



King Fahd University of Petroleum & Minerals College of Computer Sciences and Engineering

Information and Computer Science Department

SWE 215: Software Requirements Engineering (2-3-3)

Fall Semester 2019-2020 (191)

KFUPM has realized that the current maintenance system in place is not up to the mark. The users are extremely unsatisfied with its performance and feel that their time is wasted whenever interacting with it. There are several other issues with it as well that include it being very cumbersome to learn, having no option to track requests being the most annoying ones. In this regard, KFUPM wants you to come up with a software system that can serve the same purpose. The new system will be named “K-Maintenance”.

Your company has been selected to gather the requirements, analyze them, and document them formally into SRS document. This document will later be used as RFP (Request for proposals) for implementing the software system. The duration of the current phase of the project is two calendar months.

The company did an initial brainstorming session and came up with a list of features that need to be studied, analyzed, and developed. The system shall be user friendly, easy and intuitive to use. It should be flexible so that most of the aspects can be configured. Moreover, the system shall be maintainable to enable feature additions, later on.

KFUPM wants the project to be implemented using the simplified Rationale Unified Process (RUP) using UML as a modeling language. All the modeling work should be done on Enterprise Architect tool. MS Project should be used for project management and tracking.

Project Submission Deadlines:

Phase 1: Vision Document [Weight: 15%, Due: Week 5]

1. Introduction Problem statement, needs, and product overview.
2. Product Features and User Requirements It can be a table listing down the key features of the software, their importance (high, medium, and low), and realism (high, medium, and low). You can also attach an Excel sheet (additional)
3. Stakeholders, Users and User Characteristics
 - a. List down the different stakeholders and user groups with brief description for each.
 - b. Under user characteristics you can preferably prepare a table where you briefly note down following characteristics of a user
 - i. Main functionalities, User/user-group,
 - ii. Typical computer literacy,

- iii. Typical educational background <like high school, college degree, medical degree, engineering degree>,
 - iv. Expected frequency of system usage <like once daily, multiple times daily, weekly, monthly, etc.>
 - v. Notes or comments (if any).
 - c. General Constraints
 - d. Assumption and
 - e. Dependencies
- 4. System Requirements
 - a. Use case Diagram

Phase 2 [Weight: 40%, Due: week 8]

- 1. Complete Section 4. System Requirements
 - a. Use case Descriptions
 - b. Non Functional Requirements (product req. + constraints)
 - c. Activity Diagrams

Phase 3 [Weight: 30%, Due: week 12]

- 1. Complete Section 5 from the SRS template: 5. Analysis Models
 - a. Interaction Diagrams
 - b. Class Diagram

Phase 4 [Weight: 15%, Due: week 15]

- 1. Prototype Screen with scenarios
- 2. The complete SRS document (integrated with missing sections included) + Enterprise Architect Model File + Final presentation.

Important Notes:

- 1. State any assumption you make.
- 2. The submissions are due before the lab on the due date. Late submission will not be accepted unless agreed upon.
- 3. Online submissions shall be done in PDF format.
- 4. The hardcopy of the submission should be brought in the lab.
- 5. File naming conventions shall be followed (like Team-X_Submission-X.pdf).

6. While writing the document, it is important to use technical English writing skills with well-formatted document including the cover page (submission details including details like team number, members, and the team leader for the submission), TOC, page numbers etc.
7. Documentation templates and other required templates will be provided as and when required.

Some guidelines for successful project execution

1. One of the team members should play the role of the team leader for a submission. The team leader role should be circulated among team members across different submissions.
2. Treat the instructor as the project manager, and the team leader (as well as team members) can communicate with him to resolve any serious issues.
3. Team leader is responsible to call for meetings and distribution of tasks. The work for a submission should be distributed as equally and fairly as possible including the team leader. Some tasks will need the entire team to work together whereas some tasks can be distributed to members (including the team leader). For example, coming up with the use case model for the system is a team work whereas each member shall be given a set of use cases to write the descriptions for them.
4. Team leader will set internal deadlines for members to submit their work (which shall be few days before the official submission deadline) and the team leader shall be responsible for integrating the submission. After integrating the submission, the team leader can distribute the work product to the team members and get their final comments. Features like 'MS Word - Track Changes' can be used.
5. It is always encouraged to discuss the work (and the submission draft) with the instructor before the official deadline for the submission ends. The instructor can give you feedback, which can improve the quality of the work and submission.
6. The members shall cooperate and coordinate with the team leader in all the work.
7. If any team member is not responding to the team leader or other members of the team in a timely manner, which can result in poor-quality submissions, the team leader shall document this in the submission and the instructor (i.e. the project manager) will look into the issue. If no documentation is available then it will be assumed that no issues were faced and that the whole team will take responsibility for the complete submission.

Enjoy the project!