

Due date

This homework is **due before noon, Wednesday, April 14**. You will present the review in class that day or in section the following day, Thursday April 15. The turn in link is on the class calendar page.

Introduction to Homework 1

The purpose of homework 1 is to develop and present the Life Cycle Objectives milestone review (LCO) for a proposed product. You will be working individually or in teams of two or three for this homework. There is a link for identifying the teams on the web calendar entry for Tuesday April 6. Please go sign up either as an individual or a team member.

The fundamental goal of this homework is to get good ideas out on the table and expose them for others to see and think about. Your primary job in the LCO is to describe the product so that people understand what it is and to describe the architecture so that it is clear that the system can be built.

You will present your LCO material to the class after turning it in, and then we will reorganize into larger teams to actually build those products that you feel are the strongest and most interesting candidates.

Outline

We are following a spiral life cycle model in the activities of this class. This homework can be thought of as an early turn around the life cycle. The milestone at the end of this turn is the Life Cycle Objectives Review. This review is a tool to help you and the other designers and developers in the class decide which projects are interesting and practical. Some projects will not go beyond this stage, and the others will be staffed up and implemented.

Your grade on this homework is not determined by whether or not the project goes beyond this step. A good LCO review that clearly identifies the benefits, risks and costs is valuable in either case. We will be looking to see that you have addressed the identified elements and have made reasonable judgements concerning them. Refer to the lectures and the Boehm paper for more information about the content of the LCO review.

Remember that this presentation is the basis for each of you deciding which projects you would like to work on. You will indicate preferences after these reviews and I will assign teams based on those preferences.

Life Cycle Objectives

The generic elements of the Life Cycle Objectives milestone are:

1. Operational Concepts - What is it?
Top level system objectives and scope

2. System Requirements - What does it do for us?
Essential system features at an appropriate level
3. System and software architecture - How?
Support analysis of feasibility at this level
4. Lifecycle plan - Who wants it? Who'll support it?
Identification of the major stakeholders now, future
5. Feasibility Rationale - Is this really true?
Evaluate conceptual integrity and compatibility

Constraints

The function 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 if you can convince a small team of people, you can then design and build it in a team environment. This will give you practice working in a team with the processes we've discussed in class, and also be a chance to build something you think is interesting.

The design must be based on a client / server architecture. You will be expected to do a good job defining the interface between the client and the server as the project is designed and built. To facilitate this, you are required to define the server as a web service, accessible from one or more clients.

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 (eg, game server, database management, data collection and fusion) or it may not. Integrating and wrapping existing services (eg, Google, MapPoint) is another approach to providing a server side capability. We have access to database servers in the department for your use if needed. (We also have a large database of approximately 300,000 spam emails if you would like to use that as a data source.)

The client host selection is up to you, as appropriate to the intended usage. Desktop and laptop clients running as standalone applications or using a browser are okay. A portable client on a PDA or phone is also okay. A truly useful application is likely to include a mix of clients.

We are working with Microsoft to get access to services and tools related to mobile clients. Details will be provided in lecture.

If the interface is well defined and the service provided is interesting enough, it is possible that more than one group will want to define and build clients for the same service. This is okay, but not required.

Deliverables

1. An overview presentation. A set of Powerpoint presentation slides that summarizes the LCO elements for your product. This is the pitch that you will give to the class.
2. A written analysis of the LCO elements. This should address each of the five LCO elements listed above, as appropriate for your product. This should be 3 to 5 pages long, no longer.

References

Rapid Development, McConnell

Anchoring the Software Process, Barry Boehm, USC
<http://citeseer.nj.nec.com/boehm95anchoring.html>

Turnin

Please have one person do the turnin so that both files from your group are in the same place. There is a turn in link on the class calendar page.

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