

TeamUP

Project ID:

1298

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Proposed Level of Achievement:

Apollo 11

Technology Stack:



Motivation

In the academic sphere, great ideas in need of brilliant minds and brilliant minds who are eager to work on great ideas rarely meet. From routine school projects to large-scale Hackathons, people often struggle to find team members. Even when teams are formed, they are often done in a hasty and haphazard manner, resulting in mismatch of skills, clash of working styles, or incompatible schedules. This is a prevalent problem affecting many, leading to project experiences which are less than ideal.

Therefore, TeamUP was conceptualized with the goal of improving project experiences, through teaming up the right people. It provides an excellent platform to link project leaders with individuals possessing relevant skillsets and compatible schedules. In this way, TeamUP empowers its users to build strong and versatile teams quickly, so that their projects can take flight.

Aim

Empower users to quickly form teams with synergy that can handle multifaceted challenges.

Project Scope

TeamUP can enhance overall project experiences through 3 dimensions:

(1) Self

TeamUP provides a unique profile page to every registered user, so that users can provide detailed information about themselves. Such information include a list of validated skills which they possess, as well as their schedule of availability. These are essential knowledge for project leaders while they search for ideal team members to work with.

(2) Ideas

TeamUP offers a platform called the Project Exchange. This is where project leaders can post their projects to call for potential candidates. Through the Project Exchange, project seekers can search for projects that require skillsets which they can offer. The result will be matching of skillsets to project requirements.

(3) Team

After teams are formed, team management becomes a vital component in project management. Therefore, TeamUP continues to facilitate this process by offering features like the group schedule. The group schedule exist in every project, where it will aggregate the individual schedules of every team member, and display the combined schedule of the group. This is particularly useful for teams to find common available timeslots to schedule their project meetings.

Features and Technologies

Prototype Web Application is implemented via Meteor. User interface is implemented via Semantic-UI. Database used is MongoDB.

Database: MongoDB

The database has 3 Collections: Users, Events, Projects. The properties and associated data types are listed in the following:

1. User

The user schema designed stores the following properties:

- (String) Email
- (String) First and Last Name
- ([Skills]) Skills Possessed
 - Skills is an object which contains a (String) Name and a ([String]) of Validators ID
- ([String]) IDs of projects enrolled in
- ([String]) IDs of projects pending
- ([String]) IDs of events invited to
- (BSON) Profile Picture

2. Events

The user schema designed stores the following properties:

- (String) Name
- (String) Description
- (String) Owner ID
- ([String]) Participants ID

3. Projects

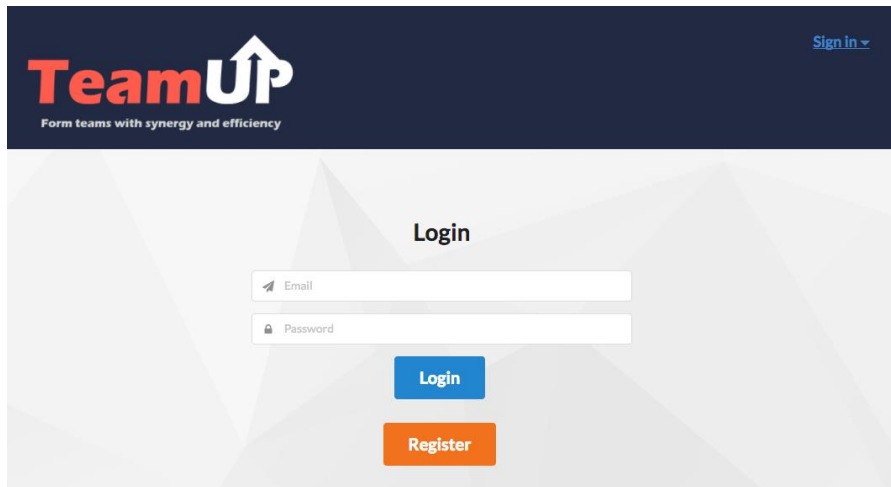
The user schema designed stores the following properties:

- (String) Project Name
- (String) ID of Event belonged to
- (String) ID of the Project Leader
- ([String]) IDs of Project Members
- ([String]) IDs of Pending Members
- ([String]) Skills required by the group for a project

Navigation Bar

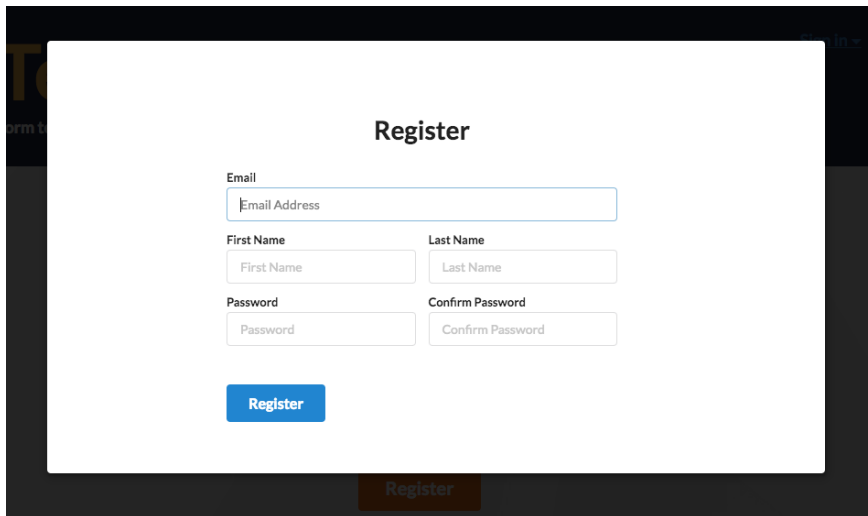
The navigation bar aggregates all information relevant to a user. It has 3 buttons: "My Profile", "My Events", and "My Projects". This facilitates the navigation between the many events and projects which a user might be involved in. "My Profile" leads the user to their profile page, "My Events" redirects the individual to the "Event Selection Page", while "My Projects" leads the individual to a page displaying all their current projects. The navigation bar is present in all pages for the users' convenience.

Login Page

The image shows a screenshot of the TeamUP application's login page. At the top, there is a dark blue header bar. On the left side of the header is the TeamUP logo, which consists of the word "Team" in red and "UP" in white with a stylized upward arrow above the "P". Below the logo is the tagline "Form teams with synergy and efficiency". On the right side of the header is a "Sign in" link with a dropdown arrow. The main body of the page has a light gray background with a subtle geometric pattern. In the center, the word "Login" is displayed in bold. Below it are two input fields: the first is labeled "Email" with an envelope icon, and the second is labeled "Password" with a lock icon. Below these fields are two buttons: a blue "Login" button and an orange "Register" button.

The login page is where users verify their identity on the TeamUP application. Subsequent pages will then only publish content – events, projects, participants – which are relevant to the user that has logged in. The login account also maintains users' information, such as Name, Skills, Email, Projects, and Enrolled Events.

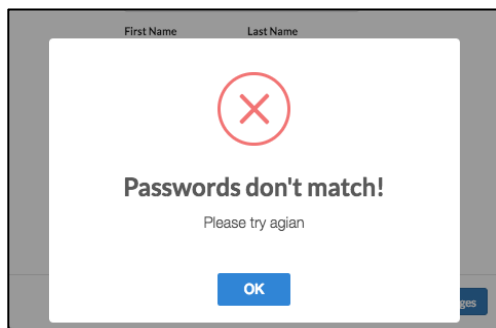
The Meteor Packages "Account-Password" and "Aldeed: Autoform" were used in the implementation of the Login Page.



The image shows a registration modal form titled "Register". It contains the following fields: "Email" (with a placeholder "Email Address"), "First Name" (with a placeholder "First Name"), "Last Name" (with a placeholder "Last Name"), "Password" (with a placeholder "Password"), and "Confirm Password" (with a placeholder "Confirm Password"). A blue "Register" button is located at the bottom left of the form. The modal is set against a dark background with a "Login" link visible in the top right corner.

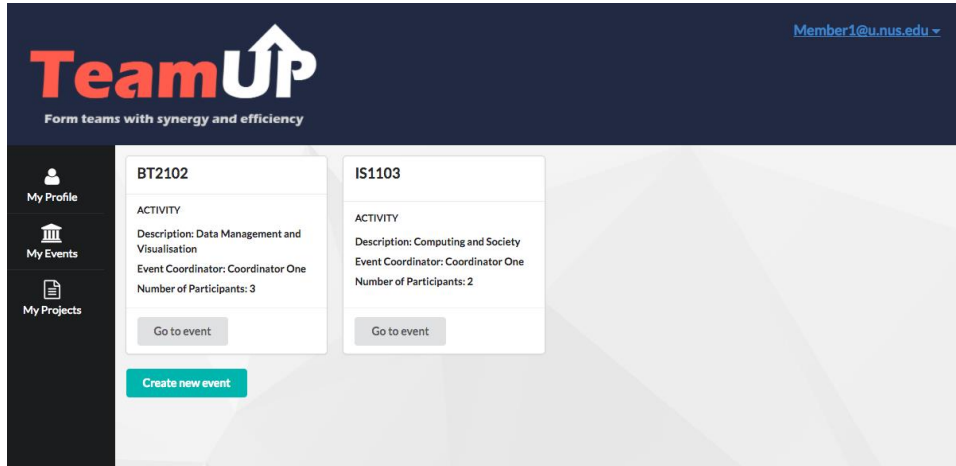
- Registration Modal

New users can create accounts by selecting the "Register for New Account" button. This button triggers an event to display the registration form as a modal. It requires Email, Name and Password. The registration form has a form of password validation that ensures password meets requirements before inserting it into the Users Collection in the database. Upon successful submission, the data is inserted into the collection and the user is redirected to the "Event Selection Page". On the other hand, an alert will be triggered via "Sweet Alert" if submission is unsuccessful.



(Alert Message if requirements are not met)

My Event Page



The "Event Selection Page" enables the user to navigate between the different events. Selecting an event from your list of enrolled events, will direct you to that event's page. If you need to manage a new event (in the instance of Lecturers), they can select the "Create new event" Button". Completing the form (which appears through a modal) will add the event to the application.

- Event Creation Section

The screenshot shows a modal form titled 'Create a new event'. It has two input fields: 'Name' and 'Description', both marked with a red asterisk indicating they are required. Below the fields is a green 'Submit' button. The form is overlaid on a dark background that shows parts of the application's interface.

(Event Creation)

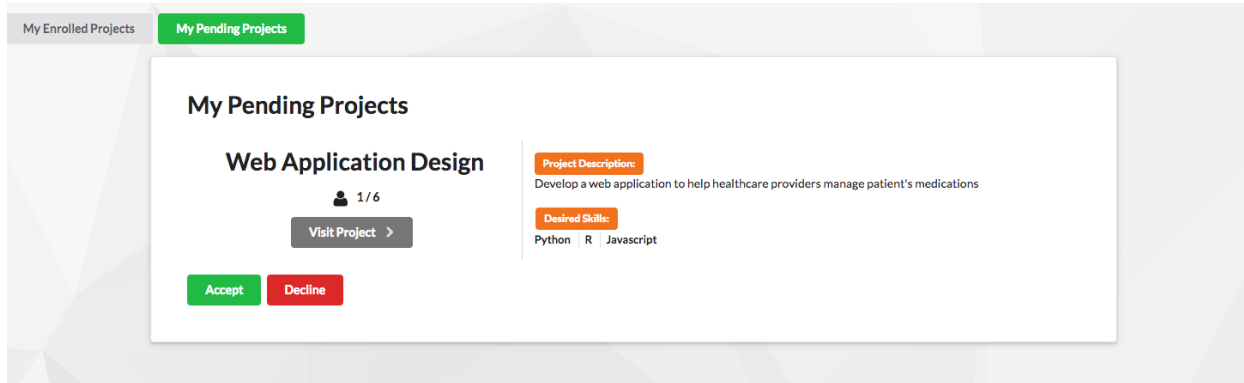
Users (typically Lecturers) can create new events here. The form is designed for quick set-up. Requiring only the Event Name and Description.

- Event Invitation Section

Event coordinators can select emails from a dropdown form to add users to the event so that they can become participants. These allows the added users to gain access to the information in the event.

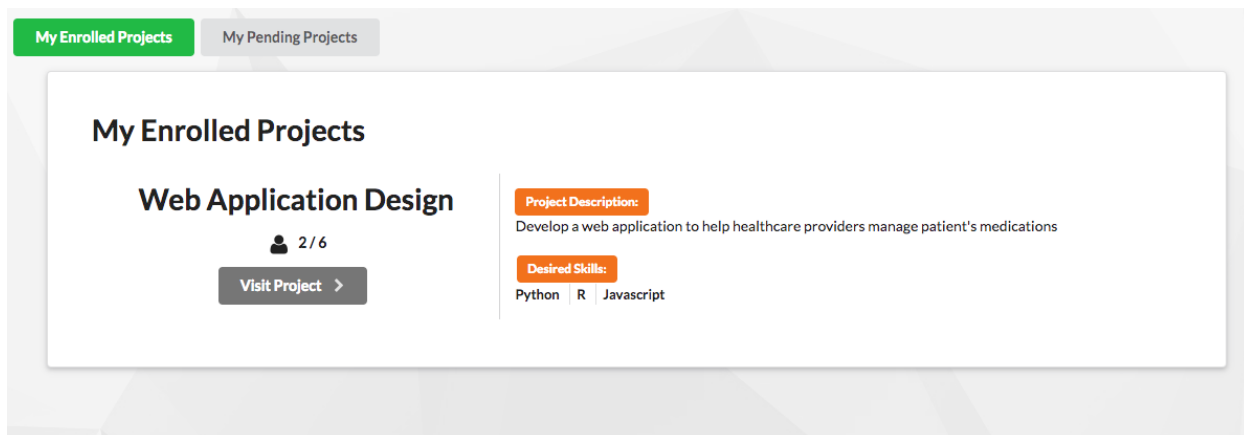
My Project Page

The “My Project Page” contains two tabs: “My Enrolled Projects” and “My Pending Projects”.



(“My Pending Project”)

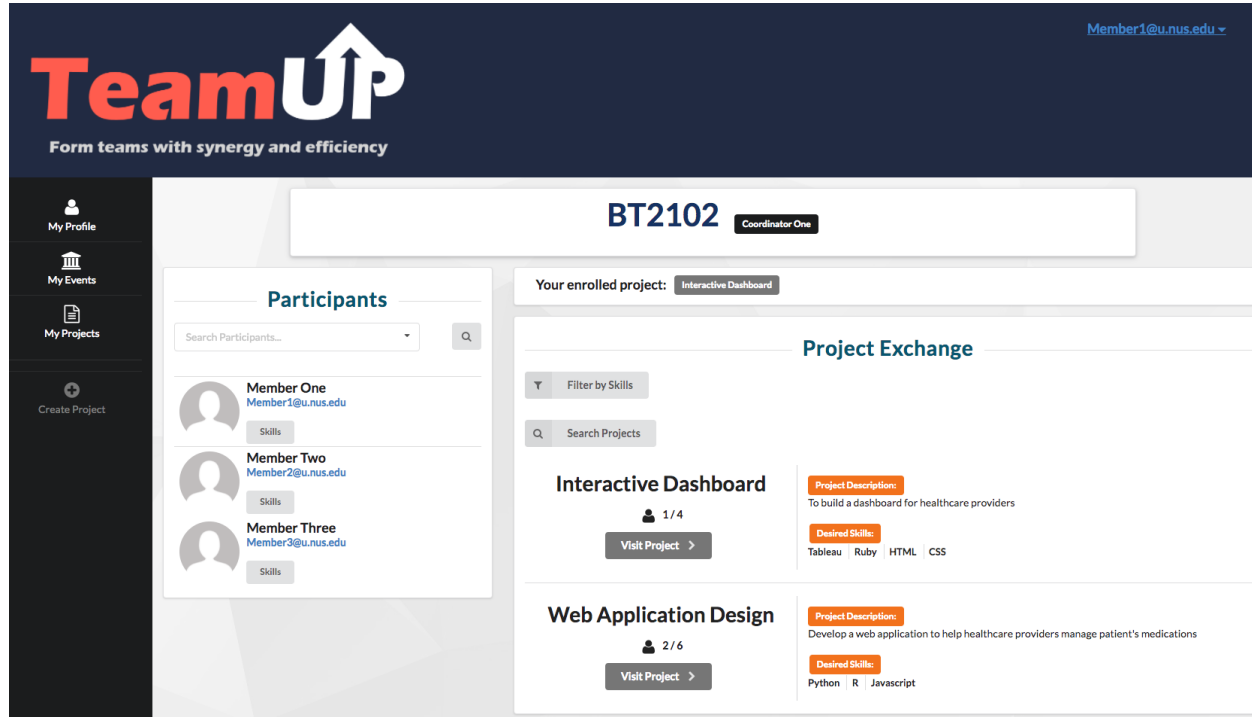
The latter (“My Pending Project”) is the page for participants to manage pending invitations from projects”. Accepting or declining would ultimately determine whether this participant would officially join a project in an event.



(“My Enrolled Projects”)

Upon accepting a pending project, the project is shifted to “My Enrolled Projects”. This page enables the user to easily navigate between the different projects that the individual is enrolled in. This contains information on (i) the number of members, (ii) short description and (iii) desired skills. A “Visit Project” Button redirects the user to the respective Project Page.

Event Main Page



(Event Main Page – Participant's view: which does not have “Event Management” in the side navigation bar)

The event main page is the main page for participants to interact with for an event. It contains the features described below:

- Enrolled Project

"Enrolled Project" is a divided segment above the Project Exchange. It displays the project that the participant is enrolled in for that event, and redirects the participant to that Project Page when clicked. By pinning this project, users can immediately identify and navigate to the project that he is a member of.

- Project Exchange

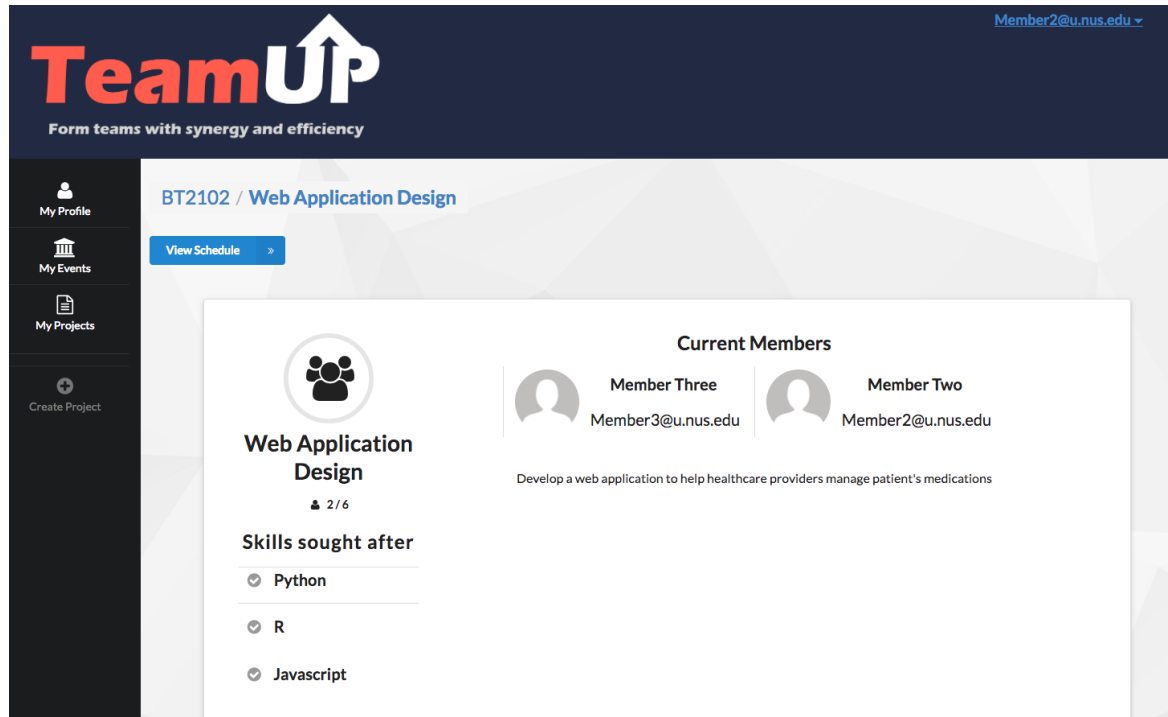
Project Exchange is a container of a list of projects in that event. Each project card contains:

- 1) Project Name
- 2) Number of Current Members
- 3) “Visit Project” Button
- 4) Short Description
- 5) Desired Skills

- Contacts

Contacts is a floated container of a list of participants. Each participant card contains the Name, Email, Skills and profile picture - if no pictures are present, a default avatar image is used. The skills are displayed upon hovering over the skills button as a tooltip. Selecting the participant will cause a modal to open. This modal provides comprehensive details of the participant.

Project Page



(Project Page: Participant View)

Project Page is the page where participants of an event go to inspect the details of a project. There are several details available for all participants:

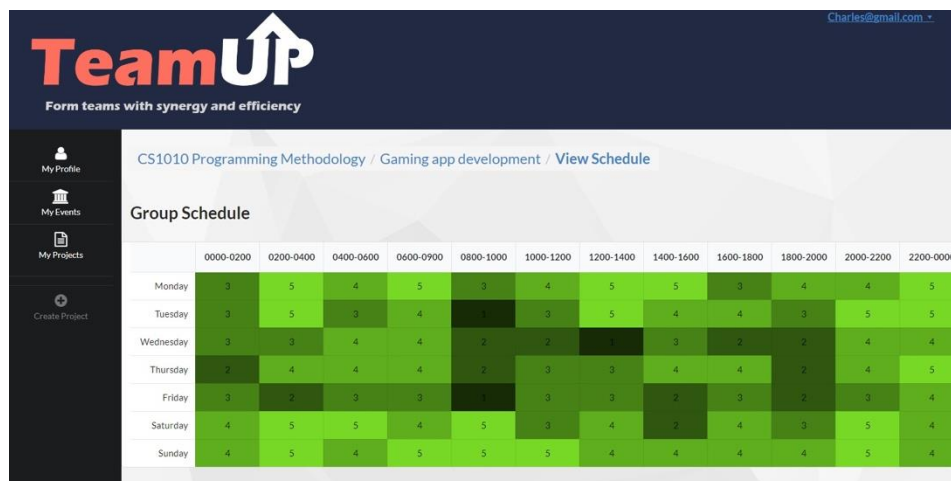
- General Description

This contains a short write up about the project and the current members present in the project. Clicking a participant would open a modal displaying in-depth information about that participant. This helps the user to identify whether they would be a good match for the current team line up.

- Skills Sought

This contains skills desired by this team and project. This provides transparency on whether your skillsets can contribute fully.

- View Schedule



(Group Schedule)

- The timetable is aggregated from each member's timetable to show the availability of every member in the project team. This is reflected as a heat map (number of available members are still shows in each timeslot cell). The fewer the number of available members, the darker the timeslot is. Hovering over a timeslot will display, in a tooltip, exactly which individuals (by name) are free on that day.
- This feature serves to help participants to organize and collaborate once the project teams have been formed.

(View of Project Leaders:)

BT2102 / Web Application Design

Edit Project Manage Team View Schedule

Current Members

Member Three
Member3@u.nus.edu

Member Two
Member2@u.nus.edu

Web Application Design
▲ 2/6

Develop a web application to help healthcare providers manage patient's medications

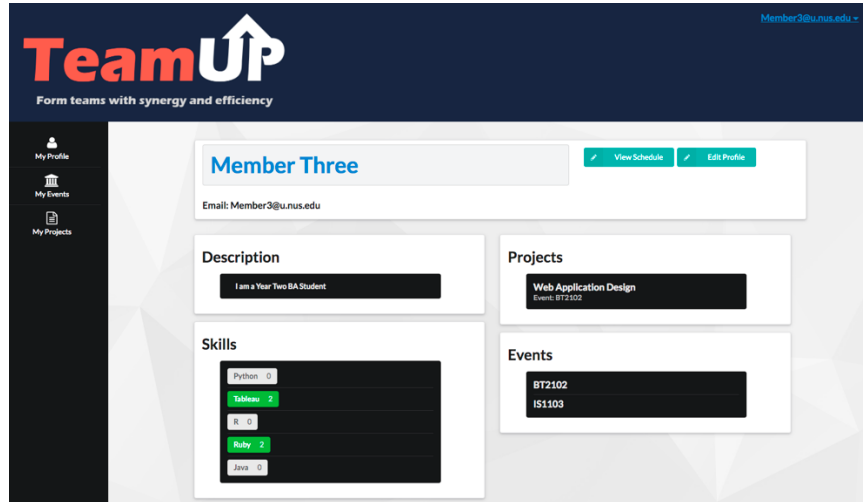
Skills sought after

- Python
- R
- Javascript

(Project Page: Project Leader View – Includes Buttons to Manage Team and View Schedule)

At the top are navigation tool bars which contains "Edit Project", "Mange Team" and "View Schedule". The former two caters largely to the project leaders by enabling them to (i) manage their teams and (ii) To edit information regarding the project. While "View Schedule" allows users to view common timeslots between all members (This will be discussed in-depth below).

My Profile Page

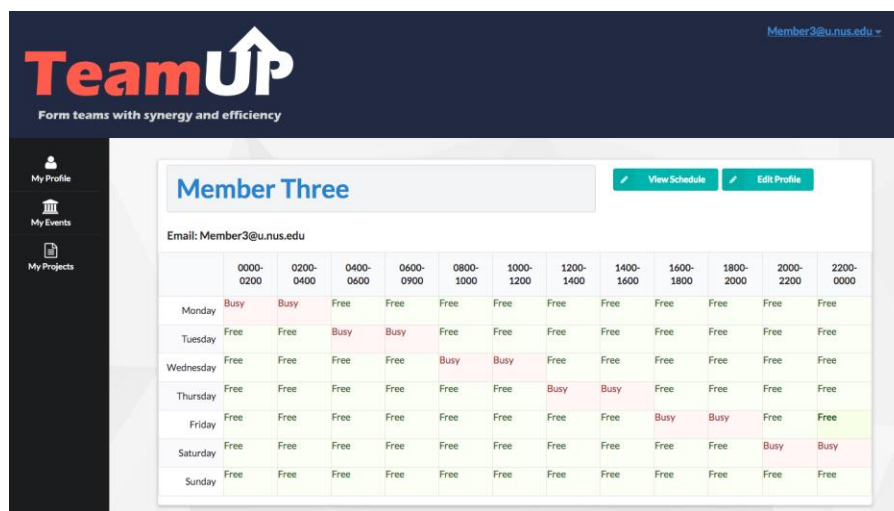


Profile Page is the site where participants of an event go to inspect the details of a user. Information of a user's skills are displayed here. Each skill gains credibility through the number of validations received by fellow users.

- Edit Profile

The profile update is implemented via in instances where a duplicated skill is submitted, a "Sweet Alert" message will pop out to inform the user that the skill has already been submitted.

- View Schedule



(User Schedule)

A timetable reflecting the options of "Busy" and "Free" is shown upon clicking "View Schedule" in the Profile Page". View Schedule allows other participants to view the general availability of the individual through a timetable. If the user is viewing their own profile, they can click each timeslot to modify their availability.

Clicking the different timeslots toggles between "Busy" and "Free". Colors of green and red are intentionally chosen to aid in the visualization of this information.

- Skills Validation

A skills validation feature has been added for each user. This allows other users to validate that individual's skills. Hence project leaders can actively seek individuals whose skills matches the skills that are sought for by the team and project. Thus, teams created are more diverse in skill sets and robust to overcome a variety of obstacles.

Testing and Validation

1) Log-In Password Validation

Test were done to ensure that the password during the registration process met given conditions. These are that password should be 6 characters or longer, and that the re-entered password should match the initial password. Failing to meet these conditions, the user will receive an alert message to warn the individual of the error.

2) Duplicate Submission

Tests were done to ensure that duplicate submission were prevented through form validation. This occurs in 1) Entry of Emails during Registration, 2) Updating of Skills in "Profile Page", 3) Invitation of invited users to Events and Projects. In situations where improper submission occurs, the user will receive an alert message to warn the individual of the error.

3) Event Invitation Privilege

Users with different roles (Event Coordinators, Project Leaders, Participants) were created. These accounts were then used to navigate the page and to ensure that only the Event Coordinators had the available option of inviting users to the event.

4) Project Invitation Privilege

Users with different roles (Event Coordinators, Project Leaders, Participants) were created. These accounts were then used to navigate the page and to ensure only that the Project Leader had the available option of inviting users to the project.

5) Scope of Data Published

Dummy accounts were setup to ensure that data was properly segregated between the different events. For example, upon selecting Event A, the user will only be able to interact with and view users and projects that are in Event A.

Security

1) Account Security

TeamUP employs the account-password package which hashes passwords during registration using bcrypt algorithm. This secures sensitive information so it is not easily deciphered and stolen.

2) Method Security

Methods does not rely on IDs passed from the client. Instead ID information is called from the server as this.userId. This prevents any clients of TeamUP from passing any user ID that they want to the method.

3) Publishing

TeamUP does not utilize the default autopublish package. Instead, it manually publishes data from the databases only if they are relevant to the user. This restricts unnecessary access and minimize intrusion to sensitive data.

4) SSL Certification

During deployment plans for Meteor, configuration settings will such that SSL is set up. This secures transfer of sensitive data to the server. Therefore, besides preventing attackers from figuring out passwords, it also prevents attackers from impersonating other accounts by sending the hashed passwords.