CS673 Software Engineering

**HW 2 - Requirement Analysis**

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## **Instructions:**

1. Please name your file as CS673\_yourusername\_hw2.
2. All questions must be answered on an INDIVIDUAL basis. If your answer is inspired by the discussion with other students, you need mention their names in your acknowledgement section.
3. All papers required to read are posted in the “Lecture Notes” folder on blackboard course site.
4. State clearly all your assumptions if anything is ambiguous. Always ask if you have any questions.
5. Please correctly cite and list any (online) references. Please pay attention to the academic conduct code, particularly the definition of plagiarism.
6. Please submit your homework through blackboard on time.
7. Thank You!

## **Questions:**

1. Create 3 user stories for your group project. For each user story, please include: title, a description using template “As ..., I want to … So that …” , a breakdown of tasks, and the estimation of each task (in terms of person hours), and point assignment for the story and at least 2 acceptance tests using template “Given … When… Then… ”. You shall also input these user stories in the icebox on your project pivotaltracker website. Try not to repeat with your teammates.
2. Based on above 3 user stories, identify three types of domain classes: entity, boundary, and control. For each entity class, specify the essential attributes and operations, and draw a class diagram to show the associations between entity classes.

Please see answer next page

Answer:

We have seven team members. Each member works 8 hours per Sprint. So we have 56 men-hours per week. In case of accidental events, we use 56\*0.7≈40 hours per week. We have 10 points per Sprint, so 4hr equals to 1point.

User story 1: Create new Sprint

As a user, I should be able to have a button to create a new sprint, so that I can move user stories from product backlog to this new sprint.

Tasks(*2 point*)

(1) Create the button to add new sprint (Chrome's new-tab like) (4hr)

(2) Create the entry to retrieve data from database (4hr)

Acceptance Test (1):

Given the project and product backlog are created, and I didn't add any new sprint yet. Then I should be able to see a new tab (named Sprint 1) displayed and there should not have any user stories in this new tab. Also, no warning or errors.

Acceptance Test (2):

Given the project and product backlog are created, and I already added multiple sprints into the project, and the amount of these existed is smaller than the limitation. (A project cannot have more than 20 sprints). Then I should be able to see a new tab (named Sprint 1) displayed and there should not have any user stories in this new tab. Also, no warning or errors.

Acceptance Test (3):

Given the project and product backlog are created, and I already added multiple sprints into the project, and the amount of these existed is equal to the limitation (20 sprints). Then I should see a pop up alert shows me "cannot add more sprints".

User story 2: Delete A Sprint tab

As a user, I should be able to delete a Sprint tab, so that I can get rid of it if I'm sure it is not useful anymore.

Tasks(*2 points*)

(1) Add a drop-down menu when the user selected and activated current Sprint tab. (4hr)

(2) In that drop-down menu, add a delete option. (2hr)

(3) Pop up window to make sure to delete. (2hr)

Acceptance test (1):

Given a Sprint tab, there is no user stories stored in this tab. Then I can delete this Sprint when I click the delete option in its drop-down menu without any warning and errors.

Acceptance test (2):

Given a Sprint tab, there is at least one user story stored in this tab. Then I should see a warning pop-up window. This window lets me to confirm whether I'm sure delete because the user story stored in this sprint tab will be deleted at the same time. Then if I click "Sure to delete", the tab and user stories stored will be gone. If i click "cancel", nothing should happen. Also, no other warning or error exist.

User story 3: Move user stories from product backlog to sprint backlog

As a user, I should be able to assign a user story from product backlog to sprint backlog, so that I can plan the sprint backlog and decide what should we do during the upcoming spring.

Tasks(3 points)

(1) Add a tab attribute for user stories in database, this attribute can be changed by user. The option of this attribute is decided by existed sprints. (2hr)

(2) Write SQL query and backend PHP to retrieve data and matches to the sprint (4hr)

(3) Create button and drop-down menu as the interface (4hr)

Acceptance test (1):

Given a new project, there are multiple user stories existed, and there is no sprint existed. Then I should see a blank drop-down menu when I click the "move-to-sprint" button (within a specific user story) because there is no sprint existed. No warning and errors.

Acceptance test (2):

Given a new project, there are multiple user stories existed, and there is couple of Sprints already existed, then I should be able to see a drop-down menu includes all existed Sprints name. After I click the sprint name, this user story should not display in "product backlog" tab anymore and it should display in the certain sprint tab (I selected in the drop-down menu).

Class Diagram:

