browser, these are things like clicking on links, going forward and backward.
   c. Main domain-independent commands. These are the things you would normally find in the File and Edit menus of an application, like Open, Save, Cut, Copy, Paste, etc. Of course, not all applications have these.

5. Non-functional requirements. These are things that you want to be true of the software beyond its functionality. This generally includes things like performance, reliability, security, etc. Most of these things are probably not going to be a concern for you, although performance may be. You should also identify here the package/system you are extending.
6. Challenges. What do you believe will be the difficult parts of carrying out this project? Do you expect there to be tricky algorithms? Is it learning how to work with the system you are extending (learning its API, for example)? Do you need to learn new types of programming, like network programming? Are you sufficiently familiar with the programming language you will be using?
7. Priorities. It is very easy to describe a system that is too much to complete in the time remaining this semester. Review the functionality you've identified above and indicate which pieces are high priority, medium priority and low priority.
8. Individual responsibilities. How do you expect to be able to sub-divide this project among your group members? This is not an absolute commitment, but you should definitely be thinking about how to work as individuals within a team.

Grading

My expectation is that everyone in the group will receive the same grade on each project assignment. As a member of a group, you should each be contributing to project discussions, working on part of what is turned in, and reviewing each other's work. I would encourage you to meet in the next day or two to make a plan and divide the work among yourselves. Set yourselves an internal deadline several days before the assignment is due. At that point, you should combine what you have into one document that each person reviews. Then have another meeting where you discuss improvements that you need to make to improve consistency among the pieces, to fill gaps, to correct problems, etc. Successful group work depends heavily on working over a period of time, not waiting until the day before the assignment is due!

Any group member who is dissatisfied with how the group is performing should feel comfortable discussing this with the group. If problems persist, please bring them to my attention.

Purpose of software	10 points	Domain-independent functionality	10 points
Proposed functionality	15 points	Non-functional requirements	5 points
Expected users	5 points	Challenges	10 points
Screen layouts	15 points	Priorities	10 points
Domain-specific functionality	15 points	Individual responsibilities	5 points

Turning in your work

Please turn in a printed document in class for this assignment.