InstaBook-(A Social Platform)

Internship report submitted in fulfillment of the requirements for the Degree of

B.Tech

in

COMPUTER SCIENCE & ENGINEERING

By

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Project Objective:

This project is based on the web development technology stack which contains 4 major technologies grouply known as MERN Stack.

Project is about a social networking application where some groups of people can interact and share their views via posts that they share on their timeline.

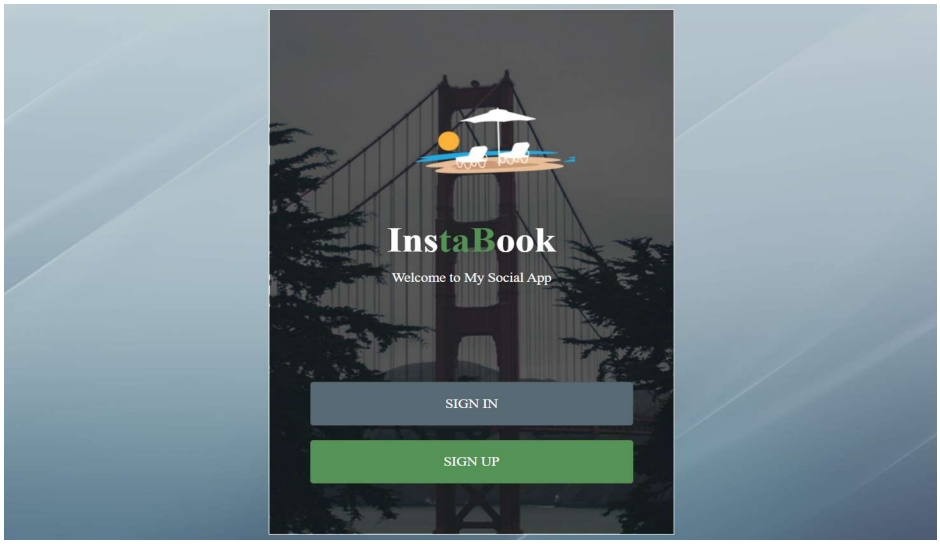
As it was a learning based project, hence the main aim of the project is to learn some new technologies and implement them in some real life problems.

Project Description:

InstaBook is a social media platform implemented with basic functionalities of standard social platforms.

Social networks have transformed marketing and, as this post shows, their popularity is still growing in our latest global social media statistics research summary for 2020 . Networks vary in popularity with different demographics and they're still evolving.

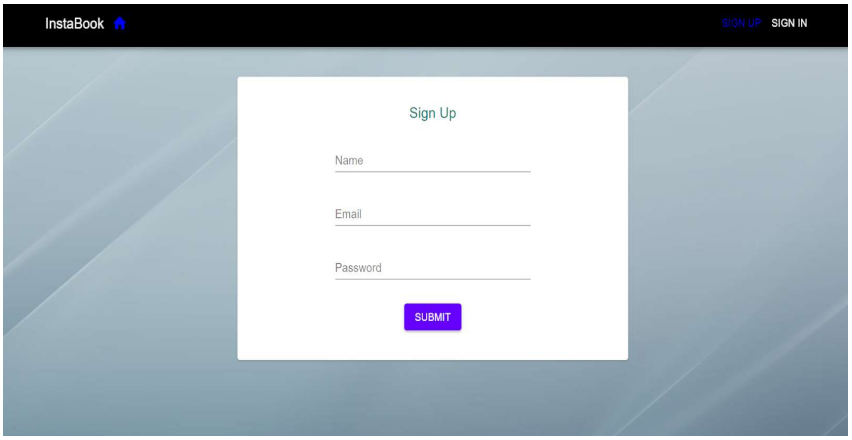
Home Page of InstaBook:



Features that are included in InstaBook:

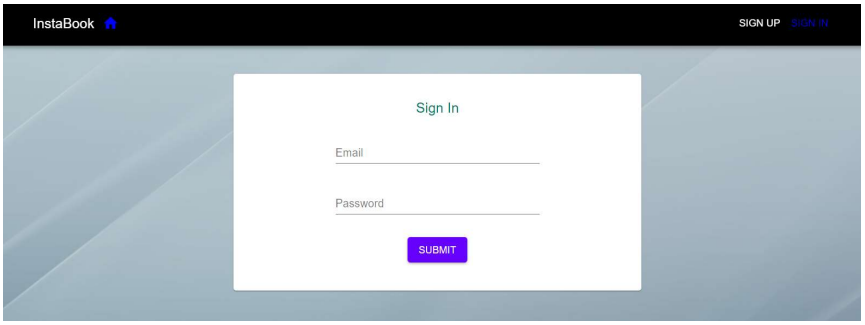
1. **SignUp** : It helps users to create an account which will be accessible using a password only which he/she set during creation time. Data Required during account creation (Name, Unique Email-id, Password).

   SignUp Page of InstaBook:



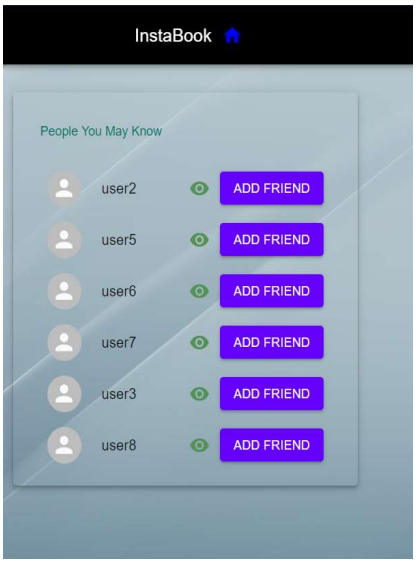
2. **SignIn:** Feature to get the user to the platform where he/she can interact with other users who are already on InstaBook. Users have to signIn using the unique email-id and the password that was set by them at account creation time.

   SignIn Page of InstaBook:



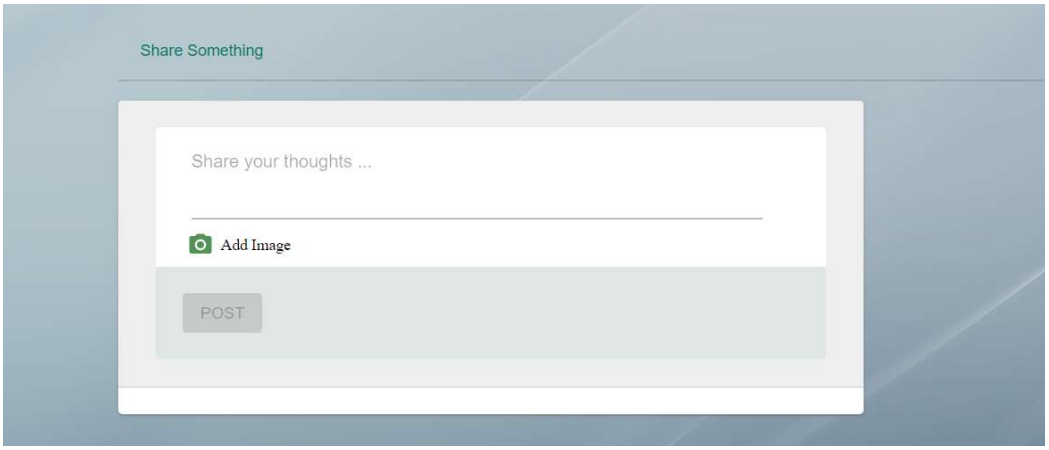
3. **Add Friend:** This feature adds the other user to the friend list of the user and he/she can view whatever another user have shared and will share later on.

   Panel from where we can add friends:



4. **Share Post:** Users can share any post (that include text or image or both) on his/her timeline which will be visible to all the users which add that user as a friend.

   Share Post portal in InstaBook:



5. **Newsfeeds:** This section contains all the posts that are being shared by the user and other users whom he/she have followed.

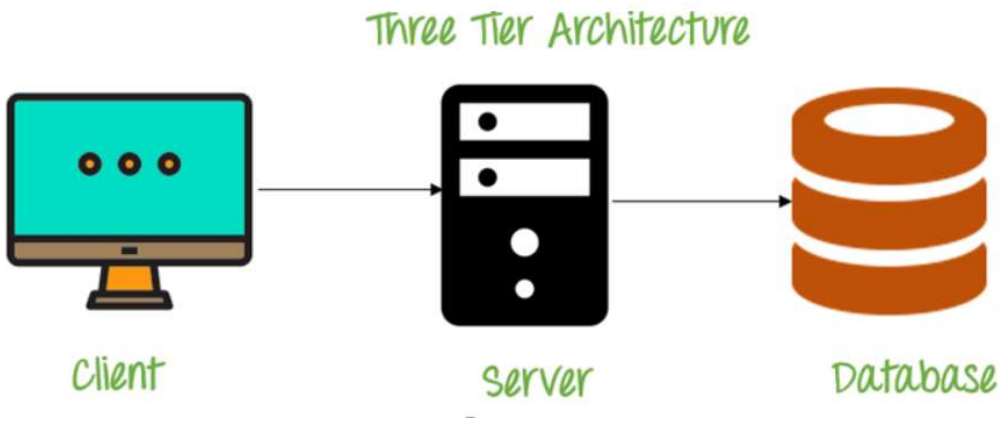
6. **Like or Dislike Post:** User can like and dislike the post that he/she sees in News Feeds using the like button that is available just below the particular post.

7. **Comment on the post:** User can comment on the post that he/she came across and the comment can contain text only. Later on User can also delete that particular comment that he/she made on any post.

Skills and Technologies Used:

In this project, 3-tier Architecture is used which is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms.

Flow Diagram of 3-tier Architecture:



1. **Database**: Database is a collection of information that is organized so that it can be easily accessed, managed and updated.

   It can be formed in two types: Relational Database & Non-Relational Database which are commonly known as Sql & No-Sql Database.

   Here, I have used No- Sql Database using MongoDB which is a cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas.

In database, I have included two schemas which are as follows:

1. **User Schema:** It signifies the account of the user that he/she had made. User Schema contains the following details.

   Name: Username

   Email: Uniques id to identify user.

   Hashed_Password: Encrypted password so that no one can see either after getting into the database. For encryption, I have used the SHA-1 algorithm which is a cryptographic hash function which takes an input and produces a 160-bit (20-byte) hash value.

   Created: Date of Joining the InstaBook.

   About: Small description about the user.

   Photo: Profile Image of the user

   Following: Users that the user has added as a friend.

   Followers: Users that have added the user as a friend.

Snippet of a User in Database:


```
_id: ObjectId("5f5b06fc8baf63321c92e933")
following: Array
  0: ObjectId("5f5b07358baf63321c92e935")
followers: Array
name: "user1"
email: "user1@gmail.com"
salt: "1055118387790"
hashed_password: "03b5de018ba27ea63181f4bc57dd6ed8835a2287"
created: 2020-09-11T05:11:24.004+00:00
__v: 0
```

2. **Post Schema:** It represents the posts that have been shared on the InstaBook by various Users.

   Post Schema contains following Details:

   Text: Caption of the post shared.

   Photo: Image that is shared in the post.

   Likes: Reference of all the users that likes the post.

   Comments: This section splits further

   - Text: Text of the comment.
   - Created: Date of comment made.
   - Posted By: reference of the User who made that comment.

   Posted By: Reference of the user that has shared the post.

   Created: Date of Post Sharing.

Snippet of Post in Database:

2. **Server Side**: It is an application logic layer which contains all the services to be performed as per required by the application during runtime.

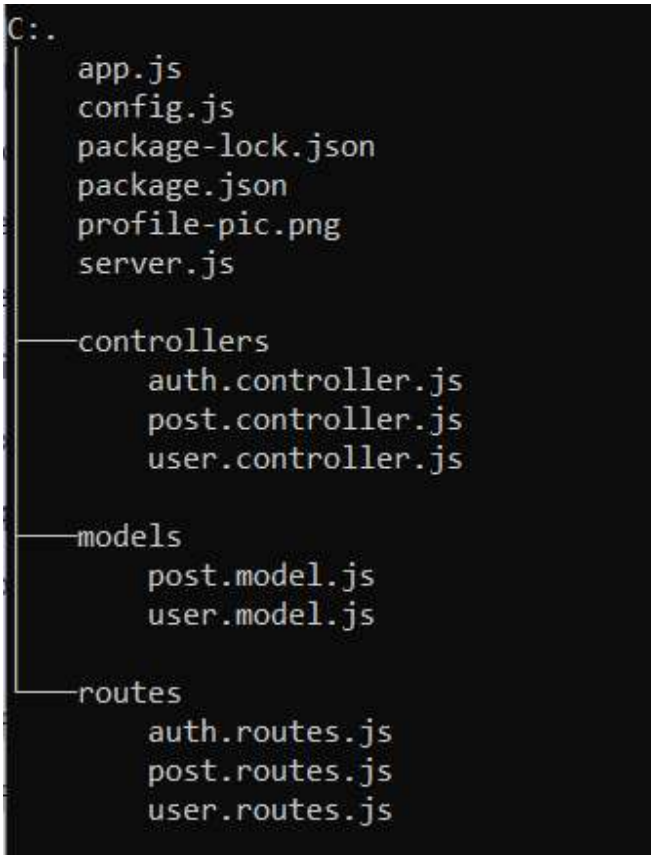
All the logical functionalities are defined in this layer. It basically works as an API (Application Program Interface) which is requested to perform several tasks and is supposed to get back with a proper response.

Many Languages and Frameworks are there which are used to design such logics. Here, I have used **ExpressJs** (a Javascript Framework) which is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications. APIs.

Services and their particular routes in the Instabook are as follows:

1. User Create : /api/users/ (post request)
2. User SignIn: /auth/signin (post request)
3. User SignOut: /auth/signout (get request)
4. List Users: /api/users (get request)
5. Get Profile Photo: /api/users/photo/:userId (get request)
6. Follow User: /api/users/follow (put request)
7. Unfollow User: /api/users/unfollow (put request)
8. Find User: /api/users/findpeople/:userId (get request)
9. Post Create: /api/posts/new/:userId (post request)
10. Get all Feeds: /api/posts/feed/:userId (get request)
11. Like Post: /api/posts/like (put request)
12. Unlike Post: /api/posts/unlike (put request)
13. Comment on Post: /api/posts/comment (put request)
14. Delete Comment: /api/posts/uncomment (put request)
15. Delete Post: /api/posts/:postId (delete request)

ServerSide architecture of directory:



3. **Client Side:** This is the presentation layer of the application which contains all the User Interface and some logical aspects also like authentication, Session Management and various other things.

For designing this layer, I have used **ReactJs** which is an open-source JavaScript library for building user interfaces or UI components.

All the features that I have designed are explained above in the Report.

ClientSide architecture of directory:

Conclusion:

Report is for describing the working and designing of the project named as InstaBook. All the layers and their particular features are explained thoroughly. As it was a learning based project so my main aim was to learn the technologies which I think I have done and as a result I have made this project InstaBook.

Github Repository Link:

https://github.com/P1yu5hgupta/InstaBook