

Problem Statement

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?

User Stories

1. **Display available slot:** As a student I want an automated lab room reservation webportal so that I can see what rooms/slots are available within a period of time (a week) without logging in.
2. **Current reservation status:** As a student I want to see the current reservation status of a labroom so that I can find a suitable slot for me without logging in.
3. **Add reservation:** As a student I want to securely login using my username and password so that I can reserve a labroom/slot.
4. **Edit reservation:** As a student I want to edit my reservation after securely login using my username and password so that I can change my reservation status.
5. **Delete reservation:** As a student I want to delete my reservation after securely login using my username and password so that other students can use it.
6. **Approve reservation:** As a lab coordinator I want to see any reservation that needs my approval so that I can take quick action.

BDD Scenarios

1.

Path: Happy

Feature: User can display available slot without login

Scenario: Display available slot

- a. Given that the user knows the URL for the labroom slot allocation webportal
- b. When the user navigates the URL in the browser

- c. Then the user can see all the available slots of today displayed in the homepage
- d. And the user has the option to select any date to see the available slots of that that
- e. When the user selects another date then
- f. Then it shows number of available slots for that date

2.

Path: Sad

Feature: User can display available slot without login

Scenario: Display available slot

- a. Given that the user knows the URL for the labroom slot allocation webportal
- b. When the user navigates the URL in the browser
- c. Then the user can see all the available slots for of today displayed in the homepage
- d. And if the user selects another date then it does not show any data due to database error

3.

Path: Happy

Feature: User can click on the labroom to see the current reservation status

Scenario: current reservation status

- a. Given that the user is at the homepage of the webportal
- b. When the user clicks on one of the lab room to check the reservation status of that room
- c. Then a new webpage with all the reservation details such as persons who already reserved different slots and available free slots will appear
- d. And the user can select any free slot for reservation

4.

Path: Sad

Feature: User can click on the labroom to see the current reservation status

Scenario: current reservation status

- a. Given that the user is at the homepage of the webportal
- b. When the user clicks on one of the lab room to check the reservation status of that room

- c. Then no new webpage with all the reservation details is appeared due to database error

5.

Path: Happy

Feature: User can securely log into the portal for reservation

Scenario: User log in

- a. Given that the user is at the homepage of the webportal
- b. When the user clicks on the login button
- c. Then a new webpage with login form will appear
- d. And the user can input the username and the password
- e. When the users click on the submit button
- f. Then the login successful message will appear
- g. And the user homepage will appear

6.

Path: Sad

Feature: User can securely log into the portal for reservation

Scenario: User log in

- a. Given that the user is at the homepage of the webportal
- b. When the user clicks on the login button
- c. Then a new webpage with login form will appear
- d. And the user can input the username and the password
- e. When the user clicks on the submit button
- e. Then the login failed message will appear
- f. And the a 'reset password' button and 'try again' button will appear

7.

Path: Happy

Feature: User can create a new reservation

Scenario: Create/Add reservation

- a. Given that the user is at the user login homepage with his reserved slot displayed
- b. When the user clicks on the add/create reservation
- c. Then create/add a reservation webpage with a reservation form will appear.
- d. And the user provides input detail of the reservation such as labroom number, time, date, purpose
- e. When the user clicks on the create button.

- f. Then the reservation complete message will appear and the webpage will navigate to 'my reservation' page
- g. And the 'my reservation page' will list the reservations.

8.

Path: Sad

Feature: User can create a new reservation

Scenario: Create/Add reservation

- a. Given that the user is at the user login homepage with available slot displayed
- b. When the user clicks on the add/create reservation
- c. Then create/add a reservation webpage with a reservation form will appear.
- d. And the user provides input detail of the reservation such as labroom number, time, date, purpose
- e. When the user will click on the create button.
- f. Then an error message will appear due to input error of a mandatory field or the slot selected is already taken by another user.

9.

Path: Happy

Feature: User can edit a reservation

Scenario: Edit reservation

- a. Given that the user is at the user login homepage with the user slot reservation information
- b. When the user clicks on the desired slot to edit in my reserved slot
- c. Then the reservation information webpage will appear which have two button: edit and delete
- d. When the user will click on the edit button
- e. Then the user can edit the reservation fields
- f. When the user click on save button
- g. Then the 'reservation successfully edited' message will appear and the webpage will navigate to 'my reservation' page
- h. And the 'my reservation page' will list the reservations.

10.

Path: Sad

Feature: User can edit a reservation

Scenario: Edit reservation

- a. Given that the user is at the user login homepage with the user slot reservation information
- b. When the user clicks on the desired slot to edit in my reserved slot
- c. Then the reservation information webpage will appear which have two button: edit and delete
- d. When the user will click on the edit button
- e. Then the user can edit the reservation fields
- f. When the user click on save button
- g. Then the reservation failed message will appear due to incorrect information or the slot selected is already taken by another user.

11.

Path: Happy

Feature: User can delete a reservation

Scenario: Delete reservation

- h. Given that the user is at the user login homepage with the user slot reservation information
- i. When the user click on the desired slot to edit in my reserved slot
- j. Then the reservation information webpage will appear which have two button: edit and delete
- k. When the user will click on the delete button
- l. Then the 'reservation successfully deleted' message will appear and the webpage will navigate to 'my reservation' page
- i. And the 'my reservation page' will list the reservations.

12.

Path: Sad

Feature: User can delete a reservation

Scenario: Delete reservation

- a. Given that the user is at the user login homepage with the user slot reservation information
- b. When the user clicks on the desired slot to edit in my reserved slot
- c. Then the reservation information webpage will appear which have two button: edit and delete
- d. When the user will click on the delete button

- e. Then the 'reservation cannot deleted' message will appear because the reserved time count has started (current time > the reservation start time)

13.

Path: Happy

Feature: Lab coordinator can approve a reservation

Scenario: Approve reservation

- a. Given that the coordinator is at the admin login homepage with the slot reservation request information
- b. When the coordinator click on the desired request to approve
- c. Then the reservation information webpage will appear which have two button: approve and reject
- d. When the user will click on the approve button
- e. Then the 'reservation approved' message will appear and the webpage will navigate to home page
- f. And an email notification will be sent to the requester.

14.

Path: Sad

Feature: Lab coordinator can approve a reservation

Scenario: Reject reservation

- a. Given that the coordinator is at the admin login homepage with the slot reservation request information
- b. When the coordinator click on the desired request to approve
- c. Then the reservation information webpage will appear which have two button: approve and reject
- d. When the user will click on the reject button
- e. Then a new form will appear with a textbox to provide the reason for rejection.
- f. When the coordinator provides the reason and click on submit button
- g. Then 'reservation approved' message will appear and the webpage will navigate to home page
- h. And an email notification will be sent to the requester.