COSC 735: Software Engineering

First Semester 2016/2017 Session

Assignment 1: Software Project Proposal

Due Date: 10:00AM Saturday 1st April, 2017.

Objectives:

The goal of this assignment is to develop a product idea, not only thinking from the customer's point of view but also considering feasibility by involving a prospective customer during requirement engineering. You are pitching your idea to the course instructor to demonstrate your understanding of relevant Software Engineering concepts, to the customer with the hope that it will be consider for implementation, and to other students in order to attract them to work on your project. Such a proposal is sometimes called a "Lifecycle Objectives" or LCO document. You will create a detail (1–7 pages) written description and a set of at most 10 slides.

Process:

Software project proposal, selection, and presentation modalities will tentatively proceed as follows:

1. **Work individually** to brainstorm on possible project ideas that meet the constraints given below and then concentrate on fleshing out one idea into a detail proposal.
2. Create two items (requirements for these items are described in more detail under **Deliverables** later in this document), and do all requirement, analysis, design and so on before submitting:
    a. a written 1–7 pages description of the project - in a written document you can discuss more details and nuances than you can fit into 10 slides.
    b. a set of 1–10 slides (no more than 10 including the title slide if any), giving a very high-level overview of the most important points, and including a diagram - slides are more suited to visual presentation of information although they can certainly include short text phrases.
3. Submit project detail report and slides latest by **10:00AM on Saturday 1st April, 2017** (via email). Be prepare to present your project proposal in class on **Saturday 8th April, 2017**. Presentations will be scheduled weekly and low-stress, but come prepared to describe your proposal to the rest of the class.
4. The Instructor will evaluate projects for credits (marks) and feasibility.

Project Constraints:

Any proposed project has to meet the following constraints:

- The project should have **some connection to the real world**. This rules out any game proposals. The projects should satisfy someone's need for computation or automation — maybe even your own.
- The project must have some non-trivial data component. Briefly mention what specific data you will access/store.
- The project must involve **communication outside of a single computer** or device (e.g., be network-enabled, have a client-server component, fetch web or GPS data, etc.).
- This must **be a new project.** Your product should either cover new territory or have compelling feature(s) that would make your customer select it over related products.
- You may **not receive monetary compensation or credit** in another course for working on this project. You are allowed to create something that you think could generate revenue for you in the future, but not to do a project for a particular paying boss/client/organization.

Deliverables:

Your proposal will consist of both

- a 1–7 page written description, and
- a 1–10 slides presentation (including the title slide, if any).

Both deliverables address similar issues (project vision, high-level software architecture, and risks), although in different ways. Be sure to include in each, among any other points, the following:

Vision

1. What is your product, on a high level?
2. Whom is it for?
3. What problem does it solve?
4. What alternatives are available?
5. Why is this project compelling and worth developing?
6. Describe the top-level objectives, target users, target customers, and scope of your product.
7. What are the competitors and what is novel in your approach?
8. Project cost implication.
9. Feasibility indicators.

Software Architecture

1. Make it clear that the system can be built, making good use of the available resources and technology.
2. Describe at a very high level the system's architecture, identifying the components/modules that will interact.
3. How will you implement the functionality?
4. What is interesting about this project from a technical point of view?
5. Optionally, what languages/toolkits do you propose to use for the development?

Challenges and Risks

1. What is the single most serious challenge you see in developing the product on schedule?
2. How will you minimize or mitigate the risk?

Submit the project description report (written document) in PDF and the presentation (slides) in PPT formats to course instructor's email address on the contact page of my website. You are advice to adhere strictly to the guideline provided above.