Software Project Management Plan

Learning Management System for CS 3321

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# **Overview**

## **Project summary**

## The Learning Management system only stores and retrieves students’ partial information in the current semester and other basic information including student’s name, student’s ID, registered courses in the current semester, each exam’s score in one course, GPA calculation in the current semester.

### **Purpose, scope, and objectives**

### The purpose is to design and code a working LMS. The system should have two types of accessing modes, administrator and user. It is the job of the administrator to insert, update, and monitor the whole process. When a user log-in to the system, he/she would only view details of the student and can't perform any changes.

### **Assumptions and constraints**

### The assumption is that the all team members will contribute to the project. Since LMS already exist in many platforms such as blackboard, the team will research and test components. Constraints are no financial resources are available and staff only consist of present team members.

### **Project deliverables**

### Team shall produce a working LMS. Software project shall be delivered no later then May 3. Assignment focus on the artifacts such as requirement documentation, SPMP, UML diagrams (like Use Case Diagram), test cases, and GitHub version control to be turn in with the project.

### **Schedule summary**

### Project grant chart schedule

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Schedule |  |  |  |  |  |  |  |
| Requirement phase |  |  |  |  |  |  |  |
| Analysis phase |  |  |  |  |  |  |  |
| Design phase |  |  |  |  |  |  |  |
| Implementation phase |  |  |  |  |  |  |  |
| Test and Maintenance phase |  |  |  |  |  |  |  |
| Dates | 3/23 | 3/29 | 4/5 | 4/12 | 4/19 | 4/26 | 5/3 |

## **Evolution of the project management plan**

## Any changes and additions on the SPMP will be at version control and within the start to due date of the LMS project. The SPMP will update when issues or changes are need during the development process including documentation.

# **Reference materials**

# IEEE Std 1058-1998, IEEE Standard for Software Project Management Plans, IEEE 1998.

# Momiroski, Goran. “Software Project Management Plan version 1” 2003. PDF File

# **Definitions and acronyms**

# LMS - Learning Management system

# SPMP – Software Project Management Plan

# LOC - Line of code

# UML – Unified Modeling Language

COCOMO - Constructive Cost Model

# **Project organization**

## **External interface**

## There is no client to meet, but the team will discuss about the project assignment sheet in blackboard under CS 3321.

## **Internal structure**

## The team structure is the Chief Programmer Team. Since only 3 members are in the team, the roles are modified for specializing certain required roles. One will lead the team in developing and coding the project software. Others focus in planning, assist in documenting project data, record test data, define artifacts, drawing diagrams, and list use cases.

## **Roles and responsibilities**

Thien Duong as team leader and Programmer Chief

Responsibilities:

* Lead the team in project development
* Provide advice and keep track of team progress
* Help other team members resolve issues
* Lead team in meetings on track of development
* Lead team into design and implementing the product
* Lead in development testing

## Thuan Pham as Project planning manager

## Responsibilities:

# Create and update the SPMP

# Lead in project planning

# Remind of project scheduling

# Assist in documentation

# Oversee on progress is under planned standards

## Vuong Hoang as Documentation and process manager

## Responsibilities:

# Record documentation

# Keep track of development quality

# Create list of requirements and use cases

# Analyze and develop requirements for documentation and design

# Record software test results

# **Managerial Process Plans**

## **Start-up plan**

### **Estimation plan**

### Estimate the duration and cost using Metric for product size. Use Constructive Cost Model algorithm to compute project estimation.

### **Staffing plan**

### Staffing is constant though out planning and development. Team members are mentioned on section 4 in team internal structure.

### **Resource acquisition plan**

### Production are used on current available hardware such as personal and public computers. Software for coding is on Virtual Studio Code in C++ language. No further resources are required but will be optional.

### **Project staff training plan**

### Project team should be encouraged to advise and assist each other if there is a unresolved issue during the development process. Project members should be informed of method of communication to each other by text, phone, and/or email. Team must be educated during the process by learning in class by the professor of CS3321.

## **Work plan**

### **Work activities**

### Team members are encouraged to contribute to at least 8 hours a week in the project. Meetings are conducted once a week face-to-face or online under zoom meeting application to monitor project progress and assistance on unresolved issues. The chart below list task for each workflow for each week.

|  |  |  |
| --- | --- | --- |
| Tasks | Start date | Due date |
| Requirement Workflow | 3/23/2020 | 3/29/2020 |
| Requirement collecting |  |  |
| Use case listing |  |  |
| Requirement analysis |  |  |
| Analysis Workflow | 3/29//2020 | 4/5/2020 |
| Requirements documentation |  |  |
| Version control (GitHub setup) |  |  |
| Class extraction |  |  |
| Design Workflow | 4/5/2020 | 4/12/2020 |
| UML Diagrams |  |  |
| Artifacts Documentation |  |  |
| Implementation Workflow | 4/12/2020 | 4/26/2020 |
| Coding and implementing |  |  |
| Artifacts testing |  |  |
| Documented results and update |  |  |
| Testing Workflow | 4/26/2020 | 3/5/2020 |
| Inspection preparation |  |  |
| Faults and risk management |  |  |
| Acceptance testing |  |  |
| Final check |  |  |

### **Schedule allocation**

### Task of each team member will be assigned during each workflow. Tasks should be adjusted equally by allowing other member to assist if one work load is viewed over or under capacity.

### **Resource allocation**

### Resources are constant and can be shared among team members. All finished artifacts and coded software are access on GitHub for team member use.

## **Control plan**

### **Requirement control plan**

### Requirements are reviewed during analysis phase along with use cases. Before design phase, requirement must be fully listed.

### **Schedule control plan**

### Review on project progress will be discuss during scheduled weekly meetings. Reminders of scheduled time stamp are announced by project planning manager.

### **Quality control plan**

### Manage the quality of the process during development by:

# Quality of the artifacts

# Overview the software if matches the requirement

# Record and remove any faults or defects

### **Reporting plan**

### Reports are collected during team meetings of each week. Reports are external if information of issues or resolution are founded during the weekly meeting. internal reports will be stated during the week and will be sent to the team leader by via email or text.

### **Metrics collection plan**

### List of items to count:

# Line of code (LOC)

# Number of faults during processing

* Number of estimated hours a week per member

## **Risk management plan**

## Faults and defects are monitored to provide standard quality mention in quality control plan. Manage risk by detecting during inspection on the performance of working components on test phase. Any risks detected are recorded and process for solution.

## **Project close-out plan**

## As the project end on May 3, the team will:

# Plan project presentation

# Turn in all copies of artifacts

# Store all project artifacts into GitHub repositories

# **Technical process plans**

## **Process model**

## Project is organized for each workflow to follow estimated plan for achieving standardize quality and have development ready to be turn in on May 3rd.

# Requirement workflow will consist of project planning, understanding requirements and educating on the workflows of software development.

# Analysis workflow will analyze requirement items, produce data to record for documentation and support setting up for the design phase.

# Design workflow gather data to assist designing UML diagrams and design class components and artifacts.

# Implementation workflow process into coding and determine early defects to remove and update artifacts.

# Test workflow detect remaining faults and conduct acceptance test to determine if the software meets verification and validation standards.

## **Methods, tools, and techniques**

## Team use GROUPME application for texting network. Techniques used are object-oriented. Tools that are used: VScode for C++ programming, GIT, and MS word for documentation

## **Infrastructure plan**

## Workstation for project team are individual hardware that are available for their convenience. All documents and files are shared in GitHub repositories data storage.

## **Product acceptance plan**

## Software must past test for validation and verification. Test are preformed to verify any detected risk in code or components mention in risk management plan. Software is validated using requirement control plan to overview software satisfy all requirements.