Lab 3: Project Planning and Prototype Construction

1. OBJECTIVE

1) Define processes for the project development life cycle.
2) Develop a prototype system to form the basis of the software development of the full product.
3) Prepare Project Plan.
4) Risk Management.

2. LABORATORY

This lab will be conducted in the Software Lab 3 (N4-B1C-14) in SCSE.

3. EQUIPMENT

- PCs (Windows OS)
- IDE, Development Framework, Emulator

4. INTRODUCTION and SCOPE

In the last lab, your team has planned for the quality management for your product. In this lab, the scope will be for you to continue to plan for other aspects of the project, e.g. including identifying key engineering activities, takes and their deadlines. You should also continue discussing the prototype building among the developers. These should be documented in your meeting minutes. After class, you should continue to study further in order to complete scheduling of the entire proposed project. In parallel, you should have kicked off constructing the prototype and spend inclusively three weeks to one month in constructing the prototype to demonstrate the software product.

Project plan includes many activities such as effort estimation, duration of the development, lifecycle selection, resource assignment, and scheduling, etc.

An important activity during planning is to plan the risk management so that if any predicted risk really occurs, the corresponding actions would be taken according to the plan.

5. EXPERIMENT

5.1 Hold the team meeting and complete the meeting minutes

In the meeting, the deliverables of this lab are discussed. Tasks and deadlines are identified and the tasks should be assigned. By end of the lab session, the minutes should be shown to the lab supervisor and

submitted to the Wiki. In the minutes, the five elements for software estimation should be included and a list of risks to be addressed should be identified as well as the status of prototype system and any update should be reported.

5.2 Continuing and Completing Prototyping

Based on the discussions on prototyping in Lab 2, the develop team of the project team shall have gone well into prototyping of the software product in the proposed project.

The entire team shall discuss several tools for development team to use and several "best practices" well accepted by the industry for the development and entire team to adopt. Especially, the development team must start using required tools including Github (or other version control software such as Git) during the development. Development team shall also consider start practicing "best practices" of continuous integration to enable future configuration management planning and requirements.

5.3 Prepare Project Plan

Planning methods such as the software estimation techniques, critical path analysis methods, bar chart scheduler should be used for preparing the project plan.

In particular, the Development Team needs to provide time estimations based on their experience during prototyping. With this input, the Project Manager can then perform resource allocation and plan the schedule so as to work within the various constraints and deliver the requirements specified within the delivery timelines.

Subsequent project monitoring and control involves reviewing the project progress on a regular basis and taking corrective action to bring the actual project implementation as close as possible to the planned.

Significant deviation which may delay delivery must be flagged and brought to the customer's attention immediately.

5.4 Prepare Risk Management

Identify the possible risks during the project development, prepare the risk management strategies.

6. DELIVERABLES

The following items should be delivered by the end of the in-class lab session:

1. Meeting minutes of the in-class discussion

Have the following ready (hosted/uploaded/compiled) by the next lab session:

2. Wiki: Project Plan
3. Wiki: Risk Management
4. Demo: Prototype ready for simple demo and support for the design and lab results
5. Github: Prototype related items, such as code, documents, slides, video clips, etc.
6. Wiki: Backlog
7. Wiki: Meeting minutes