YouConnect

The Social Media App

Web Technology and Cyber Security Project

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Group Members and Contribution Details

Sno	Roll Number	Name	E-mail	Contribution in this work (write your contribution in this work such as task done, tools explored, knowledge gained and presented, etc.)
1	9918103022	Samarth Sajwan	sam.sajwan.2000@gmail.com	User Model, User Authentication.
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Declaration

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1.Abstract

The internet has been a platform for individuals, groups of people and companies to interact with one another through the social media. The social media has truly aided interaction and even other business services through social networks, forums, blogs, etc.

Social media apps have taken up a great part of our lives and the application market already, and their number continues to grow. With the increase of smartphone usage worldwide there have emerged the opportunities for social networks with more advanced features.

Social media helps people establish better relationships with their family and friends, and now the networking sites also show their significance for apps.

That is why people spend a lot of their time online browsing social sites, and usage has only gone up with increase in the use of smartphones and tablets.

The primary factor that makes social sites such an exciting place for your brand is that your audience is indeed there. Therefore, interaction with your clients becomes more accessible.

Every second, thousands of people share relevant information about their profile or their needs and demands digitally, either by a blog comment, on their status, in various ways, and this can end up in generating insights and adding value to enterprises.

Thus, it is clear that social sites are vital for the development of a sound work plan that reflects on the acquisition of new customers and consequently increases the number of sales and downloads.

Companies can use these platforms differently and obtain numerous advantages and benefits. See the following main advantages of social sites for the expansion of your app.

YouConnect is a social media application with rudimentary features inspired by existing social media platforms such as Facebook and Twitter. The main purpose of this application is to demonstrate how to use the MERN stack technologies to implement features that allow users to connect and interact over content. We can extend these implementations further, as desired, for more complex features.

2.Scope Of The Project

2.1 Functional Requirements-

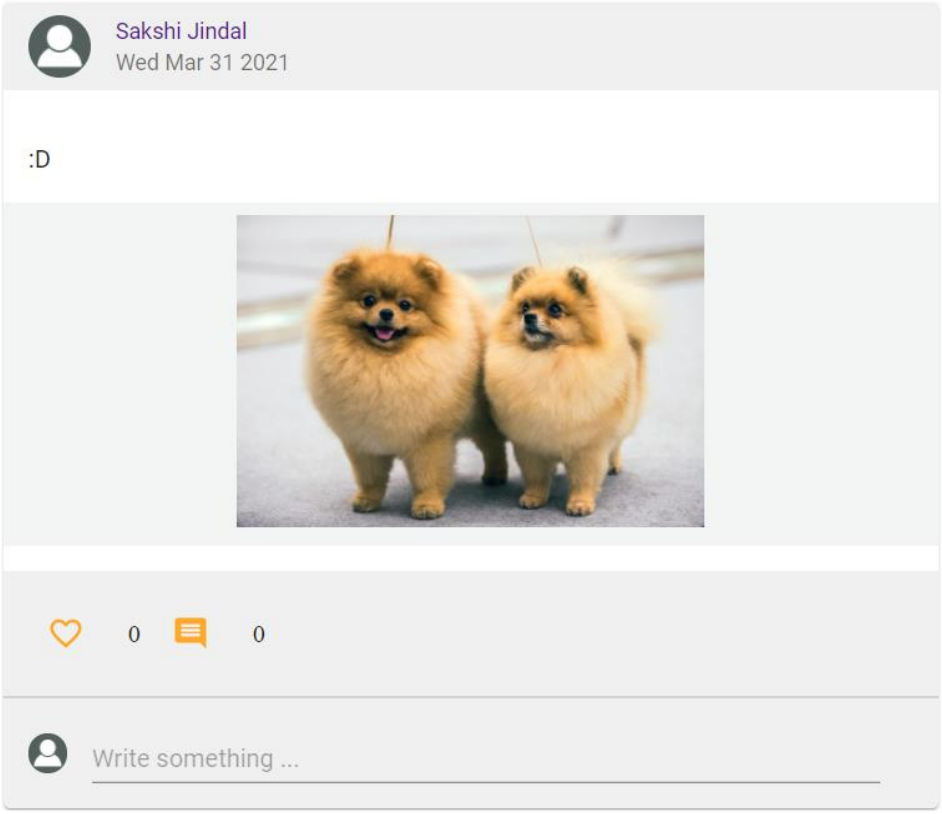
1. **Social authorization**: Users can register/login via the application.
2. **Post creation**: Users can create posts.
3. **Post likes**: Users can like and unlike post.
4. **User profile**: Users can manage a profile.
5. **Edit Profile**: Users can edit their profile data.
6. **Delete Profile**: Users can delete their profile.
7. People can check who they are following and their followers.
8. **Home Page**: Users can see all the posts created by the people they are following.

2.2 Non Functional Requirements:

1. **Portability**:Application should work on all kinds of browsers.
2. **Platform**: Application must be platform independent.
3. **Adaptability**: Able to work on most of the machines.
4. **Hardware**:Laptop with Minimum 1.0 Ghz of clocked frequency CPU, minimum 2GB RAM.

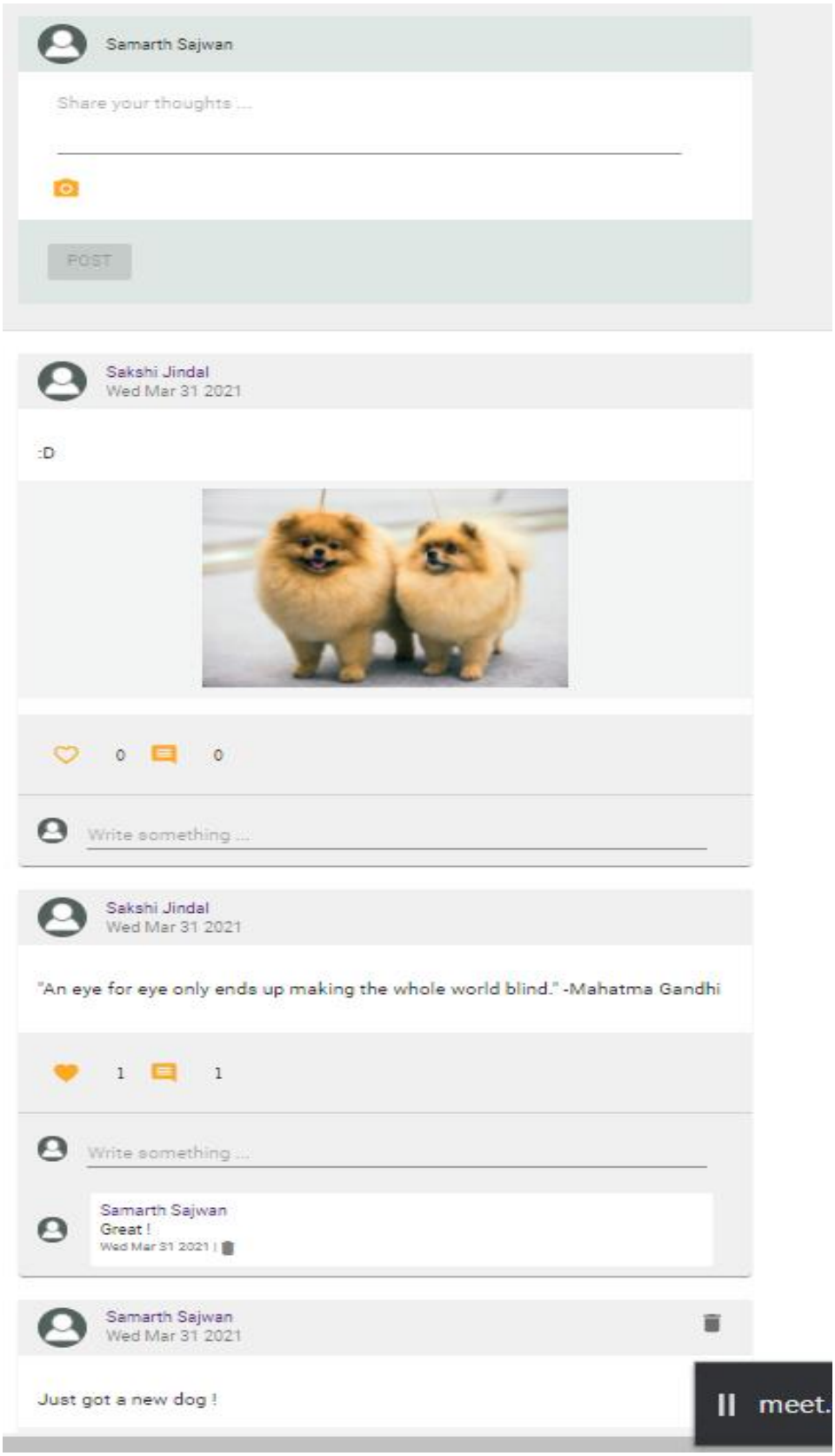
2.3 Description of Modules Used:

- **Posts Module:** Users can create posts to share their ideas and thoughts, which can be seen by their followers, who can like and comment on these posts.

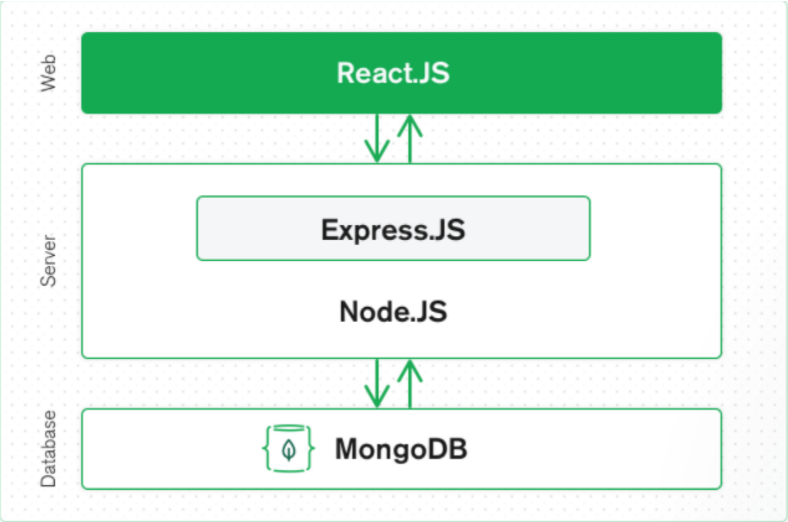


- **Users Module:** People can create accounts by signing up to the social media and existing users can sign in.

- **Followers and Unfollowers Module:** Users can follow other people so that their new posts will come up on their home page.



MERN stands for MongoDB, Express, React, Node, after the four key technologies that make up the stack. Its architecture allows you to easily construct a 3-tier architecture (frontend, backend, database) entirely using JavaScript and JSON.



3.1) MongoDB - document database

If your application stores any data (user profiles, content, comments, uploads, events, etc.), then you're going to want a database that's just as easy to work with as React, Express, and Node.

That's where MongoDB comes in: JSON documents created in your React.js front end can be sent to the Express.js server, where they can be processed and (assuming they're valid) stored directly in MongoDB for later retrieval.

3.2) React(.js) - a client-side JavaScript framework

The top tier of the MERN stack is React.js, the declarative JavaScript framework for creating dynamic client-side applications in HTML. React lets you build up complex interfaces through simple Components, connect them to data on your backend server, and render them as HTML.

React's strong suit is handling stateful, data-driven interfaces with minimal code and minimal pain, and it has all the bells and whistles you'd expect from a modern web framework: great support for forms, error handling, events, lists, and more.

3.3) Express(.js) - Node.js web framework

The next level down is the Express.js server-side framework, running inside a Node.js server. Express.js bills itself as a "fast, unopinionated, minimalist web framework for Node.js," and that is indeed exactly what it is. Express.js has powerful models for URL routing (matching an incoming URL with a server function) and handling HTTP requests and responses.

By making XML HTTP Requests (XHRs) or GETs or POSTs from your React.js front-end, you can connect to Express.js functions that power your application. Those functions in turn use MongoDB's

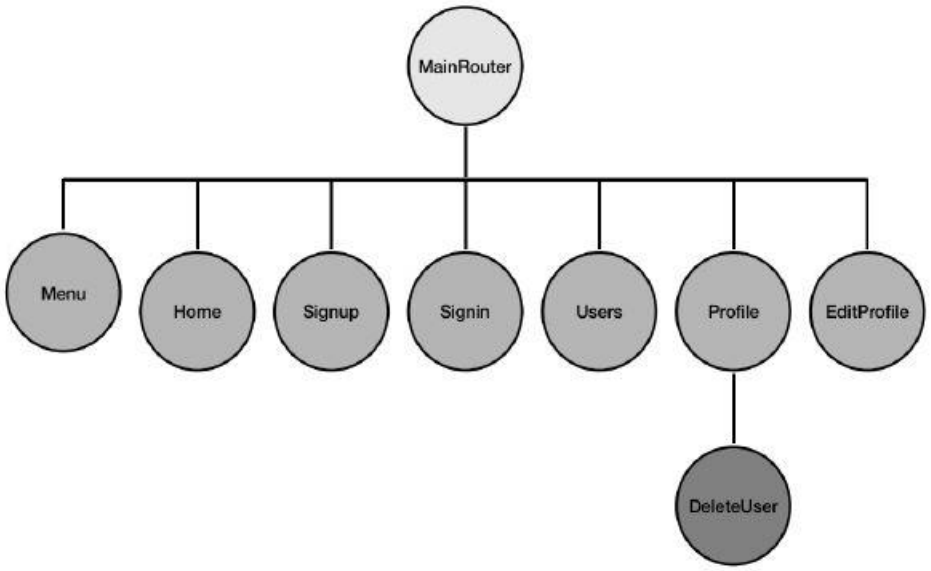
Node.js drivers, either via callbacks for using Promises, to access and update data in your MongoDB database.

3.4) Node(.js) - the premier JavaScript web server

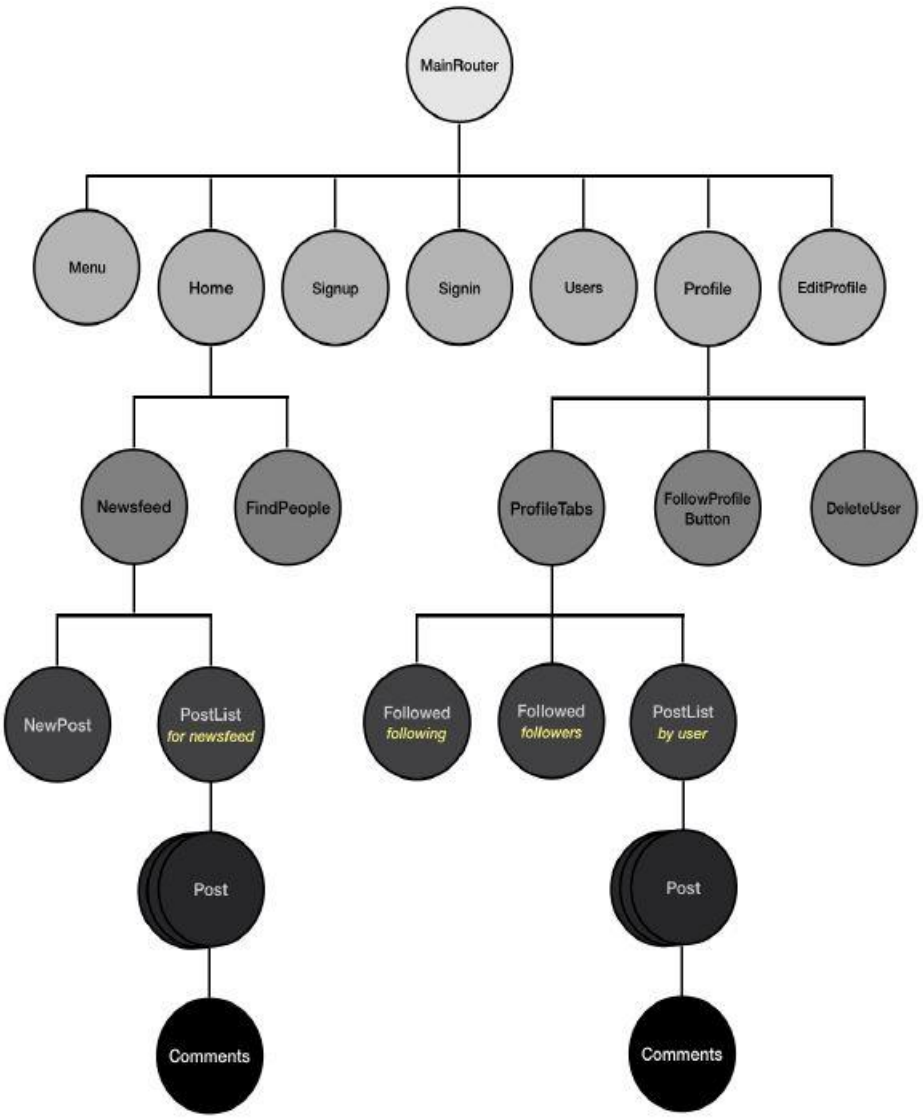
Node.js is an event-based, non-blocking, asynchronous I/O framework that uses Google's V8 JavaScript engine. It is used for developing applications that make heavy use of the ability to run JavaScript both on the client, as well as on server side and therefore benefit from the re-usability of code and the lack of context switching. It is open-source and cross-platform. Node.js applications are written in pure JavaScript and can be run within Node.js environment on Windows, Linux etc…

4.Design

4.1. **Basic skeletal design**



4.2. **Complete design**



5. IMPLEMENTATION

The YouConnect Social application we developed in this project demonstrated how the MERN stack technologies can be used together to build out a fully-featured and functioning web application with social media features.

We began by updating the user feature in the skeleton application to allow anyone with an account on MERN Social to add a description about themselves, as well as upload a profile picture from their local files. In the implementation of uploading a profile picture, we explored how to upload multipart form data from the client, then receive it on the server to store the file data directly in the MongoDB database, and then be able to retrieve it back for viewing.

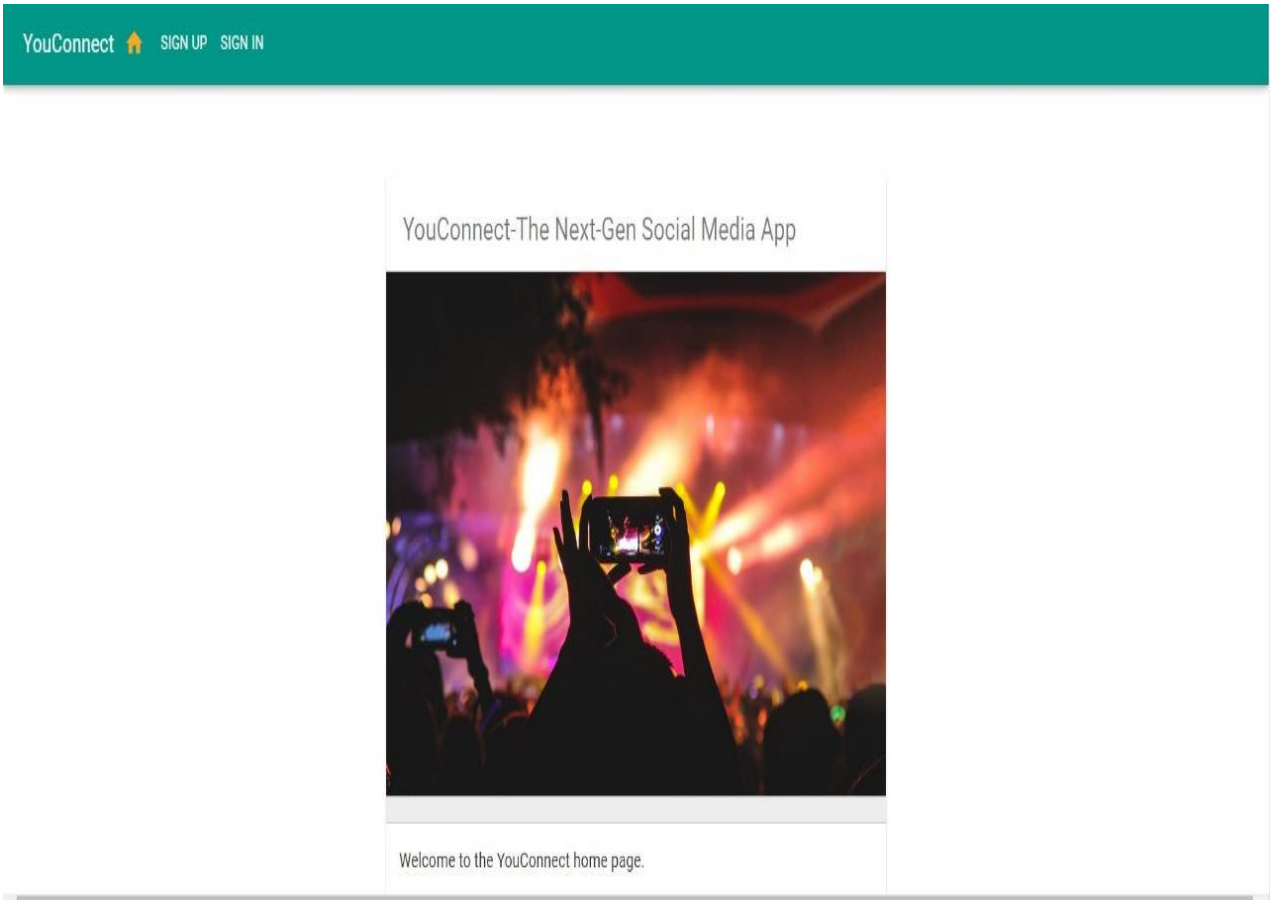
Next, we updated the user feature further to allow users to follow each other on the MERN Social platform. In the user model, we added the capability to maintain arrays of user references to represent lists of followers and followings for each user. Extending this capability, we incorporated follow and unfollow options in the view and displayed lists of followers, followings, and even lists of users not followed yet.

Then, we added the ability to allow users to post content and interact over the content by liking or commenting on the post. On the backend, we set up the Post model and corresponding APIs, which are capable of storing the post content that may or may not include an image, as well as maintaining records of likes and comments that are incurred on a post by any user.

Finally, while implementing the views for the posting, liking, and
commenting features, we explored how to use component composition and share changing state values across the components to create complex and interactive views.

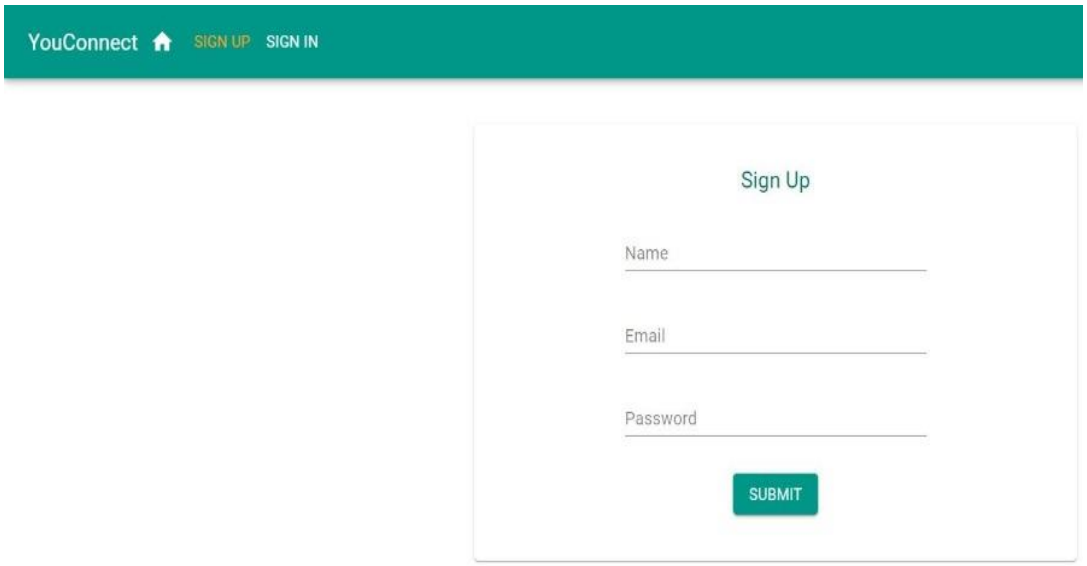
6. SCREENSHOTS AND EXPLANATIONS/TESTING

1) Home Page



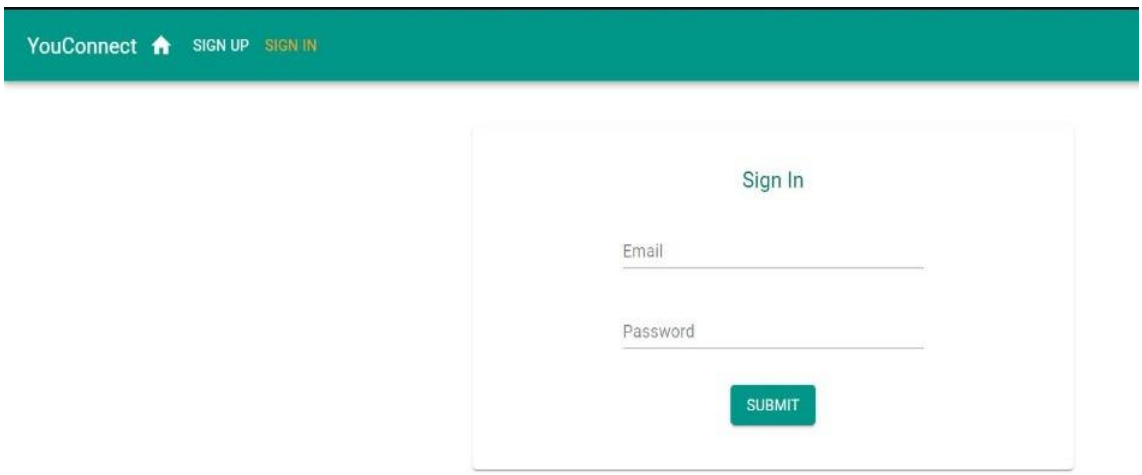
- This is the homepage of our application.
- On the header, there are two options:
    - Sign Up: For new users
    - Sign In: For existing users.

2) Sign Up Page



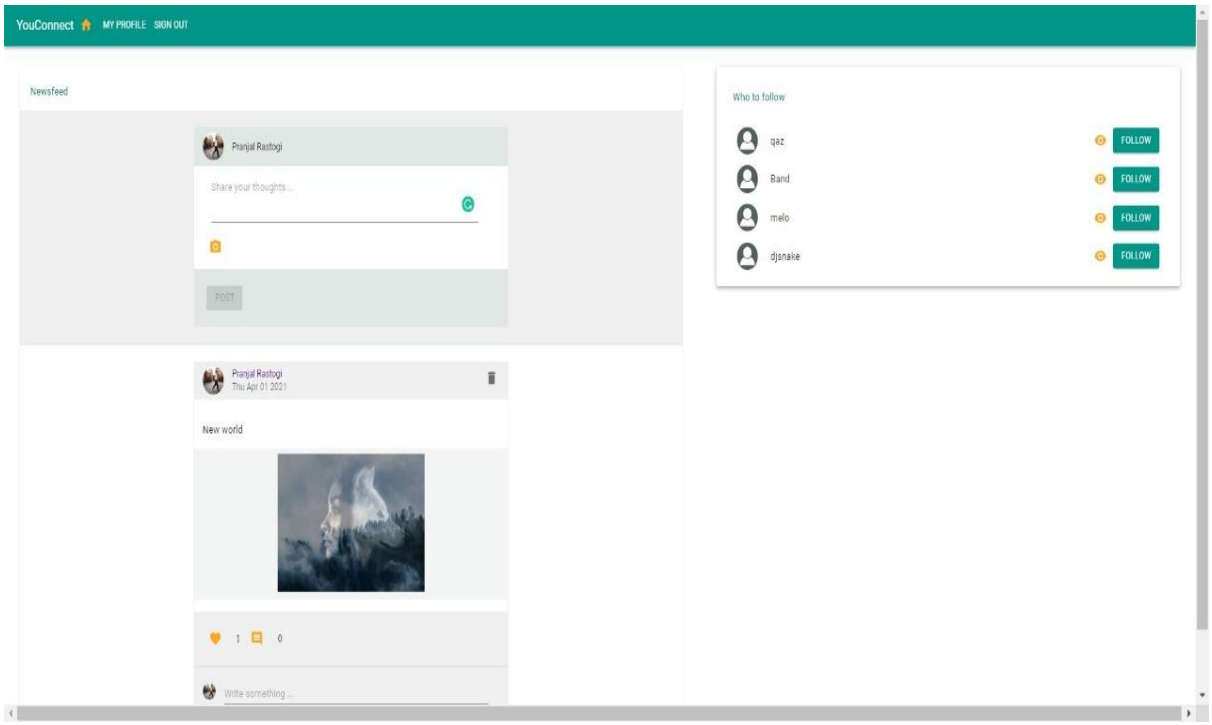
- Users are required to fill in their email IDs and Name.
- The password has to be a minimum of 6 characters.
- After this, users are redirected to the Sign in Page.

3) Sign in Page



- This page is for existing users.
- Existing users are required to enter their registered email IDs and the password associated with their accounts.

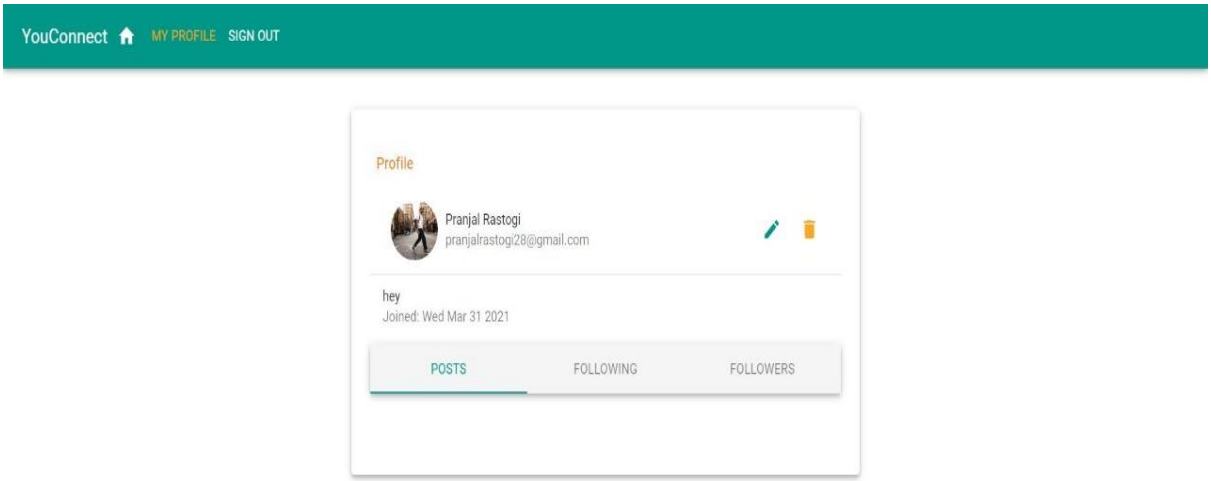
4) Newsfeed Page



- After signing in, users can see all the posts made by other users whom they are following, and can like and comment on these posts.
- Users can also create their own posts and have an option to attach a photo to it.
- The posts that a user creates, will then be visible on the newsfeed of all their followers.

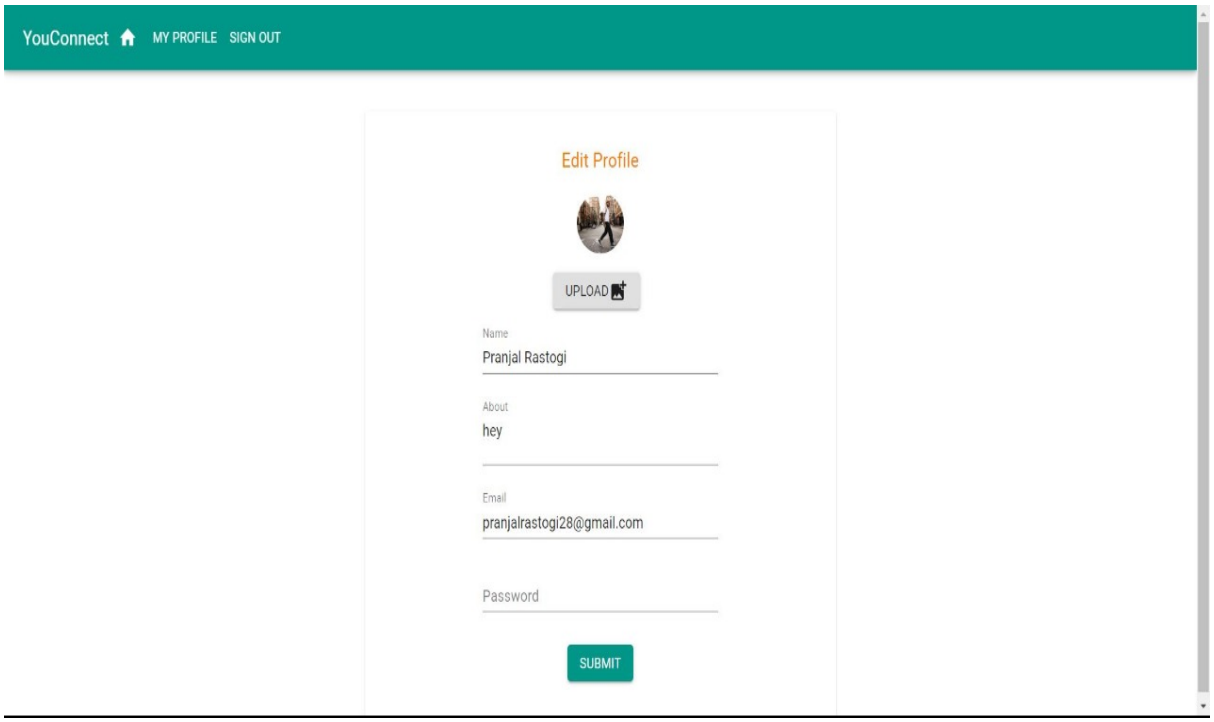
- Users also can see other users whom they are not following, and can choose to follow them by clicking on the “Follow” Button.
- Users can sign out of their accounts, by clicking the Sign Out button located at the header of the webpage.

5) Profile Page



- At the top of the Profile section, users can see their profile picture and email ID associated.
- Users can edit their profile info or choose to delete their profile using the buttons available.
- On the bottom of the section, there are analytics showing the posts of the user, and his followers and the people he’s following.

6) Edit Profile Page



- At the top of the Edit Profile section, users can change their profile picture and their name.
- Users can edit their "**About**" section/bio.
- On the bottom of the section, there are fields to change the Email ID and the password associated with the account.

7. References

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