CS 441 Software Engineering

Assignment 2

Due on Wednesday, September 25, 2019, 11:59PM.

Individual Portion
1. Create a use case diagram for an online banking system based on the descriptions below (25 points).

The online banking system has two types of users: customer and system admin. Each of them can interact with the system in the following ways.

Customer:
- Open an account (a request will be sent to system admin)
- Close an account (a request will be sent to system admin)
- Check the balance of an account
- Print the statement of an account
- Transfer money between two accounts of the customer
- Transfer money between the customer's account and another customer's account
- Report a problem if a transfer transaction fails.

System Admin:
- Handle the OpenAccount/CloseAccount request from the customer.
- Review the details of a transaction.
- Resolve a problem that the customer reported.

Make use of the inclusion, extension, and generalization relationships as needed.

2. Complete the following use case for the online banking system (15 points). Create at least one MSS and two extension scenarios.

Use Case Name	
Goal	Transfer money from the user's checking account to saving account.
Primary Actor	
Preconditions	
Guarantee(Postconditions)	
Main Success Scenario	
Extensions	

Image that you are a requirement engineer. Choose one of the applications listed below. Work in a group (consisting of three or four students) and create a requirements document for this application. Your requirements document must

(1) Be *correct*, *complete*, *consistent*, *unambiguous*, and *verifiable* as we discussed in class.
(2) Follow the format, structure, and guidelines presented in IEEE Recommended Practice for Software Requirements Specifications.
(3) Be signed by the project owner (i.e., your customer).

Applications:
Note – the descriptions of these applications are the project owners' original words. Some may not be clear or may have errors, which occurs in real software development. Therefore, you need to contact your project owner, interview him/her, clarify the requirements, and present them in a clear and professional way in your document.

Application I (Project Owner: Emily Sorger)

"*For the semester project, I had the idea of creating a mobile social media platform for recipe sharing. Preferably, it would be first developed for IOS using Swift and then later created into a cross platform application if time during the semester allows.*

The recipe sharing will be accomplished by sharing the initial text and pictures of recipes that have been collected by the user either by being passed down through family, learned from other places..etc.

The users on this food social media will post about:

-Type of dish (drink, dessert, soup, salad, breakfast, lunch, dinner, etc..)
-Ingredients
-Step by step description of how to make it. Pictures may be included in this part as well.
-Overall time it takes to prep/create as well as cooking times in the steps.
-Pictures of the finished product -Various ingredients others may want to try or substitute for if their diet requires it
-Level of difficulty of the dish posted. (Easy, Intermediate, Expert)

The application will be able to sort all the above mentioned categories (like level of difficulty, type of dish, length it takes to crease..etc in order for users who are looking to create a dish that's of a certain type, difficulty, length..etc to be able to search through the recipes easily and in an organized fashion.

Users will be able to access certain functions of the application including:

-Creating a user profile with a simple bio describing who they are, what they like to do, and anything else they'd like to add as well as cooking past/cooking experience
-Categories such as desserts, breakfast, lunch, dinner, drinks, specific diets(keto, vegan, vegetarian,etc..), etc..
-Users will be able to follow, like, and comment similar to popular social media platforms making it user friendly and familiar.

If time allows, I would also like to implement the following features:

-Creating a point/experience system based on "upvotes" and the number of people who have tried their recipes. Everyone will start out as an apprentice chef and then upon gaining points will move to line cook, pastry chef, sous chef, executive chef, etc..) and the number of "follows" will give users the ability to gain access to have their pages rated like I, II, III michelin stars for the posted dishes/profiles with experience levels.
-Having premium pages/recipes where users can subscribe to other users with a small fee/donation to the cook/chef for their highly sought after dishes."

Instructor's Note:
1. The two requirements listed under "if time allows …" above should be supported in the final application.
2. The application can also be based on Android.

Application II (Project Owner: Ryan Fang):

"**CSUSM Parking Reservation Application:** *The goal of this app is to help students find parking during peak hours when the main parking lots are generally full. It requires students to register with their unique ID. They will take note of where they parked and set the estimated time that they will be leaving. Any student registered with the app and is looking for parking later in the day may "reserve" the spot. (Since there is no way to really enforce reserved parking there isn't a guarantee). Once the spot has been reserved, it will no longer be displayed.*
Features*:*
- *Specific lot options (PS1, Lot B, C, F etc.) and whether they are full*
- *Search by time of departure*
- *GPS location within in the campus since the lots do not have numbered parking spaces*
- *"Parked" option with time stamp*
- *"Reserve" option*
    - *This will display the users who have logged in their estimated time of departure. (Ex. If I have class at 10:30 am and my last class ends at 2:15 pm, I log in "Parked" that I will be leaving at 2:15 pm. Anyone who may be looking for a spot ahead of time for their 2:30 pm class will be able to reserve the spot).*
- *Notifications*
- *Could possibly add ratings for consistency with departure time or delays*
- *Car model/color but not necessary*
Components*:*
- *User verification*
- *GPS location*

- *Users*
- *Phones*
- *Integration with the digital counters currently displays in front of each parking lot*

Assumptions/Risk*:*

- *Assumes that parked users will leave at their set time of departure. Delays or premature departure could cause issues if someone else takes the spot.*
- *No enforcement could hurt the validity of the application.*"

Instructor's Note:

The final product should be specific to car parking. It should not a general reservation system (e.g., those that are already used for room reservation).

Application III (Project Owner: Jerry Compton):

"I would like to build a web application for students. This web application will serve as a personal planner for students to manage, view, and progress their tasks for school courses. The index page will be where Users login or create account. Must be visually appealing.

Users will be able to:

*1. Create/View/Edit/Delete/Login/Logout **Account***
Accounts will have the following information:
-Name
-username
-password
-Date of Birth
-School Name
-Current Year/Grade in school

*2. Create/Edit/Delete **Course***
Courses will have the following information:
-Meeting days of the week
-Instructor Name
-Color (for viewing in planner)

*3. Create/View/Edit/Delete a **Task** for a corresponding Course*
Tasks will have the following information:
-Title
-Due/Occurrence Date
-Priority Level (Optional) (How many % points is this assignment worth?)
-Priority levels must be signified by Green = Low, Yellow = Mid, Red = High
-Additional Details about task
-Corresponding Course

4.Mark a Task as complete (If task is not marked complete by user by due date, it will be marked as incomplete by system automatically)

*5.View their **Personal Planner Page** (Home Page)*

> *-Will display current day/time at the top.*
> *-Ability to select month to view.*
> *-This Personal Planner will be on its own page and display in a top-to-bottom/vertical and linear like fashion where every day of the selected month is visibly represented on the page.*
> *-If no tasks exist for a day, then nothing will display under the date.*
> *-The User's created Tasks will appear under the appropriate date.*
> *-The Tasks must clearly indicate which Course they are related to and which Priority Level (if priority level was selected).*
> *-Clicking a Task displayed in the planner will prompt to "Mark as Complete?".*
>
> *Also, on this page 'home page', the user's Account and Course information must be displayed along with the option to go 'My Account', 'My Courses' and, 'My Tasks'. Also, a link to a help page with explanations, documentation and instructions for users needing assistance.*"

Instructor's Note:

1. The application should allow a group of users to share a schedule.
2. This should be a mobile application.