Team 11: Product Backlog

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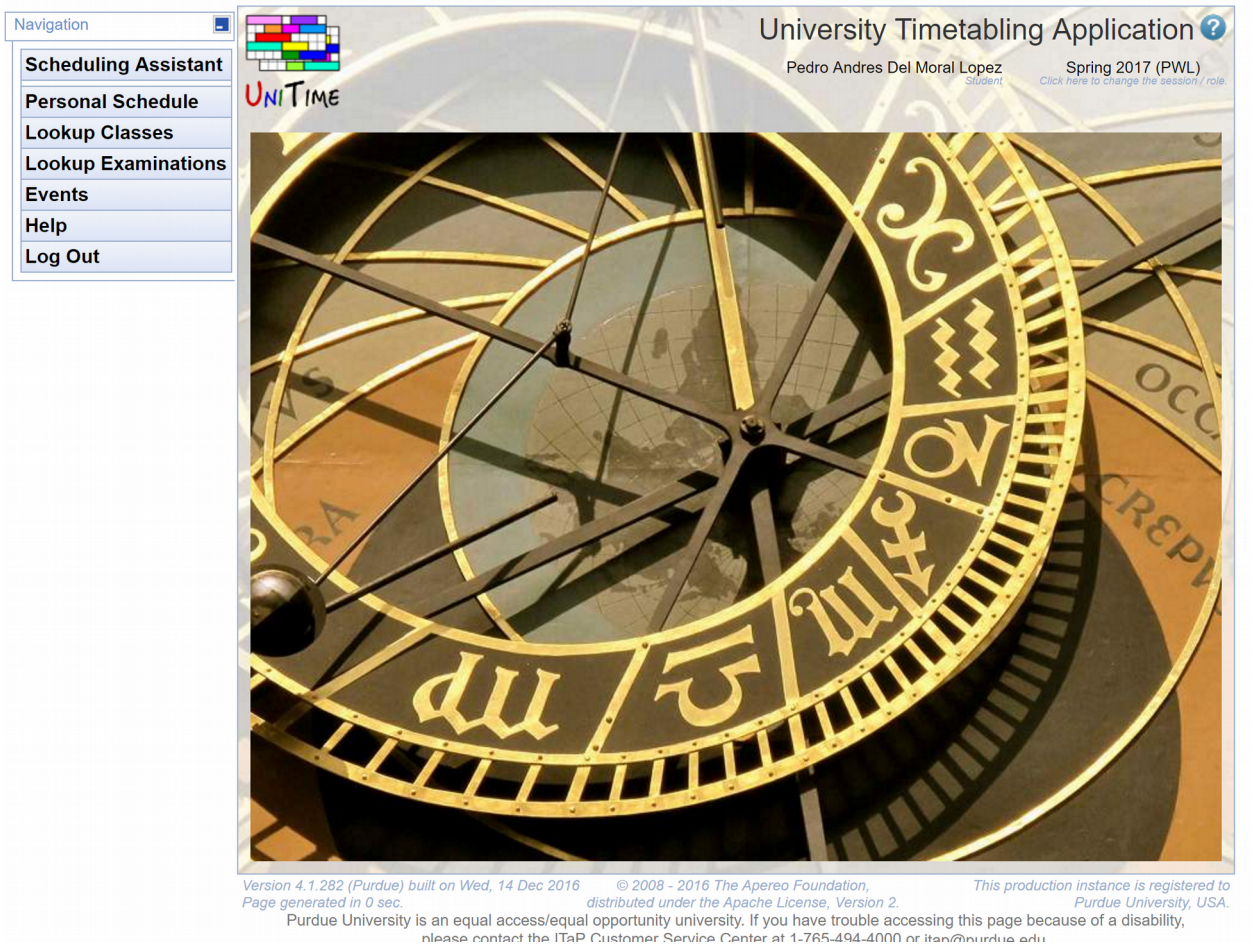
Problem Statement

Reserving a room for private study, or sharing rooms for group studying is a key and essential tool for academic success. However students today are confronted with a substandard and clunky tool for reserving rooms. Our project aims to provide a easy-to-use and intuitive tool for checking availability of rooms, reserving rooms, and marking rooms as “shareable”.

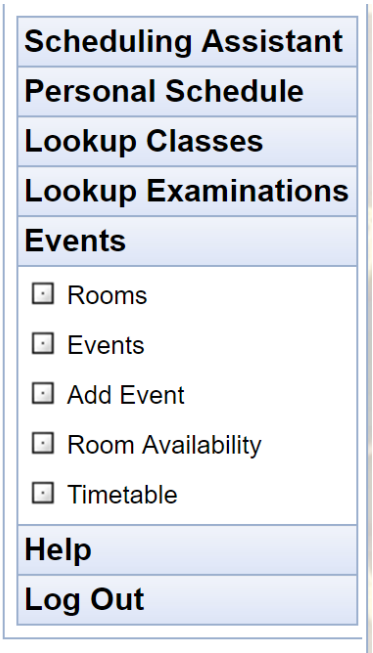
Background Information

Immediately upon accessing the current room reservation system, users are



presented with the following screen:

As you can tell, this tool is not immediately apparent where you can reserve a room. It provides too many unnecessary functions that could be separated into a standalone dedicated application.



Once a user chooses Events, they are presented with the following options:

This is entirely inefficient. A user cannot tell what rooms are available at a glance, and immediately reserve the room at the same time. They'd have to open multiple windows, one for

looking at what rooms are even *capable* of being reserved, then another for room availability, and then one more for reserving time in that room.

The current system also provides no information beyond the room number for understanding *where* in the building the room is located. This could be easily improved as well with an integrated map.

> This can be greatly improved, and we aim to redesign the current system with a more functional, single page solution.

Environment

Frontend Environment

The frontend will be written in Javascript, jQuery, nodeQuery, and HTML5, using AngularJS and ImageMapster, a jQuery plugin for interactive maps of the floor. We will use Google's Material Design and Bootstrap3 to maintain a consistent visual aesthetic.

Database Environment

We will be using the MySQL databases Purdue provides all students. Since we will only be storing very limited information on users and reservation times, with a very normal, structured, data set.

Version Control and Document Keeping Environment

We will be using GitHub as our method of source control as it is what we are all most familiar with. It also provides a good system of metrics for measuring work distribution and contribution.

Backend Environment

The server and backend will run on a Node.js server. Node provides several high-level libraries that will be crucial to communicating with the front end, interfacing with the database, and maintaining various state information necessary to normal application functionality. We will be using Express on top of

Node as a lightweight web framework. Passport.js will be used as a middleware for user authentication.

Functional Requirements

Backlog ID	Functional Requirement	Hours	Status
00	As a user, I would like to login/logout.	3	Sprint 1
01	As a user, I would like to register an account.	6	Sprint 1
02	As a user, I would like to reserve a room.	12	Sprint 1
03	As a user, I would like an easy way to view all current room statuses.	50	Sprint 2
04	As a user, I would like to view when a room is reserved.	4	Sprint 2
05	As a user, I would like a limit on the number of hours one person can reserve a room.	3	Sprint 2
06	As a user, I would like the option to make a room I have reserved shareable/unmark the room as shareable.	2	Sprint 1
07	As a user, I would like to be able to cancel reservations I have made.	4	Sprint 2
08	As a user, I would like to change my password	4	Sprint 2
09	As a user, I would like to recover my password.	12	Sprint 2
10	As an administrator, I would like to be able to block a room from being reserved.	10	Sprint 2
	Total:	94	

Non-functional Requirements

Security

Security in our application is crucial as it would be affiliated with the university. Our login and registration systems must protect user information beyond an industry standard level of encryption. All user information stored in our database should be inaccessible to anyone other than the user. All requests to the API will be authenticated before execution.

Usability

Our application should not only look good, it should feel good. This is the main issue with the current system for reserving any of the available spaces on campus, it's too bulky and hard to use. Upon login you shouldn't need any instruction to know how to reserve a room, it should be built in a way that is intuitive for the average user.

Scalability

Our application should be able to be scaled up with ease. It should be able to handle a 50 user load. In the event too many requests are coming in for our server to handle, it should be gracefully dealt with. Not only will it be easily scaled to handle larger traffic loads, our application will be designed with intention of scaling to new buildings and rooms around campus.

Use Cases

Case 00: Login

Action	System Response
1. Click login button	2. System opens login modal
3. Type in username	
4. Type in password	
5. Click submit	6. System verifies log-in information and displays appropriate success or failure screen.

Case 00: Logout

Action	System Response
1. Click logout button	2. System closes session 3. System displays success screen

Case 01: Register an account

Action	System Response
1. Click register	2. System opens registration modal. 3. System displays success screen.
3. Type in email	
4. Type in password	
5. Confirm password	
6. Type in username	7. System verifies email. 8. System sends verification email.
7. Click submit	9. System adds user to database.
	11. System marks account information as verified
10. Verify Email	

Case 02: Reserve a room

Action	System Response
1. Click on a room either on the map or on the timetable next to the map.	2. System opens modal with time table information for the day.
3. Click on an open time slot .	4. System verifies user is logged in and requests user to log-in if necessary
	5. System opens reservation dialog.
6. Select time slot.	
7. Click submit.	8. System verifies time slot selection does not conflict with pre-existing reservations, and does not over-reserve for user budget.
	9. System stores the registration information in the database.
	10. System edits user budget in database.
	10. System closes modal and shows success screen.
	11. System sends confirmation email.

Case 03: Check availability of all rooms

Action	System Response
1. View summarized room availability On scrolling container next to map.	

Case 04: Check availability of single room

Action	System Response

1. Select room on map.	2. System opens modal with time table information for the day
3. Press exit button.	4. Modal disappears.

Case 05: Limit reservations to avoid abuse

Action	System Response
1. User attempts to reserve room	2. System checks how many hours the user currently has reserved.
	3. If the user has 5 hours of reservation across any number of rooms, the system will deny the request until already reserved time is cancelled or used.

Case 06: Mark rooms as shareable

Method 1:

Action	System Response
1. User follows steps to reserve room	2. System follows steps to reserve room.
3. User checks “Shareable” checkbox before submittal	4. System marks the reservation as shareable and displays the room as shareable to other users.

Method 2:

Action	System Response
1. User clicks “My Reservations” button	2. System changes web page to page displaying active and future

	reservations associated with user's account.
4. User checks "Shareable" checkbox	5. System marks the reservation as shareable and displays the room as shareable to other Users.

Case 06: Unmark room as shareable

Action	System Response
1. User clicks "My Reservations" button	2. System changes web page to page displaying active and future reservations associated with user's account.
3. User unchecks "Shareable" checkbox	
4. User clicks "Submit Changes"	5. System unmarks the reservation as shareable and displays the room as shareable to other Users.

Case 07: Cancel reservation

Action	System Response
1. User clicks on "My Reservations" Button.	2. System changes web page to page displaying active and future reservations
3. User clicks on the "Cancel Reservation" button.	7. System removes reservation and marks room as available for other users.

Case 08: Change password

Action	System Response

1. User navigates to account page	2. System will navigate account page.
3. User inputs current password.	
4. User inputs new password.	
5. User confirms new password.	
6. User hits submit	7. System verifies that new password meets password requirements.
	8. System verifies current password.
	9. System changes user's password in database.
	10. System displays confirmation.

Case 09: Recover password

Action	System Response
1. User clicks "Recover password"	2. System will navigate to password recovery page
3. User types in email to confirm Identity	
4. User hits submit.	5. System verifies email and sends password recovery email with password
6. User correctly inputs password.	7. System logs in user and prompts user to change password

Case 10: Block a room from being reserved

Action	System Response

1. Administrator selects a room on map.	2. System opens modal with block status and blocking/unblocking option.
3. Administrator clicks the “Block Room” button.	4. System verifies that the user is an administrator. 5. System emails anyone with the room reserved that it has been blocked. 6. System displays screen that the room has been successfully blocked. 7. System updates the room as blocked in the database.

Case 10: Unblock a room

Action	**System Response**
1. Administrator selects a blocked room on map.	2. System opens modal with block status and blocking/unblocking option.
3. Administrator clicks the “Unblock Room” button.	4. System verifies that the user is an administrator. 5. System emails anyone with the room reserved that it has been blocked. 6. System displays screen that the room has been successfully blocked. 7. System updates the room as blocked in the database.