Project: Customer Requirements

Goals
- Apply various tools and agile principles utilizing concepts (user stories, behavior-driven development) to build quality software.
- Communicate effectively in a variety of professional contexts - talking with customer and writing documentation
- Analyze a complex computing problem by gathering, critically analyzing and evaluating qualitative information to make informed decisions.

Effort: Individual CS3300 Academic Integrity
Points: 60 pts
Deliverables: As separate Word or pdf files (NOT ZIP FILE) include the following documents
- This document containing answers to questions
- Original Interview Worksheet
- One document containing interview results
- Document of problem statement and user stories with BDD scenarios
- One document containing storyboard of lo-fi UI mock-up images
- DO NOT PUT IN A ZIP FILE - UPLOAD AS SEPARATE FILES SO WE CAN GIVE FEEDBACK ON DOCUMENTS IN CANVAS

1 Description

You are going to gather requirements to build an app. Using behavior driven development, create SMART user stories with scenarios based on your customer interactions. You will use this information to build a lo-fi UI mock-up for the pages.

Resources
- Review Lecture and read resource in lecture
- 12 Principles Behind the Agile Manifesto
- What is a Problem Statement in UX? (And How to Write One)

Requirements of Project

You will come up with an idea of an app but your app must
1. Require a login with a username and password to
   ○ Create a new item
   ○ Edit item
   ○ Remove item
2. Created items should be able to be viewed without logging in
   ○ Display condensed list of items created on one page
   ○ Display detailed information about each item individually
   ○ Should have at least three attributes associated with the item. **For example** in portfolio user can add a project that includes required title and description and optional image
3. **You can not make your project the portfolio app.**

2 Problem and Interviews (10 pts)

You are going to make an app that solves a need. Conduct qualitative research to understand the users and their needs in the form of interviews. You should interview 2 to 3 people. You only need to interview them one time.

2.1 Describe the components of a problem statement.

Answer: A problem statement has basically three primary elements: the problem itself, the solution methodology, and the objective of the solution. While describing the problem it should succinctly establish why it is a problem and is important to solve. The solution methodology is not about any specific solution of the problem rather what steps are needed to solve the problem. The objective of the solution states why this solution will achieve and how it is the best optimum solution of the problem.

2.2 What are different ways to gather information from your customer?

Answer: Gathering information from the customer can be achieved through:
1. Survey (online / offline)
2. Interview (in person / virtual)
3. Customer opinion/feedback in social media
4. Direct conversation/interaction with customer

2.2 How do you go about defining your problem statement and understanding the needs of the users using interviews?

Answer: While defining the problem statement I would like to use 4Ws (Who, What, Where, Why) technique. I shall ask the question: who is

impacted by the problem? What is the problem? Where will the users use the solution of the problem? And Why is this important to solve?

Additionally, I prepared the interview sheet to understand the needs of the user from two different stakeholders: administrator, customer. In my interview, I get information about the requirements of the software from the administrator who is the authority of the software. What do they want the software to do? Along with that, I will interview the users/customers of the software who actually use the software.

2.3 Create your worksheet to interview users to develop your problem statement, users stories and acceptance criteria in another document.

2.4 Gather Interview Results from 2 to 3 potential users of the app in another document.

2.5 Define your Problem Statement

Answer:
The Cyber Security Innovation Center (CSIC) faces challenges in efficient allocation of lab rooms to its students. The current manual reservation process is cumbersome and time-consuming for both the lab coordinator and the cyber security students. This inefficiency results in delays, conflicts, and a lack of real-time room availability information. How can I design and implement an automated lab room allocation system that enables students to check real-time room availability, request slots without coordinator approval where applicable, and efficiently manage lab room reservations?

3 Create User Stories (10 pts)

Based on your interviews develop 4-6 user stories
- Written in "Connextra" format
- SMAR (T) that are specific, measurable, achievable and relevant (Do not worry about time boxed)

3.1 Describe the components of a user story and summarize what user stories should and shouldn't be.

Answer:
The components of a user story are:
1. Includes a feature name: This includes what feature that we are talking about
2. A Stakeholder (Who): For whom (the user) we are building the feature.
3. Have some Goal (What): what we are building or what is our goal

with the feature.
   4. Do some tasks (Why): Why we are building the feature or what is the value/benefit of the feature to the user.

A user story should be concise, understandable to the customer and describes only one thing that the software needs to do for the customer.

On the other hand the user story should not be long, should not use unfamiliar technical terms or specific technology to the customer.

3.2 Explain the value in using the user stories methodology with a customer.

Answer:
Value in using the user stories methodology are:
   1. It helps with mapping features.
   2. It helps in creating BDD scenarios.
   3. Customers can easily read and understand the scenarios and can provide feedback.
   4. The user stories help to understand the problem and break it down to a granular level.

3.3 Create your user stories in another document where you will add the BDD scenarios in the next section.

4 Create BDD Scenarios (20 pts)

The BDD scenarios

- Each user story should 2 to 3 scenarios
  - include a "happy" and "sad" scenario.
- Each scenario should have 3 to 8 steps written in the BDD form describing the process
  - Scenario: Title of the condition
  - Given: Represent state of world before event (preconditions)
  - When: Something happens
  - Then: This is the result (postcondition)
  - Optionally And, But

4.1 Explain Behavior Driven Development methodology and include the benefits

Answer:
Behavior Driven Development (BDD) methodology defines an agile lifecycle

of software engineering which asks questions about the behavior of the application before and during development in order to avoid miscommunication. In BDD the requirements are written down as user stories and concentrates the behavior of the application rather than implementation.

The benefits of BDD are:
1. Clear communication with customer
2. Test scenario and documentation creation
3. Early issue detection.
4. Can be serve as test automation

4.2 Describe the components of a BDD scenarios

Answer:
The key components of BDD scenarios are:
1. Feature: It is a short description of the functionality of the app.
2. Scenario: It is the specific title of the condition that illustrates the particular behavior of the feature
3. Given: It represents the state or initial condition of the scenario before the event i.e. the precondition
4. When: It is the event which triggers the behavior.
5. Then: It is the state after the event has occurred i.e. post conditions.
6. And/But: It is an optional component which provides additional clauses.

4.3 Add your scenarios for your users stories to the document you put your user stories.

5 Create StoryBoard of Lo-Fi UI Mockup (20 pts)

Think about the user interface and how users will interact with the pages
- Main Page
- Page that list items for users to see when not logged in
- Page that to display details of an item for someone not logged in
- Login page
- Page that list items when logged in
- Create Item page
- Edit item Page
- Delete Item Page

Lo-fi UI mockup
- Images should be cropped and readable

- 4-6 app pages mocked-up to show how UI changes based on user interactions
- Hand draw on paper, whiteboard or tablet the user experience for your app. Do not use a tool to mock up a web page.

5.1 Explain the benefits in using Lo-Fi Mockups of the web page with the customer.
Answer:

Benefits:
1. It saves investing a lot of time in case the customer does not like the app because it is sketched on a 3x5 paper.
2. It helps non-technical stakeholders easily understand the design.
3. It is sufficient for the developer and customer to agree on what is being built.
4. It is focus on interaction rather than fancy colors and fonts

5.2 Describe what the Lo-Fi storyboard should contain.
Answer:

The lo-fi storyboard should contain:
1. All user interactions with the web app:
     a. Webpages or section of pages
     b. Forms and buttons
     c. pop-ups
2. Illustrate of UI change based on user action
     a. it shows how the sketches interact with each other
     b. Non-linear movie scenes
3. Simple sketches
     a. No fonts or colors
     b. Focus on behavior
     c. Sequence of pages

5.3 Create your storyboard of lo-fi mockups and put images in another document.