

Project Proposal Milestone

Goal: To generate project ideas and expose them for others to see and think about

Due Dates:

Part I: Electronic submission – Wednesday, June 28 @ 10pm

Part II: In-class presentation – Thursday, June 29, in class

Submission: A turn-in link will be made available on the course web shortly.

Introduction

Your primary task in this assignment is:

(a) to describe the product you are proposing so that other students in the class can understand what it is, and

(b) to describe the architecture so that it becomes clear that the system you are proposing can be built given the available resources (time, people, technology, etc.).

In the literature [2], this task is sometimes referred to as the Life Cycle Objectives (LCO) milestone review for a proposed product.

The specific deliverables are identified in the ‘Deliverables’ section below.

Mechanics

You will be working in teams of two¹ for this assignment only, so you need to choose a partner.

As soon as you have found one, please let us know the names and emails of both partners – email this information to both the instructor and the TA.

After turning in your project proposal (LCO materials), you will get a chance to present it to the class. Then, everyone will have a short time to review all the materials (online) and, along with their impressions from the in-class presentations, to vote on which of the candidate projects they feel are most compelling to work on. We will gather all votes and based on them will assign larger teams for the rest of the quarter to actually build those products that were perceived as most promising.

Product Requirements

The functionality performed by your product is entirely up to you. With this assignment, you have a chance to propose a product that you think is interesting and valuable (to some audience), and if you can convince your fellow classmates to join you, that product can then be designed and built in a team environment. This will give you practice working in a team to build a real product by using the processes and techniques discussed in class.

The one constraint that your proposed product must obey is conforming to the overarching theme of “remote collaboration.” (Please ask if you are not sure whether your initial ideas fall into that category.) One implication of this is that it is likely to be based on a client / server networked (n-

¹ In special circumstances, we may allow teams of different sizes.

tier) architecture, or a peer-to-peer architecture. You will be expected to carefully define the interface between the client and the server (or peers) as the product is designed and built.

Tip: Design and development of the server side may be a large or small part of the project. A typical design will include an interface definition and a backend capability. The backend may require significant development (e.g., database management, data collection and fusion) or it may not. Integrating and wrapping existing services (i.e., Google) is another approach to providing a server side capability. However, you will need to ensure that the programming interface your software will connect to already exists.

The client selection is up to you, as appropriate to the intended usage. Portable, laptop, and desktop clients running as standalone applications or using a browser are all possibilities.

Life Cycle Model

We will be following a spiral lifecycle model [1] augmented with desirable aspects of other models (e.g., staged delivery, evolutionary prototyping, design-to-schedule) in the project activities of this class. This assignment can be thought of as an early (spiral) turn around the lifecycle. The milestone at the end of this turn is referred to as the Life Cycle Objectives Review. This review is the tool to help you and help the other designers and developers in the class to decide which projects are both worthwhile and practical. Understandably, some project ideas will not go beyond this stage, while the others will be staffed and implemented.

Life Cycle Objectives Review

The generic elements of the LCO Review milestone are:

1. Operational concepts – What is it (at a high level)?
Description of the high-level system objectives and scope
2. System requirements – What does it do (specifically for the application)?
Description of the essential system features
3. System and software architecture – How does it work?
Feasibility analysis at the level of the architecture, including a high-level sketch of the components and how they will integrate.
4. Life cycle plan – Who wants it? Who'll develop and support it? How and when?
Identification of the major stakeholders now and in the future, their roles and responsibilities, and a proposed high-level timeline of the project
5. Feasibility rationale – Is this really true?
Evaluation of the conceptual integrity and compatibility, identification of risks, overall feasibility of the project

For more information on the content of these components and an LCO Review in general, please refer to the lecture slides from the Lifecycle Objectives Review session, available on the course web. Also, you may find the article by Boehm [2] helpful.

Evaluation

Your grade on this assignment will *not* depend on whether or not your proposed project goes beyond this step. An LCO review that clearly identifies the benefits, risks, and costs is valuable in its own right, and will be rewarded as such.

In our evaluation of your work, we will be looking to see that you have addressed all the necessary elements of an LCO review (see above), that you have made reasonable judgments concerning these elements, and that you have organized and presented your work well. You will be expected to argue why you believe your proposed product is an instance of the broader “remote collaboration” theme. As part of that, we ask that you carefully and define the various components of your product and the interfaces between them.

Technological Resources

The department gives us access to web servers and database servers for your use, if needed. If your product will depend on the availability of a special software, we may or may not be able to get you access to it, so be sure to ask as early as possible.

Deliverables

We will expect to see the following deliverables from each group:

1) A written analysis of the LCO elements (10 points) – addressing each of the five LCO elements listed above, as appropriate for your product. This should be about 3 pages long, with an absolute maximum of 5 pages, including diagrams. Remember that conciseness is a virtue!

2) An overview presentation (5 points) – a set of PowerPoint presentation slides that summarize the five LCO elements for your product. This is the pitch that your team will give to the class and any guests we may have in the room. We expect to have 4-5 teams to get through in the 1 hour slot, so time your pitch to last no more than 10 minutes, including time for questions within that period. We recommend that you rehearse your presentation, and we ask that all group members participate in the presentation.

Tip: In wrestling about what to include in your presentation versus what to omit from it you will discover that you are asking yourself the same type of questions that your audience will wonder about as they listen to your pitch. One such question is, “What is the most important thing that distinguishes this project from all others?” Another one is, “Hasn’t this been built already by company X?” (or, “Isn’t this already available on the web?”). Try to proactively address these and other similar questions.

References

[1] *Rapid Development*, Steve McConnell.

[2] *Anchoring the Software Process*, Barry Boehm (USC),
<http://citeseer.ist.psu.edu/boehm95anchoring.html>

Turn-in

Please have one person from each team do the turn-in so that both files from your group appear in the same place. There will be a turn-in link on the course web page soon.