Project Assignment 1: Software Requirements

ENPM 611

Assignment

A Learning Management System (LMS) allows students and instructors to interact throughout a lecture. Furthermore, it provides capabilities for these users to manage lecture content, grades and other information across courses and semesters. The Canvas System is an example for a LMS with these features.

For this exercise, we will simulate the elicitation, analysis, and validation of requirements for a LMS. In completing these tasks, you act as the engineering team and the stakeholder. The **Engineering Team** is responsible for deriving a concise set of requirements. The **Stakeholder** states the requirements (verbally or in written form) and validates the requirement models. For this exercise, most of the artifacts will be produced from the perspective of the Engineering Team. Only in the final step of validation will you produce an artifact as the Stakeholder. The teams are paired up as follows: If the Stakeholder is Team n, then the Engineering Team is represented by Team n+1. For instance, Team 4 assumes the Stakeholder role and Team 5 assumes the Engineering role.

For instance, as Team 7, you will be responsible for developing the requirements for the Announcement feature (see last page). But you will also act as the stakeholder to work with Team 6 on the Lecture Information feature.

Tasks

The tasks to be completed are listed below along with the deliverables:

1) Analysis: Model the requirements to develop a better understanding and to be able to confirm with the stakeholder that these are the right requirements.

    a. As the Engineering Team, document the domain in an Entity Relationship Diagram. Model the objects, relationships (including cardinality) and attributes.
    [Artifact: ERD. File name: Team_x_ERD.docx]

    b. As the Engineering Team, formulate the initial requirements set in the User Story format. Follow the guidelines we studied in class about how to derive User Stories. Who are the stakeholders? What are the features? What value does that feature provide? Also, make use to use the INVEST method to evaluate the User Stories.

    c. As the Engineering Team, work with the Stakeholder to review the User Stories and prioritize the them using one of the methods discussed in class. In addition to the prioritized list of requirements, also provide a document explains what prioritization technique you chose and why. Describe how you applied that technique to the problem at hand. Finally discuss what the results of the "voting" was.
    [Artifact 1: Result of prioritization procedure. File name: Team_x_Prioritization.docx]
    [Artifact 2: Prioritized list of user stories. File name: Team_x_Prioritized.xlsx]

    d. As the Engineering Team, prepare a use case diagram that shows all the use cases for the requested features. You should also prepare 3 use cases according to the format discussed in class.
    [Artifact: Use Case Diagram & Use Cases. File name: Team_x_Use_Cases.docx]

2) Validation: As the Stakeholder, review the requirements models that the Engineering Team created. How are the requirements models different from what you envisioned the system? Then document issues that you identified.
    [Artifact: Software Requirements Specification. File name: Team_x_Validation.docx]

Upon completion of the project assignment, each team must upload the artifacts that was created by that team. Most artifacts will be for the assigned feature. But the validation document will be for a different feature (the one for which you are the stakeholder).

The **artifacts** that are expected are:

1. Entity Relationship Diagram. File name: Team_x_ERD.docx
2. A prioritized list of user stories. File name: Team_x_Prioritized.docx
3. The description of the prioritization procedure. File name: Team_x_Prioritization.docx
4. A Use Case Diagram & Use Cases. File name: Team_x_Use_Cases.docx
5. A summary of issues found in the requirements artifacts. Team_x_Validation.docx

Please make sure that the filenames match the ones given above! You can also submit PDF document with the respective extension. However, the rest of the filename must match.

Features

The list below shows what teams are the stakeholders for what parts of the system. For instance, Team A is the stakeholder for User Management, which means they define what the mission is, what the capabilities are and what requirements satisfy them.

Team 1 - User management: Adding and modifying users, manage user information, manage login credentials, manage assignments of users to courses.

Team 2 - Syllabus: Creating, modifying and displaying syllabus.

Team 3 - Quizzes: Create quizzes, take quizzes, evaluate results.

Team 4 - Assignments: Create assignments, submit assignment, download all assignments (for lecturers)

Team 5 - Lecture videos: Watch videos, manage playlists, annotate videos with notes.

Team 6 - Lecture information and material: add lecture material (e.g., slides), lecture information.

Team 7 - Announcements: Create announcements, follow announcements see all announcements for a course.

Team 8 - Grades: Enter grades, display grades for student, display grades for entire class, compute and display grades statistics.

Team 9 – Discussion Board: Facilitate group discussions about specific lectures and topics. Provide mechanism for answering class related questions in an open, group-driven environment.

Team 10 - Calendar: Communicate important events to students. Communicate Syllabus. Alert students about deadlines.

Team 11 - Modules: Modules divide a class into distinct phases. Each module may have lecture material associated with it, discussion board items, files, quizzes, etc.