

Information & Computer Science Department
King Fahd University of Petroleum & Minerals

SWE 312: USER INTERFACE DESIGN
Group Project

Weight: 20%

Final presentations will be held in week 15

Introduction

SWE 312 User Interface Design course requires the study of both theoretical and practical issues in human computer interactions. One way to develop good understanding of the various aspects of user interface design discussed in the class is to exercise these ideas on a real life problem of **novel** nature and of reasonable complexity.

The main objectives of the project are

1. Create user interface designs using the components of different interaction styles
2. Evaluate user interfaces for usability
3. Follow usability engineering principles while designing user interfaces
4. Use different software tools for visual prototyping
5. Demonstrate a prototype of a project
6. Work as a team

Team Formation

All the students in the course will be divided into teams. Number of members in a team can be up to 4. Students are free to form teams. Instructor will form teams for the students who have difficulty in joining some team.

Problem Statement

Develop a user interface for “**Dhahran Health Clinic**”. The system information document is posted in Appendix A of this document.

Work Progression

The project will be completed in phases. The phases of the project will be:

1. Development of use case model and documents, identification of user-groups and associated tasks
2. Development of a paper prototype
3. Development of a software prototype and usability evaluation
4. Improvement of software prototype; and final report and presentation

Project Evaluation

Each phase of the project will be evaluated according to the details given in the “Deliverables” section of this handout.

Programming Environment

Students are free to use any suitable programming environment for prototype development.

Deliverables

All deliverables should be submitted on due date via blackboard.

Phase 1. Development of use case model, identification of user-groups and associated tasks (30% marks) due date 19 October 2019 midnight

- (a) Perform user analysis by identifying the characteristics of the users (such as age, educational background etc.) (Use Appendix B template)
- (b) Perform task analysis by determining the tasks and identify the characteristics of the tasks (such as frequency, required knowledge/skill, etc.) (Use Appendix C template)
- (c) Develop a use case model and use case documents of the system (see appendix D).

Phase 2. Development of a paper prototype (10% marks) due date 2 November 2019 midnight

A user interface design should be developed on paper with appropriate explanatory notes for all screens.

Phase 3. Development of an initial software prototype and usability evaluation (20%+20% marks) due date 30 November 2019 midnight

- (a) Develop a software prototype, which shall be high fidelity (reliability) in look, feel and breadth. Implement all the possible principles and guidelines of a good interface design. (20% marks)
- (b) Conduct usability evaluation for your software prototype to determine its strengths and weaknesses. It is highly recommended to present your prototype to other group for their feedback and evaluation. A brief description of the evaluation process, criteria and evaluation results should be included in your final report. Compile and summarize the results of the evaluation. (20% marks)

Phase 4. Improvement of software prototype; and final presentation (20% marks) (final presentations will be held in week 15)

- (a) Improve the software prototype by taking into consideration the usability evaluation results. Discuss what changes have been made.
- (b) Prepare a final presentation and demo for your project.
- (c) Attendance during the final presentations is mandatory
- (d) Each team will have 20 minutes for presentation, 15 minutes to show the interface and 5 minutes for general discussion
- (e) In the presentation show results from phase 1-4

Your all phases will be evaluated based on the following criteria (except phase 4):

Evaluation Factor	Points Given	Points	Comments
Correctness and Completeness: Document contains accurate information and it covers all applicable sections and items. All use cases and actors have been identified		70	-
Consistency: Document shows consistency throughout the different sections.		10	
Organization: Document exhibits good organization.		10	
Writing Quality: Document contains correct spelling, grammar and an effective writing style.		10	
Total Points		100	

Phase 4 Marking Scheme

Evaluation Factor	Points Given	Points	Comments
Improve the software prototype by taking into consideration the usability evaluation results. Discuss what changes have been made		30	-
Prepare a final presentation and demo for your project.		70	
Total Points		100	

Appendix A: Dhahran Health Clinic

The Dhahran health clinic staff includes five doctors, two registered nurses, three physiotherapists and six office staff workers. The clinic currently has a patient base of 3,500 patients from 275 different employers, many of which provide insurance coverage for employee wellness and health maintenance. Currently, Dhahran accepts 34 different insurance policies.

During analysis you learned that the doctors, nurses and receptionist provide services and perform various medical procedures.

In order to register with the clinic, the receptionist provides patient with medical history and insurance billing forms. The patient completes these forms and returns them to the receptionist. Receptionist of the clinic then creates a patient file and adds patient to current list. Patients can also request to update their records in the clinic. They send the clinic updated information and the receptionist locates patient record and updates them.

The patients request the clinic in order to make any appointment. The receptionist checks the availability and informs the patient. The clinic receptionist mails postcards and calls patients two days before appointment. It is also possible that patient requests new appointment or change. Then the receptionist offers available appointments to the patient and then the receptionist adds appointment and cancels changed appointment if needed.

In order to claim any insurance from the Dhahran Health Clinic hospital, the patient submit claims to the clinic and the clinic receptionist verifies patient insurance carrier and policy number information. Clinic receptionist prepares claims based on medical codes for services provided. Then the receptionist submits claim to insurance agents. Patients also make different payments to the clinic. The receptionist deducts insurance payments and calculates balance due and then prints bill and mails to the patients.

Doctors can store the patient history, prescriptions and any other medical record of the patients for future use. The doctors can also suggest different medical tests such as X-Rays etc which should be stored in the system (i.e., the results of these tests).

Nurses can use the system to enter patient basic medical record such as weight, height and blood pressure etc.

In addition to the above specification/ features, please identify additional features such as:

The system shall provide the following features:

- Log in.
- Sign up.
- Manage patient personal records
- Manage patient medical records
- Manage patient bills
- Manage staff records
- etc

Appendix B: User Characteristics Template

User Characteristics	“Actor 1” Characteristics	"Actor n” Characteristics
Age		
Gender		
Physical Limitations		
Educational Background		
Computer/IT use		

Appendix C: Tasks Characteristics Template

Main Characteristics Questions	Answers
Does the task vary from one occasion to the next?	
How frequently is the task carried out?	
What kinds of skills or knowledge are needed?	
Will the work be done alone or with others	

Appendix D: Use Case Document Template

Use Case Number			
Use Case Name			
Author/Source			
Date of Creation			
Precondition(s)			
Successful Post Condition			
Actors			
Priority			
Related Use Cases			
Flow of Events			
Main Flow			
User Action		System Response	
UA1		SR1	
UA2		SR2	
UA3		SR3	
Alternative 1: Title			
User Action		System Response	
A1.UA1		A1.SR1	
A1.UA2		A1.SR2	
A1.UA3		A1.SR3	
Alternative 2: Title			
User Action		System Response	
A2.UA1		A2.SR1	
A2.UA2		A2.SR2	
A2.UA3		A2.SR3	

Or you can use this template

Name of use case	
Actor:	
Description of use case	

Successful Completion Steps	
Alternative Steps	
Pre-condition:	
Post-Condition:	
Assumptions:	