

CSC309 Fall 2016

MentorRock

SHALEE

I: Introduction

Learning a skill or mastering in a field could take a long time, and along the learning process it would always be helpful to have someone who is more experienced to guide the learners. Although there are many online workshops or meetups in place, the relationship between the instructors or speakers and the participants are mostly short-term. The tutorials in the universities have similar drawbacks, once the term is over, tutors normally have few interactions with the students. The authors believe that a long-term mentorship would be very helpful to guide the learners along the learning process, to address confusions, provide suggestions as well as sharing experience. Therefore, the authors introduce the web application "MentorRock", with an aim to provide a platform where people could develop long-term mentorship based on an academic field or extracurricular interests.

MentorRock provides a platform for users to establish connection with people of similar academic or extracurricular interests, the users will be able to search for people with similar specialties and interests, view user profiles, and discuss problems with one another using the chatroom. This application is suitable for university students and teachers, it could also be further extended to the general public in the future.

MentorRock is built using Node.js, express, ejs, passport, bcrypt and mongoDB. The detailed frameworks and modules which are used are as follows:

Database:

- ❖ MongoDB
- ❖ Mongoose
- ❖ Bcrypt (for password encoding)
- ❖ Morgan

Modules:

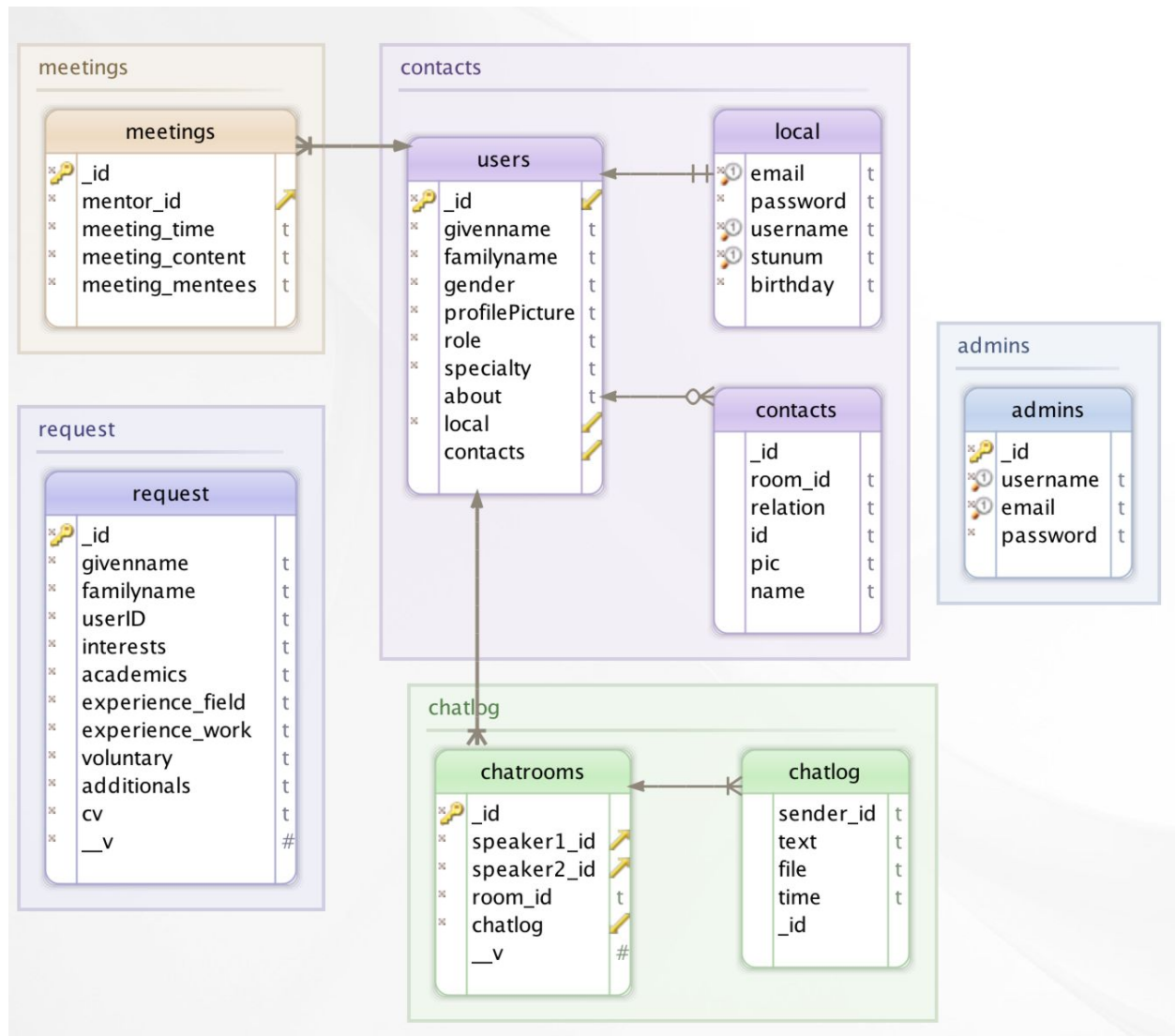
- ❖ Express & Express session
- ❖ Formidable (for file uploads)
- ❖ Socket.io (for chatroom)
- ❖ Passport (User Authorization and Authentication)
- ❖ EJS (View Engine)
- ❖ Connect Flash (Helper for Passport)

II: Architecture

Part I: Page design

Page	Page Description
Entry	
Home page	The first point of entry to the web app, with simple description
Register	A register form for user to create a new account
User Login	The login page for users
Admin Login	The login page for admins
User	
Home	The user home, with welcome message and news feed
My Profile	The page to display the user's own profile
Account Setting	The page to modify the user's account settings
Chatbox	The page for the user to chat with his/her friends
Contacts	Showing the friends of the user, with link to friends' profile page
Search for Mentors	A page for user to search for mentors based on fields as filters
Mentor Application	An application form for users interested in becoming mentors
User Profile	The page to display other user's profile
Schedule Meeting	An form for mentors to schedule an offline meeting with their mentees
Admin	
Users	Displaying all the users
Manage Users	The page to manage currently existed users
Add Users	The page to add new users
Mentor Request	Showing mentor applications for the admin to approve or reject
Manage Mentors	The page to manage mentors

Part II: Database



We used MongoDB as our database, there are currently 5 collection:

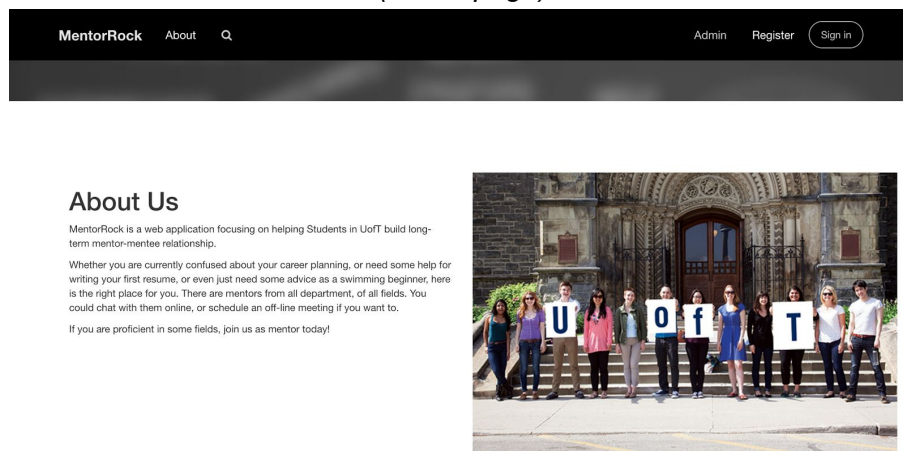
- ❖ **users** : It stores all the basic information of one user, including their contact list
- ❖ **request**: It is the schema for mentor application form
- ❖ **chatrooms**: it store every one-to-one connection, every time one user add a contact, there will be chatroom created automatically. And the chatlog would be store under that chatroom
- ❖ **admins**: It stores the admin user information
- ❖ **meetings**: It store the meeting invitation made by of that mentor

III: User Interface (Front End)

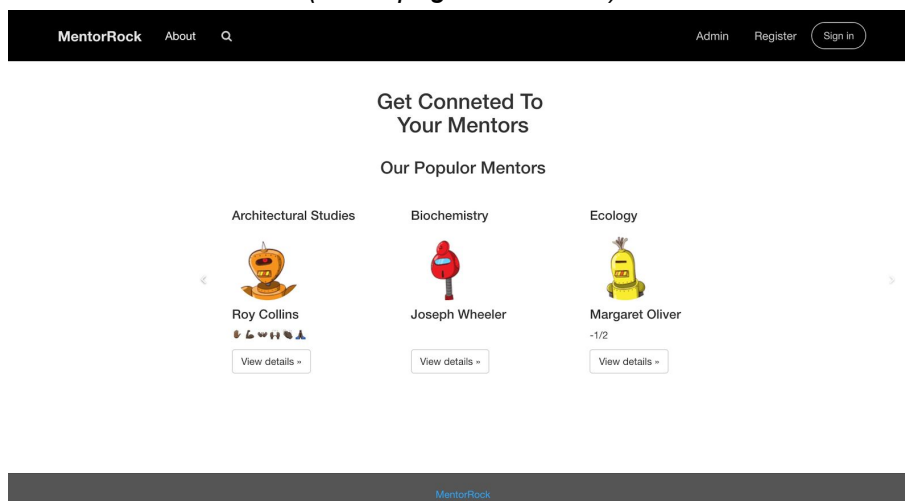
Part I: Entry to MentorRock



(Home page)



(home page -about use)

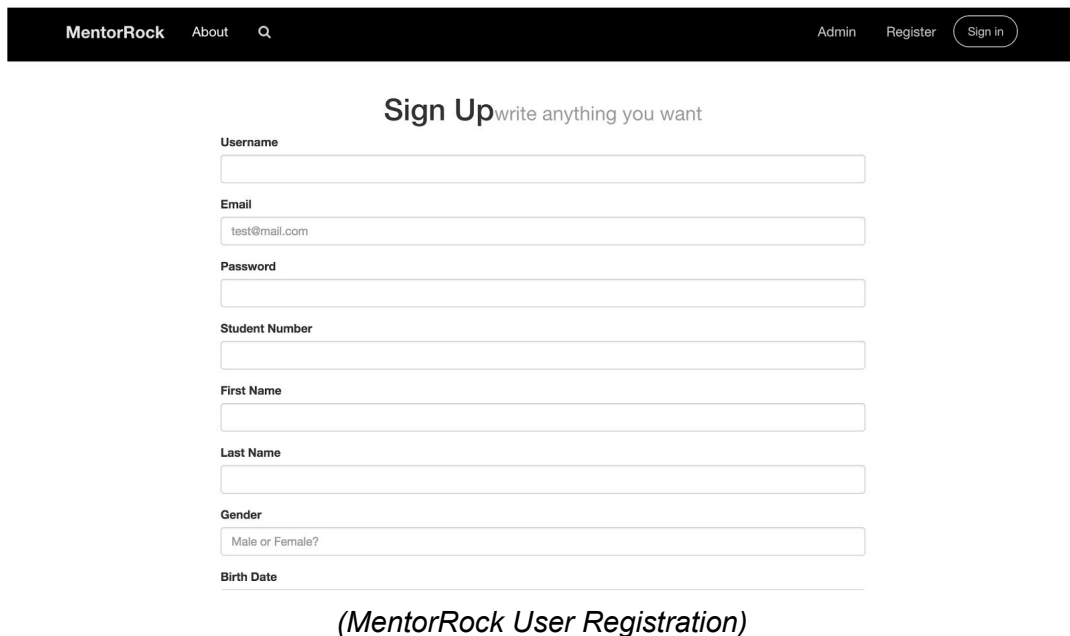


(Homepage, upon loading server)

The first entry point of MentorRock web application is the home page, which shows the general about us information and the top rated mentors list, and the list is displayed using slide. And our home, admin, login, and registration pages are able to handle navigation bar tab changes - if the user was to shrink down the size of their browser.

User Login & Register & Admin Login

Our admin login, user login and registration pages have been implemented using the Passport module.



The registration form is titled "Sign Up" with a subtitle "write anything you want". It features a dark navigation bar at the top with "MentorRock", "About", and a search icon on the left, and "Admin", "Register", and a "Sign in" button on the right. The form fields are: Username, Email (pre-filled with "test@mail.com"), Password, Student Number, First Name, Last Name, Gender (pre-filled with "Male or Female?"), and Birth Date.

Sign Up write anything you want

Username

Email

test@mail.com

Password

Student Number

First Name

Last Name

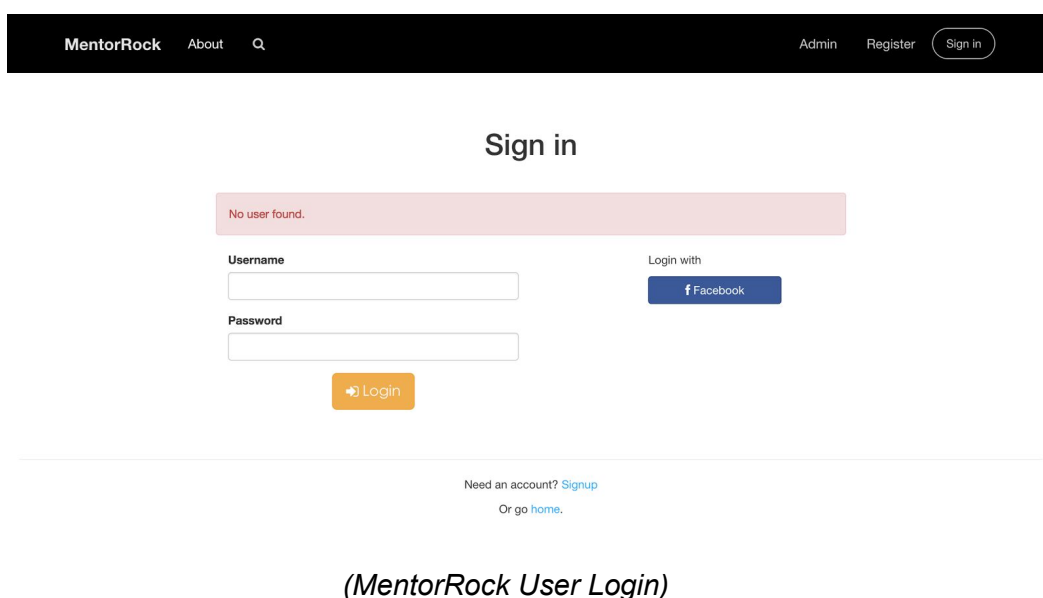
Gender

Male or Female?

Birth Date

(MentorRock User Registration)

Users need to provide a unique Username, a unique email, and other information(Student number, family name, given name, Birth of data) to sign up as a local user.



The login form is titled "Sign in". It features a dark navigation bar at the top with "MentorRock", "About", and a search icon on the left, and "Admin", "Register", and a "Sign in" button on the right. The form includes a "No user found." message, a "Username" field, a "Password" field, a "Login" button, and a "Login with Facebook" button. At the bottom, there are links for "Need an account? Signup" and "Or go home."

Sign in

No user found.

Username

Password

Login

Login with

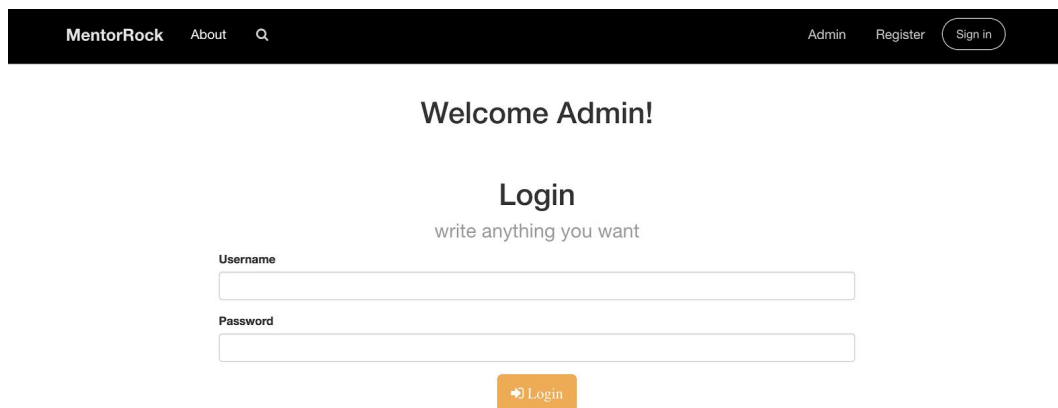
f Facebook

Need an account? [Signup](#)

Or go [home](#).

(MentorRock User Login)

Also, for users logging in with not-exist username or wrong password, there will be a flashing message shown in the screenshot above. The third party authentication login (Facebook) has also been implemented. Since the user in this case doesn't really need to add in any information apart from the information that is already stored through Facebook, the Facebook account system is found on the login page.



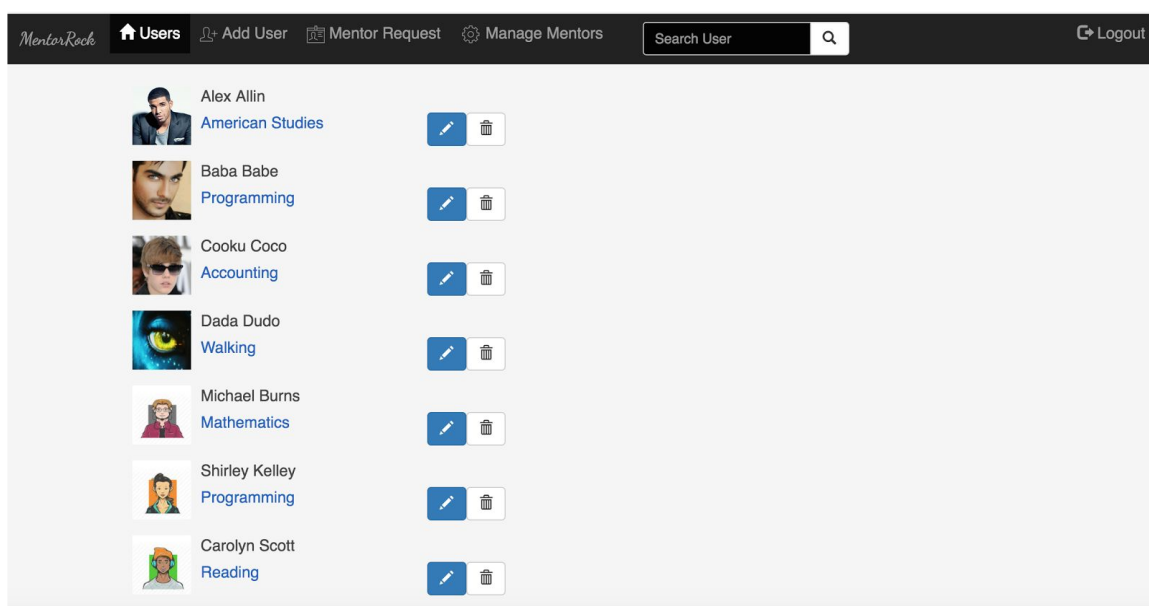
The screenshot shows the MentorRock Admin Login page. At the top is a dark navigation bar with the MentorRock logo, 'About', a search icon, and links for 'Admin', 'Register', and 'Sign in'. The main content area has a 'Welcome Admin!' message, followed by a 'Login' heading and a subtext 'write anything you want'. Below this are two input fields: 'Username' and 'Password'. At the bottom is an orange 'Login' button with a right-pointing arrow icon.

(MentorRock Admin Login)

There is a separate login and registration system for admins also using Passport module. We disable the sign up part for admin, and insert a default admin account at the beginning of server running.

Part II: Admin

The home page of the admin displays the list of users with some basic profile, as shown in the screenshot below. The admin can use the corresponding trash icon to remove a given user or the admin can click on the pencil icon to edit or view more detailed information about the user.

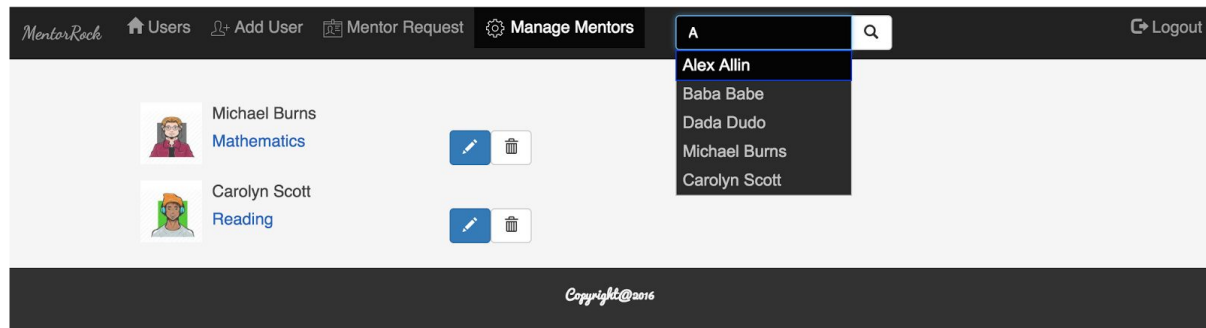


The screenshot shows the MentorRock Admin Homepage. The top navigation bar includes the MentorRock logo, a 'Users' tab with a home icon, and links for 'Add User', 'Mentor Request', and 'Manage Mentors'. It also features a 'Search User' input field and a 'Logout' button. The main content area displays a list of users, each with a profile picture, name, subject, and action icons (pencil for edit/view and trash for delete).

Profile Picture	Name	Subject	Action Icons
	Alex Allin	American Studies	
	Baba Babe	Programming	
	Cooku Coco	Accounting	
	Dada Dudo	Walking	
	Michael Burns	Mathematics	
	Shirley Kelley	Programming	
	Carolyn Scott	Reading	

(MentorRock Admin Homepage)

The admin can also use the search box to look for a user with a given name. The search box provide suggestions as the admin enters the each letter as shown in the screenshot below.



(Suggestions provided by the search icon in the manage mentors page. **Note:** the list narrow down as the admin enters more letters associated with the required user. In the above case when the letter “A” is typed users with their name containing the letter gets displayed)

When the admin clicks on the pencil icon corresponding to a given user a form filled with the pre-existing user’s information will be presented and the admin can edit the information or change the password. Once the information is modified the admin can click on the “Update” button to change the information stored in the database.

(MentorRock Admin: A form with prefilled user information and used to edit the information of a given existing user.)

The admin can add a new user. When the “Add User” menu item on the navigation bar is clicked the admin will be presented with a form fields to enter the new user’s information. Once the information is entered the “Add User” button can be clicked to save the new user’s information.

MentorRock [Users](#) [Add User](#) [Mentor Request](#) [Manage Mentors](#) [Logout](#)

Username

Email

Password

Student Number

First Name

Last Name

Gender Male or Female?

Birth Date

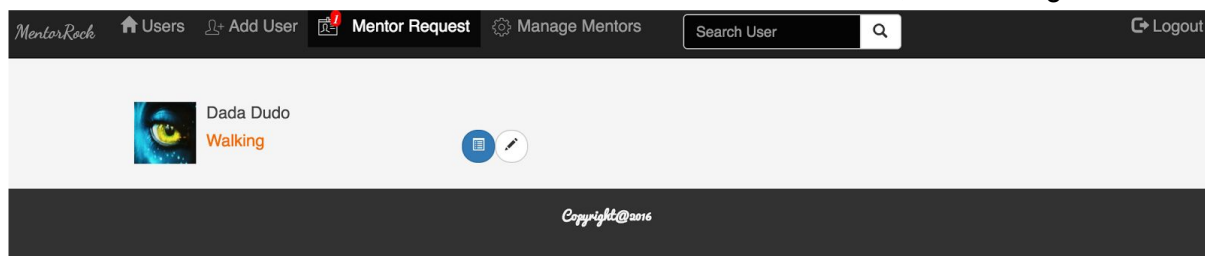
Profile Picture

Interest Fields

[Add User](#)

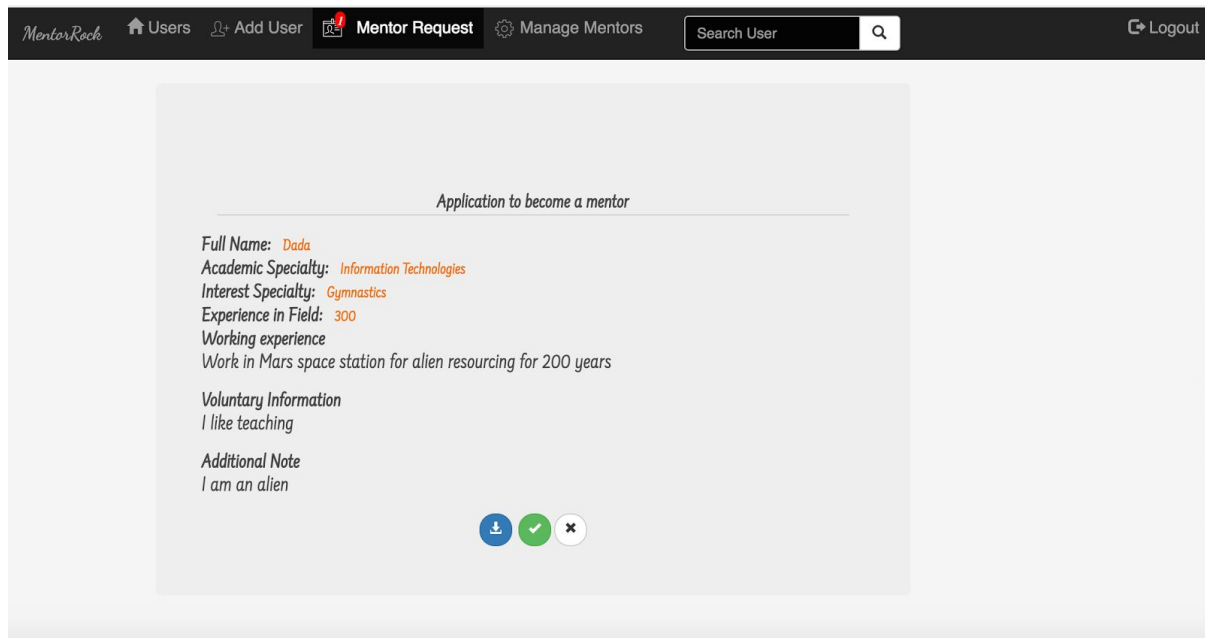
(MentorRock Admin: A form to add a new user.)

The admin can also approve the request to become a mentor. Mentees in the web application can become a mentor, once they send their request and then, receive the admin's approval. The "Mentor Request" menu item contains a badge that shows the number of users who requested to become a mentor. The admin can click on the icon shown next to the pencil icon, in the following picture, to see the user's application. The pencil icon allows the admin to see more detailed information about the user, see the figure below.



(MentorRock Admin: The mentor request page.)

The application of the user who requested to become a mentor gets displayed when the admin clicks on the icon to the left of the pencil icon shown in the figure above. The application of the user may look something like the screenshot given below.

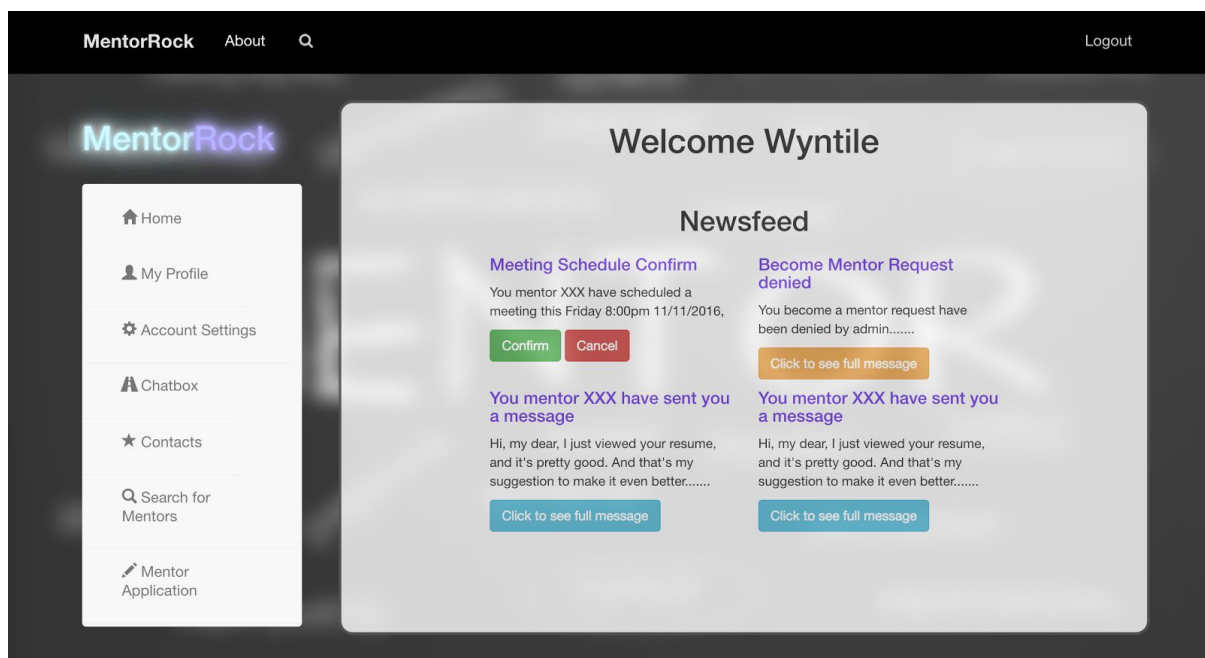


(MentorRock Admin: Page showing the application to become a mentor.)

In the above screenshot the admin can see the applicant's information and also can use the download icon to download the CV of the applicant. The "ok" icon or the "remove" icons next to the download icons are used to approve or the deny the request to become a mentor.

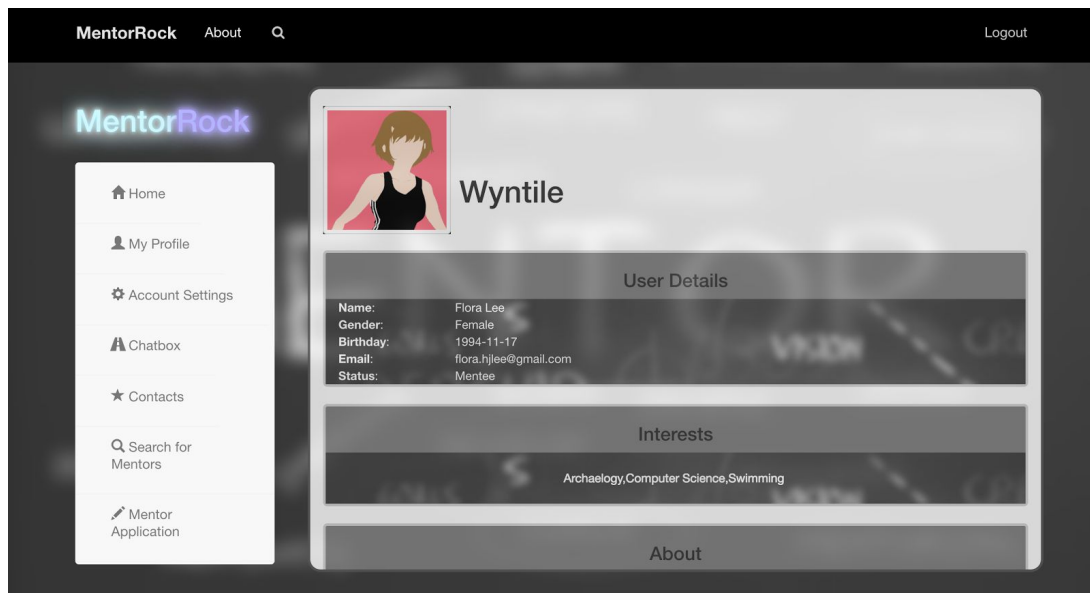
The Manage mentors page display the current list of mentors and the admin can edit their information using the edit or trash icons corresponding to each mentors.

Part : User



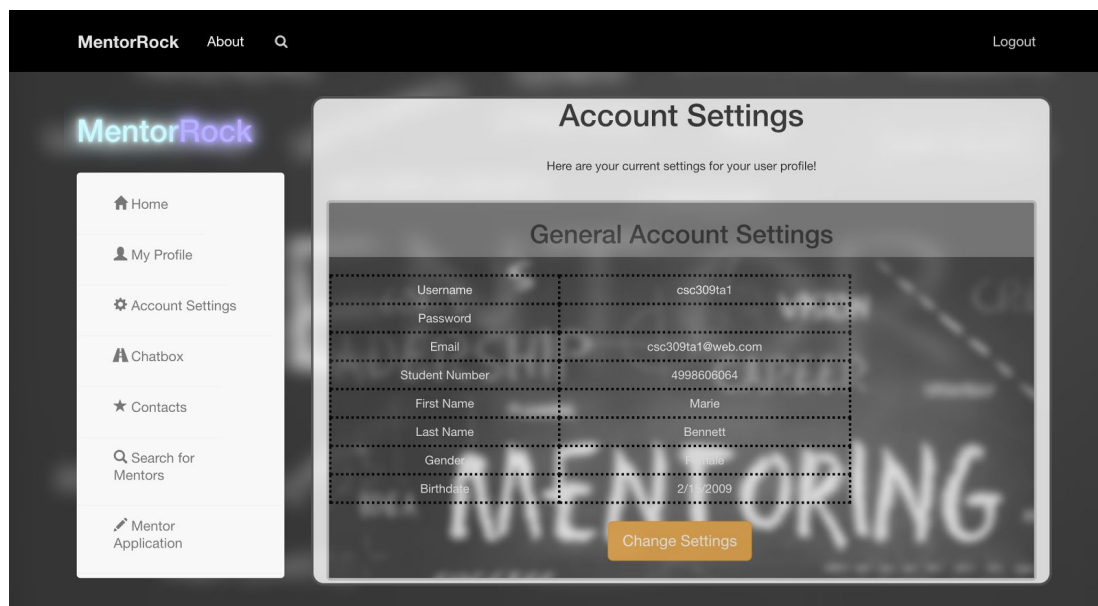
(MentorRock Mentee and Mentor Homepage)

As for user pages, users will be redirected to the page above when they either login in with local account or third-party means. What the user sees on this here page are the Newsfeed of the recent events that have occurred concerning them (calendar events or notifications for messages received).

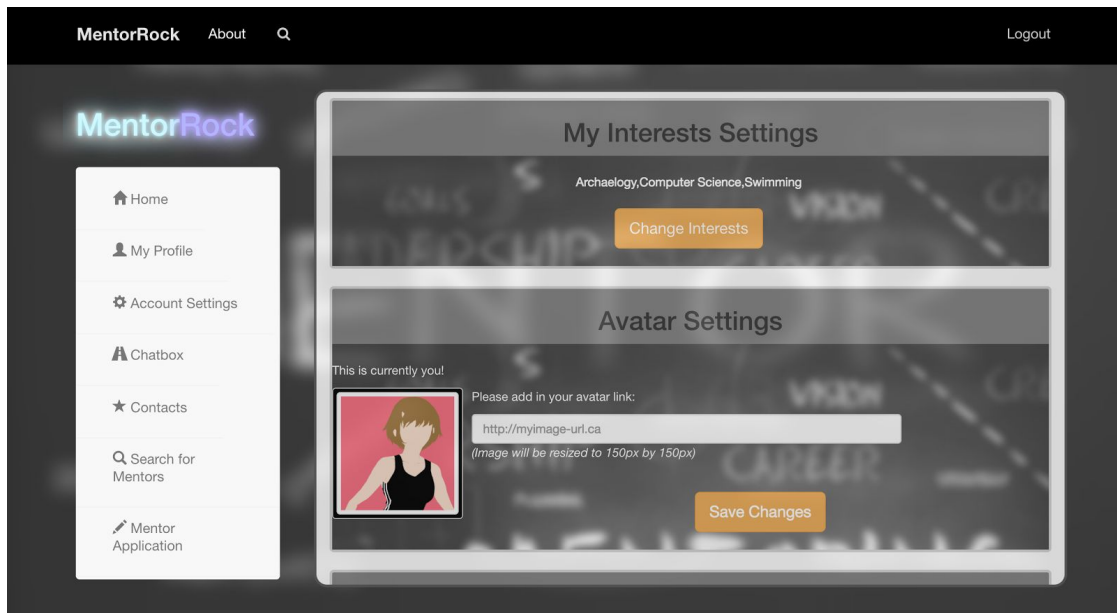


(MentorRock My Profile)

Once users click the “My Profile” button on the side navigation bar, the profile page will be shown as above. It contains all the basic information (Name, Gender, Birthday, Email, Status, Interest, and self-introduction) of current logged-in user.

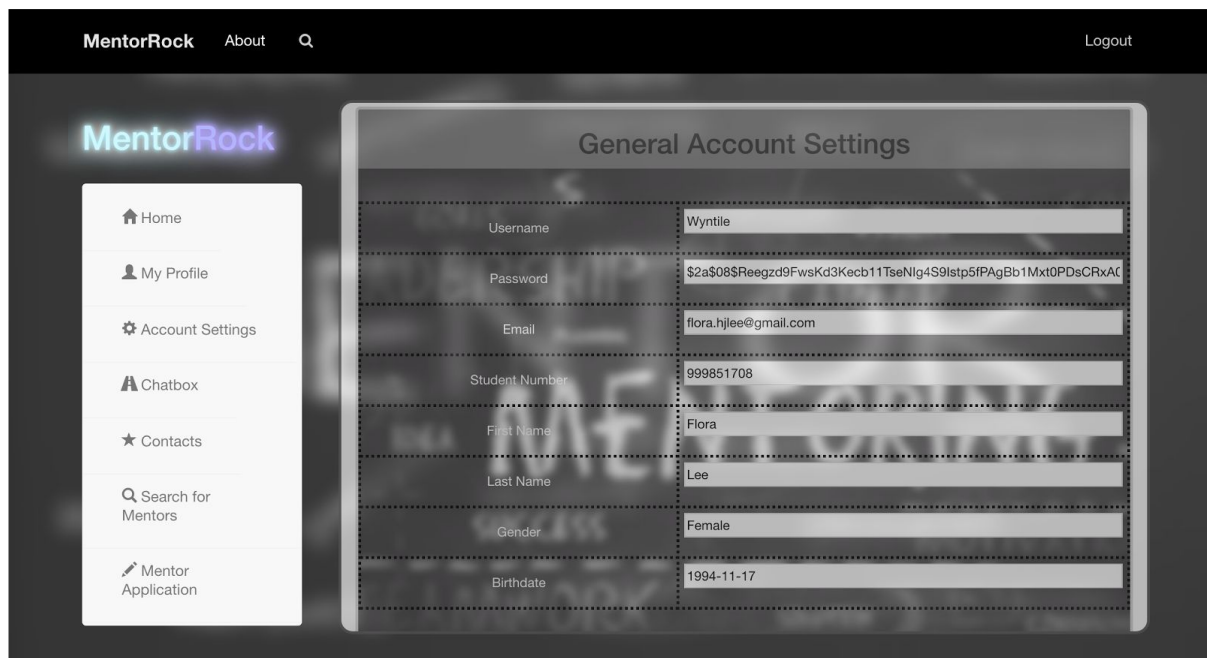


(MentorRock Account Settings: Part I)

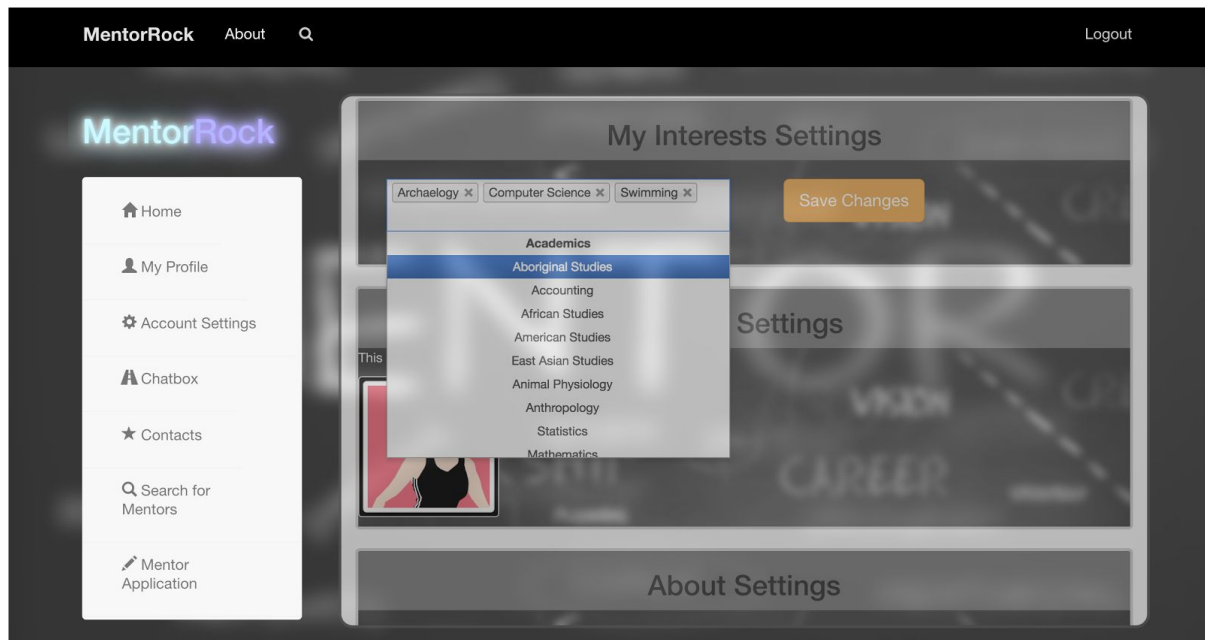


(MentorRock Account Settings, Part II)

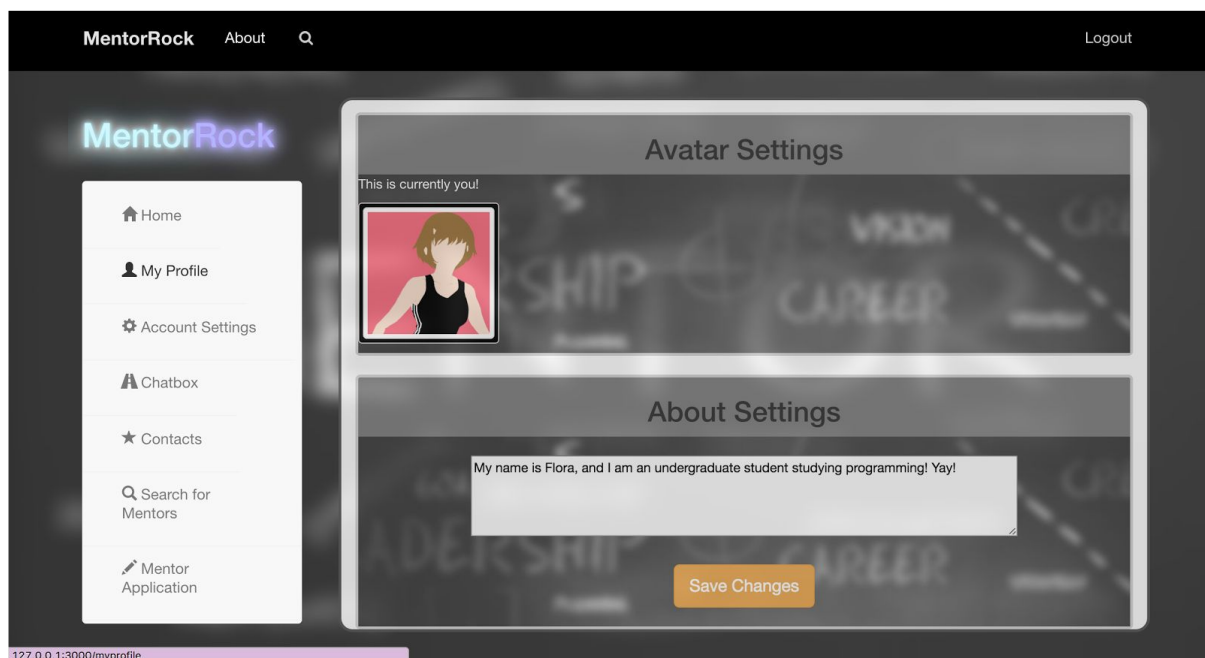
These two images are both part of the current logged in user's "Account Settings", where as shown above they are given the options to review and change the following fields: general user information, their interest fields, their avatar image, and their about section. To keep the page to due one action at a time, this page (defined as acc-settings.ejs) is only able to directly change the user avatar settings through a POST request. In order to change the other settings, once a user clicks on their respective buttons, they are redirected to the page corresponding to the chosen setting.



(MentorRock Account Settings: General User Fields)



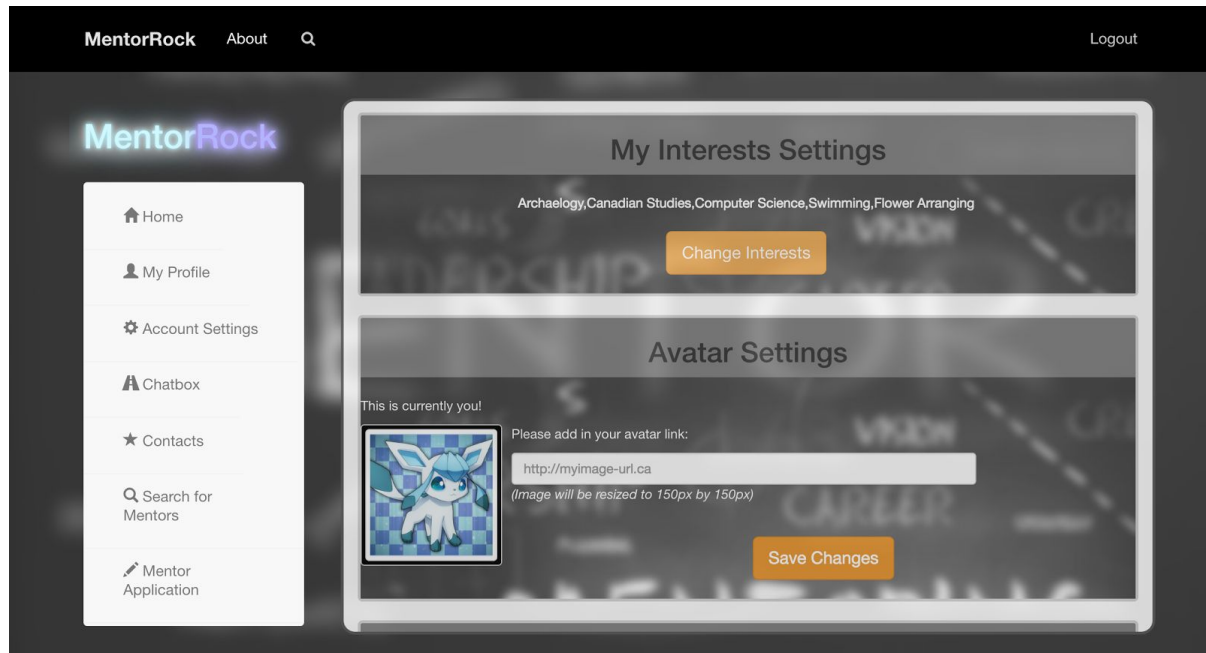
(MentorRock Account Settings: Interest Fields)



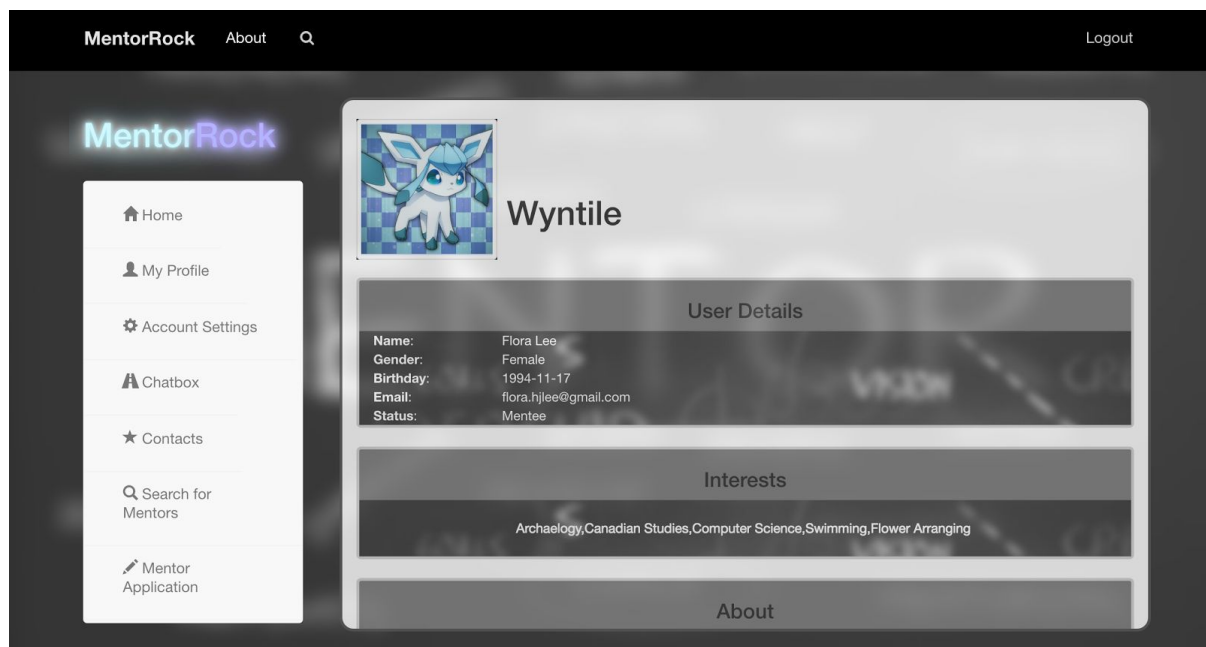
(MentorRock Account Settings: About Field)

For both the general user fields and the about fields, they use simple inputs and text boxes, and by form elements a POST request is sent to the server and thus the respective fields are updated in our user database. The user interest fields however, uses the same input system that was found to when the user was asked to first register for an account, where the user is able to type into the input form, and as they are doing so the options below are responsive and restricted in the amount of choices. Once the user has changed their information and hit “Save Changes”, they are redirected back to their account settings page which now shows their updated information. In order to ensure that only one field is being changed at a time, if

a user was to say, work on updating their about section information, the user is restricted from being able to change other fields.



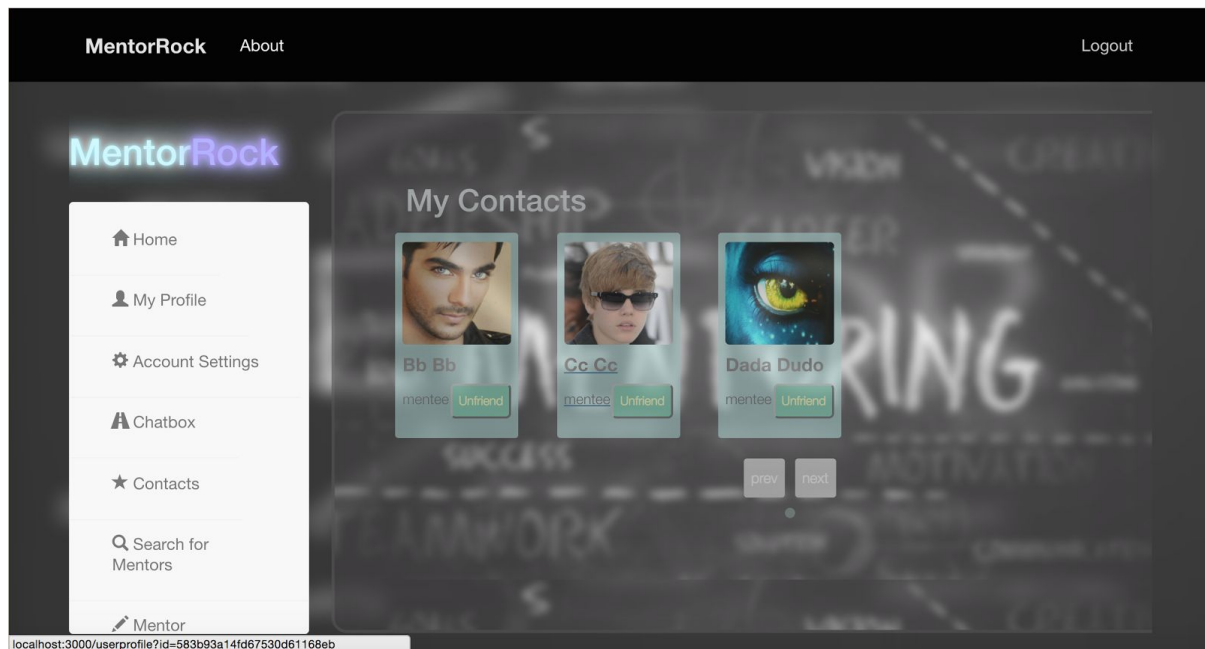
(MentorRock: Changing Wyntile's Interests and Avatar)



(MentorRock: Wyntile's Profile with Changes)

Contacts

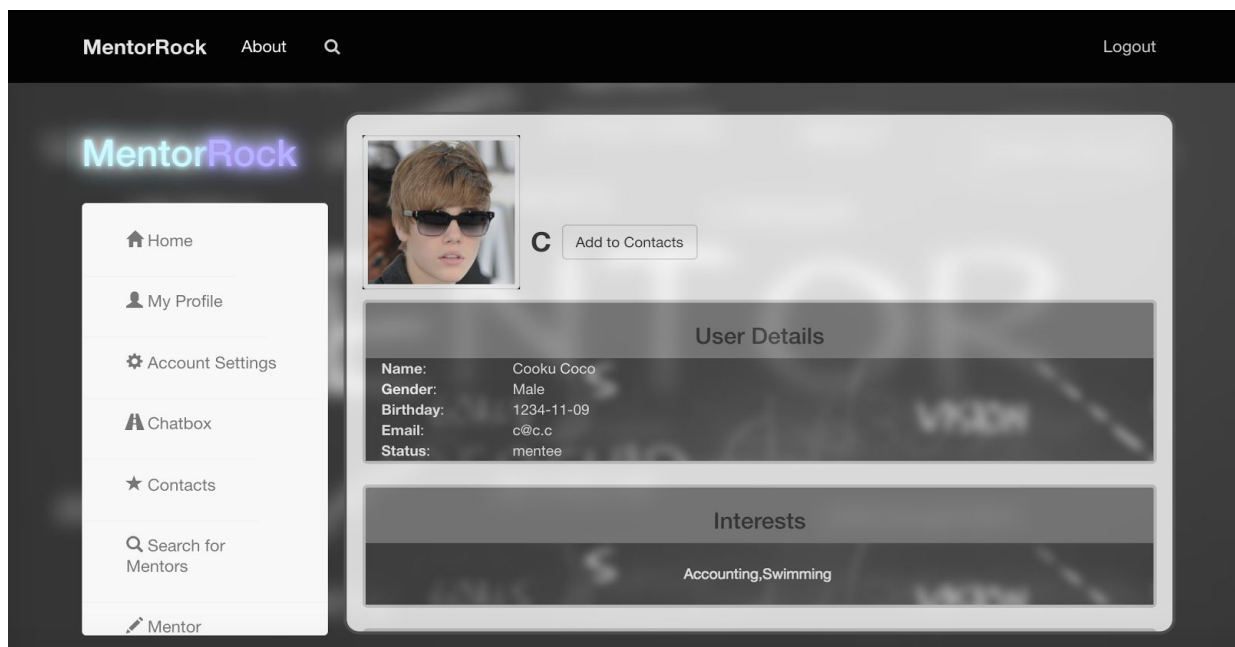
The user can view all his/her friends, clicking on the profile of a friend will link to the friend's profile page. This page also allows the user to unfriend a person, namely removing this friend from the contacts.



(MentorRock: Contacts page)

User profile

This page displays a user's profile. It supports the function of add to contacts when the person being viewed is not the current user's friend yet, it will give an alert if the person is already a friend of the current user.

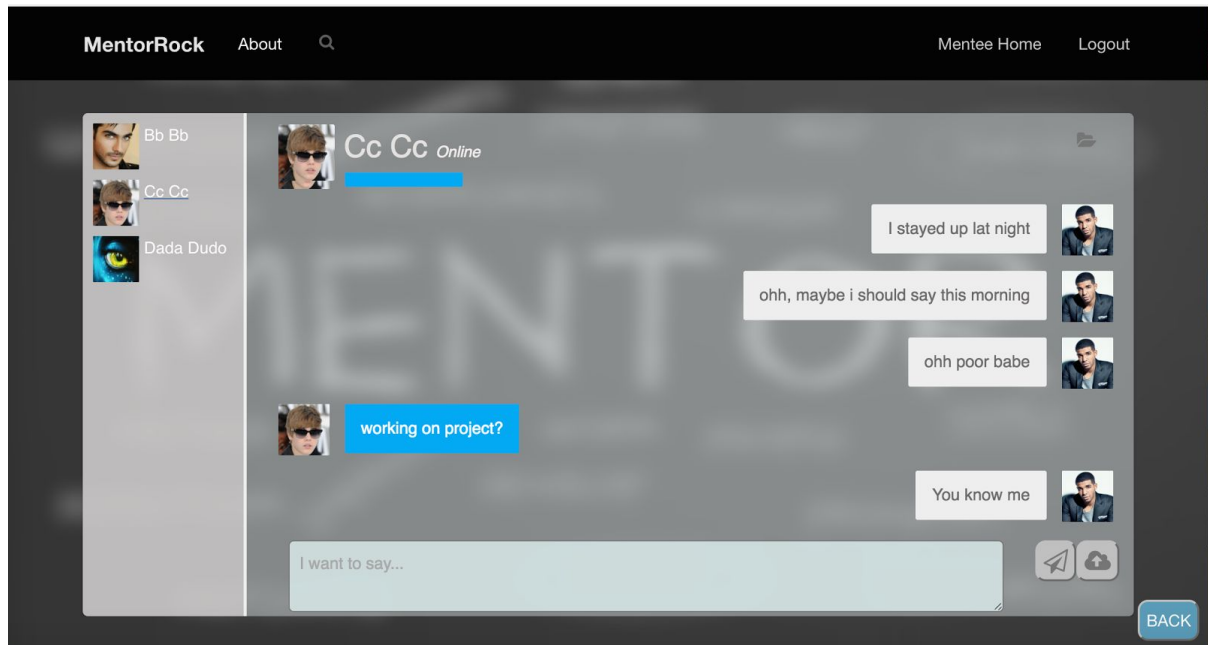


(MentorRock: Profile page of a different, non-login user)

Chatbox

Chatbox is a page for the user to chat with his/her friends, each friend will share a distinct chatroom with the user. The chat log is stored so the user can view all the previous chat

records. Chatbox is implemented using socket.io to create private rooms, the status of connection, namely whether the friend is online or offline is also update in realtime.



(MentorRock: Sample Chatbox between Mentor and Mentee)

Mentor Application

The screenshot displays the 'Become a Mentor!' form in the MentorRock application. The top navigation bar is dark with 'MentorRock', 'About', and a search icon on the left, and 'Logout' on the right. A sidebar on the left contains links: Home, My Profile, Account Settings, Chatbox, Contacts, Search for Mentors, and Mentor Application. The main form area has a light gray background. It starts with the title 'Become a Mentor!' and the text 'I want to become a mentor in'. Below this are two dropdown menus for 'Academic Specialty' and 'Interest Specialty'. Then, there's a section for 'Experience in Field' with a text input field labeled 'Experience (in year)'. Finally, there's an 'Upload CV' section with a file selection button labeled '选择文件' and the text '未选择任何文件'.

(MentorRock Mentor Application: Part I)

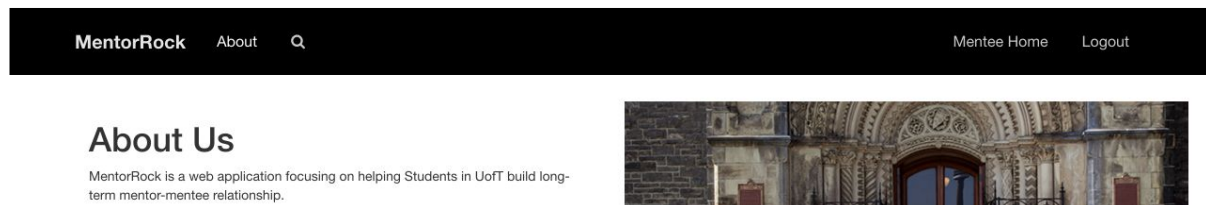
(MentorRock Mentor Application: Part II)

One will be able to see the text better when they're logged in themselves. Anyways, the last section in which the user has is the option for them to apply to become a mentor. Once on this page, they are given a form to which they must fill, and once they submit their information the user is then redirected back to their user homepage. Although they are not shown any new message on the homepage, as to any messages pertaining to whether or not they have submitted, their form data is saved to the user schema, which is then left for the admin to view and make any decisions pertaining to whether or not the user is able to become a mentor.

Mentor Schedule a Meeting

(MentorRock Mentor Schedule a meeting: Part I)

Once a user become a mentor, he/she can make a meet invitation for some of his/her mentee by making a schedule request to the database. There are meeting content, meeting time, involved mentees field in that schedule request. (half-finished) Those mentees who were invited, could either confirm that meeting schedule or decline it.



(MentorRock: Homepage navigation bar with User Logged In)

And if a user is logged in and at anytime they decide to press the “Home” button found at the top navigation bar, they are still able to access their User homepage from the general homepage.

IV : Features to be implemented in the future

To make things short, here is a list of features which were planned but weren't implemented at the end:

- ❖ Newsfeed: making it dynamic and implementing a calendar system for user
- ❖ Rating
- ❖ Meeting Notification: To mentee whenever a mentor has signed them up for a meeting

V: Setup instructions

Command to run for the setup before running the server:

Shell 1:

```
mongodb
use MentorRock
```

Shell 2:

```
npm install
node server.js
```

Preset accounts for testing purposes (there are 1000 preset users, details in user_new.json):

Admin Account:

Username: csc309TAs
Password: 123456

User Accounts:

Username: csc309ta1
Password: 123456
Username: csc309ta2
Password: 123456
Username: csc309ta3
Password: 123456