

# **Project Report On**

## **WeConnect: Social Media Web App**

Submitted in partial fulfillment for the award of

**Diploma in Advance Computing (DAC)**

**Guided By:**

**Mr. K Vamsikrishna**

**Submitted by**

S.No	PRN	Name
1	230350320094	SANDEEP UPADHYAY
2	230350320100	SATPUTRE SHITAL DASHRATH
3	230350320099	SARANSH SINGH
4	230350320091	RUTUJA RAJENDRA SAWANT
5	230350320098	SARANG TOPALE
6	230350320090	RUTUJA AJABRAO KHAWASHI



**Centre for Development of Advanced Computing**

Plot No. 6 & 7, Hardware Park, Sy No. 1/1, Srisailam Highway,  
Pahadi Shareef Via (Keshavagiri Post) Hyderabad - 501510  
Telangana(India) Phone:+91-9100034446/7/8

## **ACKNOWLEDGEMENT**

This project “WeConnect” was a great learning experience for us and we are submitting this work to CDAC, Hyderabad. We are very glad to mention the name of Mr. Vamsikrishna for his valuable guidance to work on this project. His guidance and support helped me to overcome various obstacles and intricacies during the course of project work. Our heartfelt thanks go to Mr. M. Kumar (Course Coordinator, DAC) who gave all the required support and kind coordination to provide all the necessities and extra hours to complete the project and throughout the course up to the last day here in C-DAC, Hyderabad.

**From:**

SANDEEP UPADHYAY (230350320094)

SHITAL DASHRATH SATPUTE (230350320100)

SARANSH SINGH (230350320099)

RUTUJA RAJENDRA SAWANT (230350320091)

SARANG TOPALE (230350320098)

RUTUJA AJABRAO KHAWASHI (230350320090)

# INDEX

TITLE	Page No.
<b>1) Introduction .....</b>	<b>1</b>
<b>2) Project Scope.....</b>	<b>2</b>
<b>3) Purpose of Documents.....</b>	<b>3</b>
<b>4) Product Perspective.....</b>	<b>3</b>
<b>5) Product Details.....</b>	<b>4</b>
i. User Registration and Profile	
ii. Streamlined User Experience	
iii. Post Creation	
iv. Connections	
v. Light and Dark Modes	
<b>6) User Characteristics.....</b>	<b>4</b>
i. Hardware	
ii. Software	
a.Frontend	
b.Backend	
c.Database	
iii. Additional Technologies	
iv. Other Applications	
<b>7) System Features.....</b>	<b>6</b>
i. User Registration	
ii. User Log in	
iii.Home Page	
a. User Widget	
b. Post Widget	
c.My Post Widget	
d. Sponsored Ad	
e. Friendlist Widget	
f. Navbar	
<b>8) External Interface Requirement.....</b>	<b>14</b>
i.User Interface	
ii.Hardware Interface	
iii.Software Interface	
iv.Communication Interface	
<b>9) Other Non-Functional Requirements.....</b>	<b>15</b>
i.Performance Requirements	
ii.Safety Requirements	
iii.Security Requirements	
iv.Sofware Quality Attributes	
<b>10) Analysis Models.....</b>	<b>17</b>
i.E-R Diagram.....	17
ii.Class Diagram.....	18
iii.Sequence Diagram.....	19
iv.Data Flow Diagram.....	20
<b>11) Future Scope.....</b>	<b>21</b>
<b>12) References.....</b>	<b>22</b>

## INTRODUCTION

In our digitally connected age, social media platforms have become integrated into our lives. These platforms allow us to connect with our friends, share our experiences and join the global community. "WeConnect" is the need to update social media using today's technology. Built on the powerful MERN (MongoDB, Express, React, Node.js) stack, WeConnect is no ordinary social network; it is committed to providing the best online experience. In a world full of social options, WeConnect stands out by combining new technologies with human relationships. As we move forward in our digital transformation landscape, WeConnect is more than a platform; It provides a digital hub where people can connect, share their stories and build a supportive community. This project is the beginning of our journey to revolutionize social media. It combines the power of technology with the nature of human connection. Welcome to "WeConnect", where technology meets real connection.

## • PROJECT SCOPE

### Functional Features for System Analysis:

**User Registration and Profile Management:** The system provides a user-friendly registration process with built-in validation mechanisms. This allows users to securely create accounts and upload profile photos, ensuring data accuracy and privacy.

**Responsive User Interface:** Leveraging React JS and Redux, the system ensures a responsive and adaptable user interface that seamlessly caters to various devices, including desktops, tablets, and mobile phones, optimizing the user experience.

**Post Management:** The platform empowers users to interact with posts through actions like liking, disliking, and viewing comments. This feature is crucial for facilitating user engagement and content interaction.

**User Connections:** The system supports the establishment and maintenance of user connections by enabling the addition of friends to a user's network. It also provides functionality for users to explore the profiles, posts, and connections of others, fostering a sense of community within the platform.

**Theme Customization:** Users have the option to personalize their viewing experience through the selection of light and dark themes. This feature enhances user comfort and aesthetics, ensuring an adaptable visual environment.

## • PURPOSE OF DOCUMENT

The SRS document details WeConnect's functions, features and specifications and guides development, implementation and testing. It lays the foundation for secure, user-friendly applications that promise to redefine speech in the digital world by exploring architecture, user interface, security and more.

The purpose of this SRS document for our "WeConnect" social media app is to outline essential software requirements. It covers user registration, login processes, and app flow. Developers gain guidance on technical specifications, design principles, and data flow, while users understand how to create accounts, log in, and interact within the app securely and seamlessly. This document acts as a bridge between the app's vision and practical implementation, ensuring developers create a robust platform and users grasp its functionalities effectively.

## • PRODUCT PERSPECTIVE

As we move forward in our digital transformation landscape, WeConnect is more than a platform; It provides a digital hub where people can connect, share their stories and build a supportive community. This project is the beginning of our journey to revolutionize social media. It combines the power of technology with the nature of human connection.

"WeConnect" is a social web application built using the MERN (MongoDB, Express, React, Node.js) stack. The platform facilitates user interaction and collaboration through a variety of key features and seamless connections. Users can easily register and create a profile, including uploading a profile picture. The app keeps users happy and works well with React JS and Redux and adapts to different devices like desktops, tablets and smartphones.

Users can join the platform by creating posts, interacting and commenting on posts. Also, the app allows users to expand their network by facilitating connections between them, adding friends and checking articles and posts. To suit personal preferences, "WeConnect" offers two options, light and dark, to increase visibility. Overall, "WeConnect" combines advanced technology with user-oriented features to create a powerful and engaging social platform.

## • PRODUCT DETAILS

**1. User Registration and Profile:** Our platform offers a user-friendly registration process with built-in validation, allowing users to easily create their accounts & upload their profile photos.

**2. Streamlined User Experience:** Using React JS and Redux, it ensures a smooth & engaging user experience. The application's responsive design adapts seamlessly on desktops, tablets & mobile phones.

**3. Post Creation:** The platform enables users to interact with posts by liking, disliking & commenting.

**4. Connections:** It enables users to build and maintain connections by adding friends to their network. Users can explore the profiles, posts and connections of other users.

**5. Light & Dark Modes:** Users can switch between light & dark themes for their viewing experience.

## • USER CHARACTERISTICS

Users can register, log in, create posts, view others' posts, like content, and read comments. It provides a comprehensive social media experience with essential features for user interaction and engagement.

### Operating Environment

The operating environment for the project consists of the following hardware and software components:

#### Hardware:

A computer with at least 8GB of RAM and a capable processor, such as Intel Core i5 or higher, to ensure smooth system performance.

#### Software:

**Frontend:-** React JS and Redux(React is a JavaScript library for creating user interfaces through a component-based structure. Redux is a state management

tool that simplifies data synchronization across React components in applications.)

**Backend:** - Node.js and express.js (Node.js serves as a JavaScript runtime for server-side execution, enabling scalable and event-driven applications, while Express.js, a web application framework built on Node.js, streamlines web development through features like routing, middleware, and handling of HTTP requests and responses.)

**Database:** - Mongoose for managing MongoDB Database (Mongoose is a popular Object Data Modelling (ODM) library for Node.js and MongoDB. It provides a higher-level abstraction over the MongoDB Node.js driver, making it easier to work with MongoDB databases in a more structured and organized manner.)

#### **Additional Technologies:** -

- React Router for Navigation,
- Formik and Yup for form validation,
- Redux toolkit for state management,
- Redux with Persist for local storage,
- React Dropzone for Photo upload.
- JSON Token for Authentication and
- Multer for File upload.

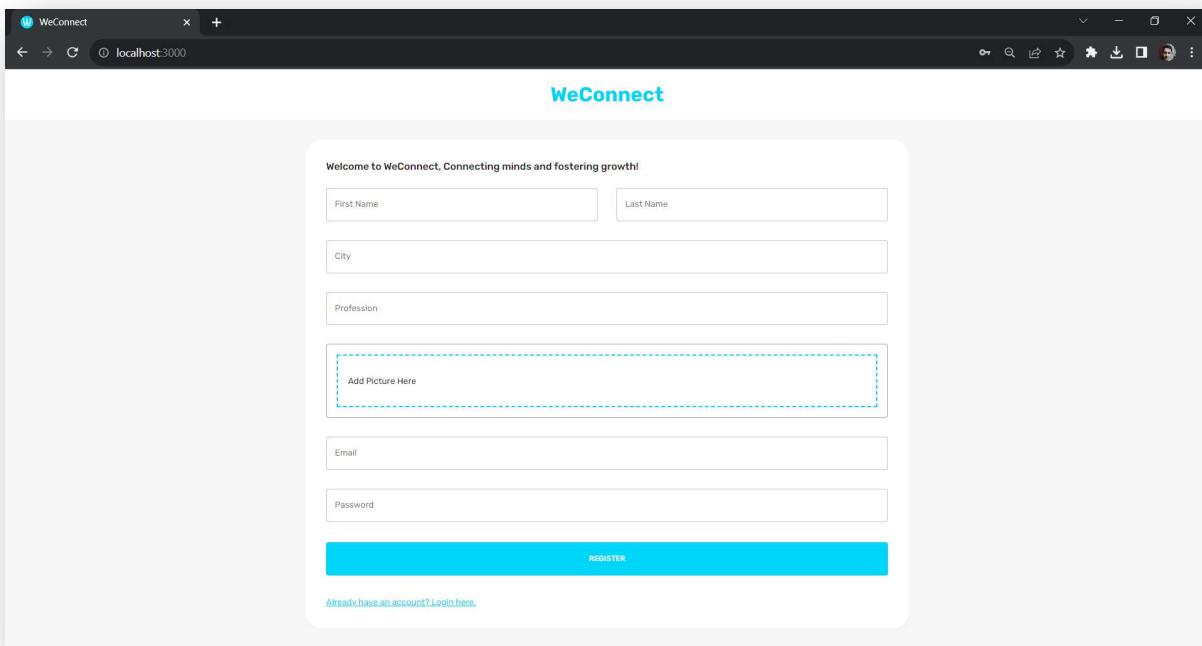
#### **Other Applications:**

- **Code Editor** (e.g., Visual Studio Code): To write and manage your code efficiently.
- **Command Line Interface (CLI) or Terminal:** To execute commands for development and deployment.
- **A Browser:** Essential for testing the application and ensuring its compatibility. Google Chrome, Mozilla Firefox.

## • SYSTEM FEATURES:

### ⌚ User Registration:

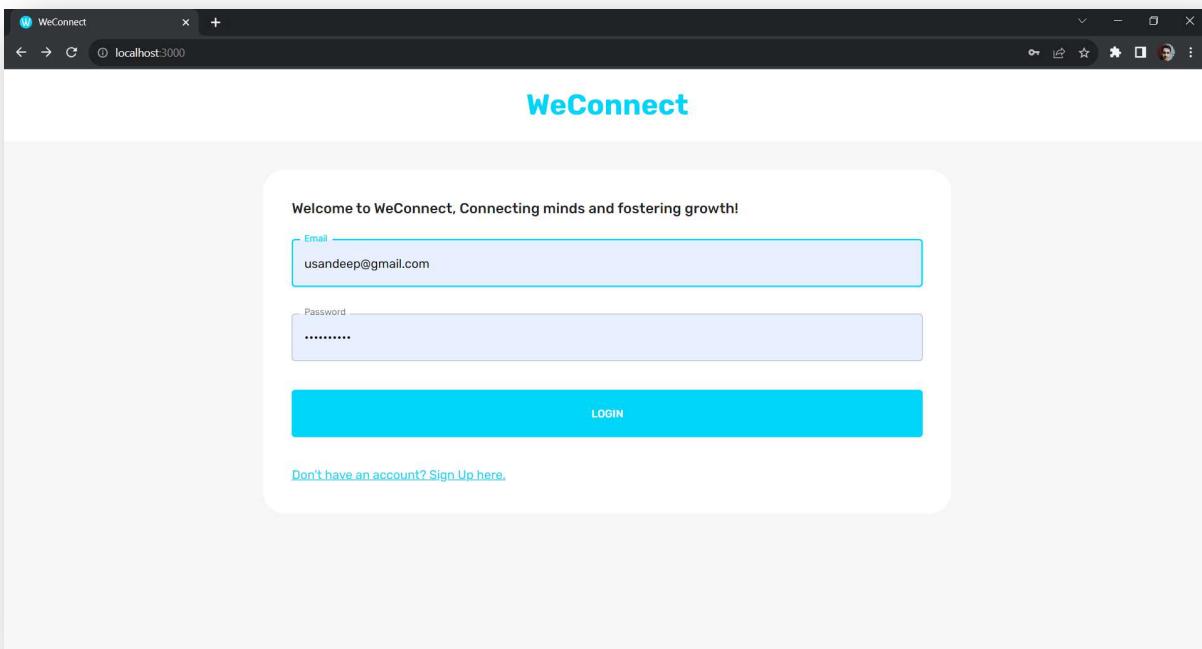
- **First Name:** Include a text field for users to enter their first name.
- **Last Name:** Provide a text field for users to enter their last name.
- **Location:** Text field for users to specify their location, depending on your requirements.
- **Occupation:** Include a text field where users can input their occupation.
- **Profile Picture:** Allow users to upload a profile picture.
- **Email Address:** Include a text field for users to enter their email address, and validate it to ensure it's a valid email format.
- **Password:** Provide a text field for users to create a password. Implement password strength checks, and offer guidelines (e.g., "Must be at least 8 characters, including uppercase, lowercase, numbers, and special symbols").



### ⌚ User Login:

- **Email Address:** Include a text field where users enter their registered email address.
- **Password:** Provide a text field for users to input their password. Implement password masking (so that characters are hidden) for security.

- The login form provides a link with the text "Don't have an account? Sign Up here." This link should direct users to the registration page.
- **Error Handling:** Display clear error messages for users if they enter incorrect login credentials or if there are other issues with their login attempt.

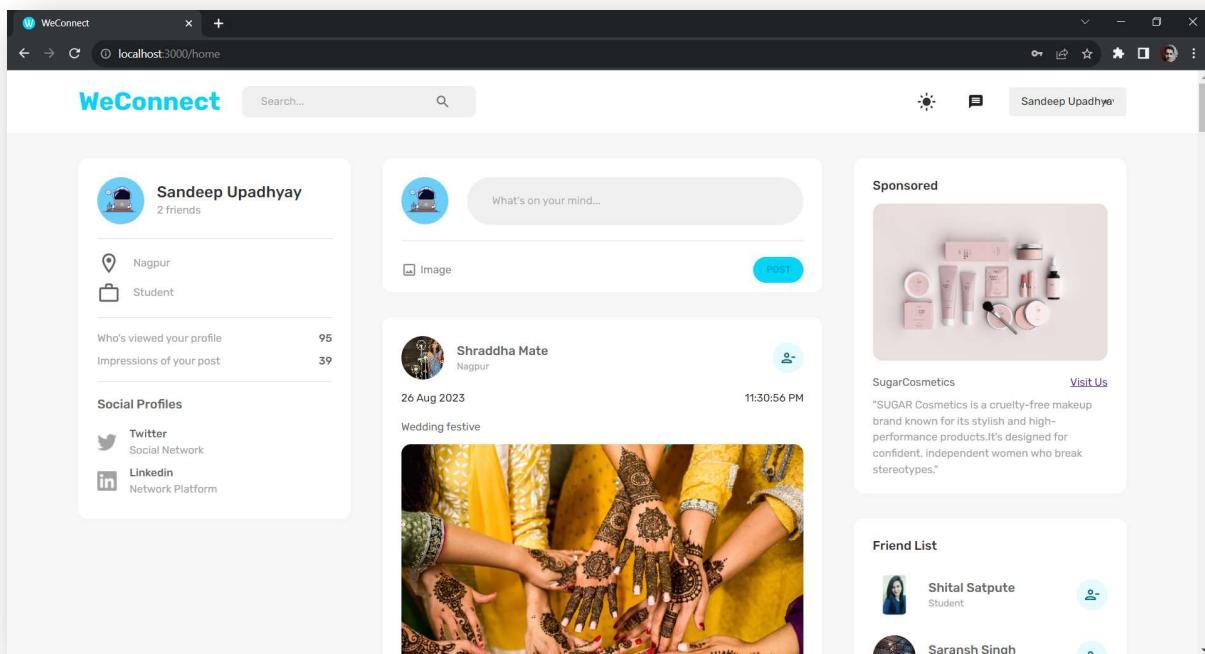


## ⌚ Home Page

### I. User Widget

1. **Name of User with Profile Picture:** This refers to the individual's full name, which is typically displayed on social media profiles, along with their profile picture, which is a visual representation of the user.
2. **City:** The city in which the user resides or is located. This information is often included in social media profiles to provide context about the user's location.
3. **Occupation:** The user's profession or job title, which is commonly listed in their social media profile to convey their current career.

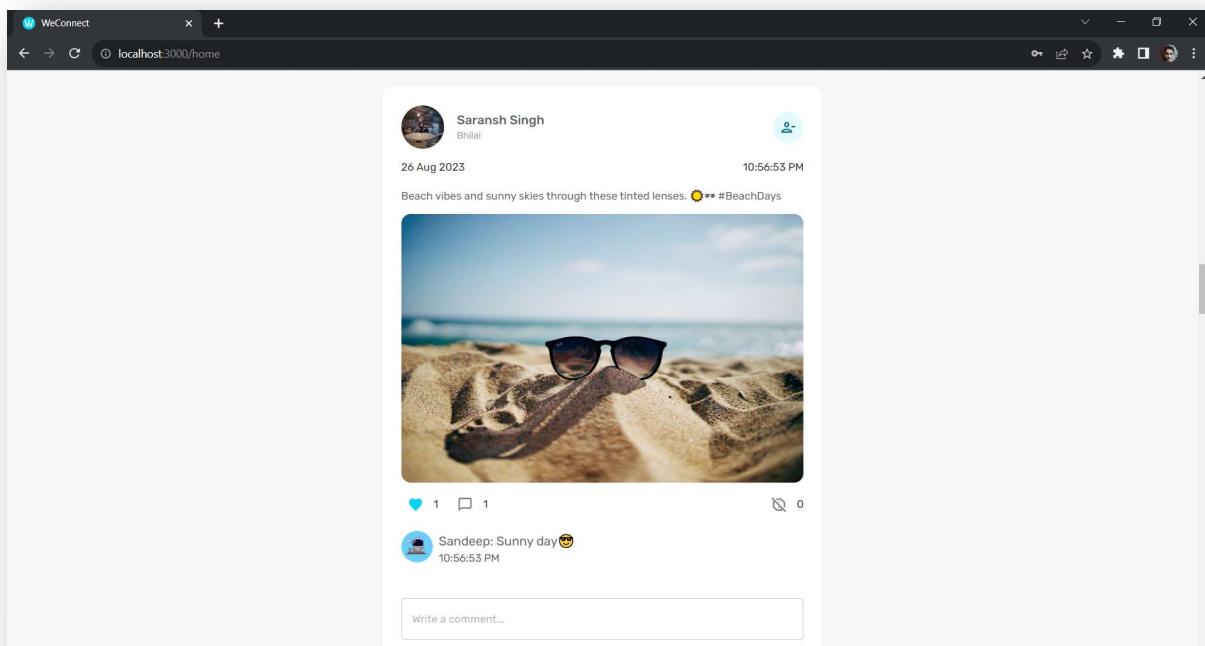
4. **Random Number for Profile View Count:** A randomly generated number that simulates the count of how many times the user's profile has been viewed by others on the social media platform.
5. **Random Number for Impressions:** A randomly generated number that simulates the total number of times the user's posts or content have been seen by others on the social media platform.
6. **Socio Profile of LinkedIn and Twitter:** This likely refers to a brief summary or description of the user's professional and personal background, skills, and interests as typically found on their LinkedIn and Twitter profiles.
7. **LinkedIn and Twitter Redirect to Websites:** This suggests that there are links on the user's social media profiles, such as LinkedIn and Twitter, which, when clicked, will redirect visitors to external websites. These websites may contain additional information about the user or their work.



## II. Post Widget

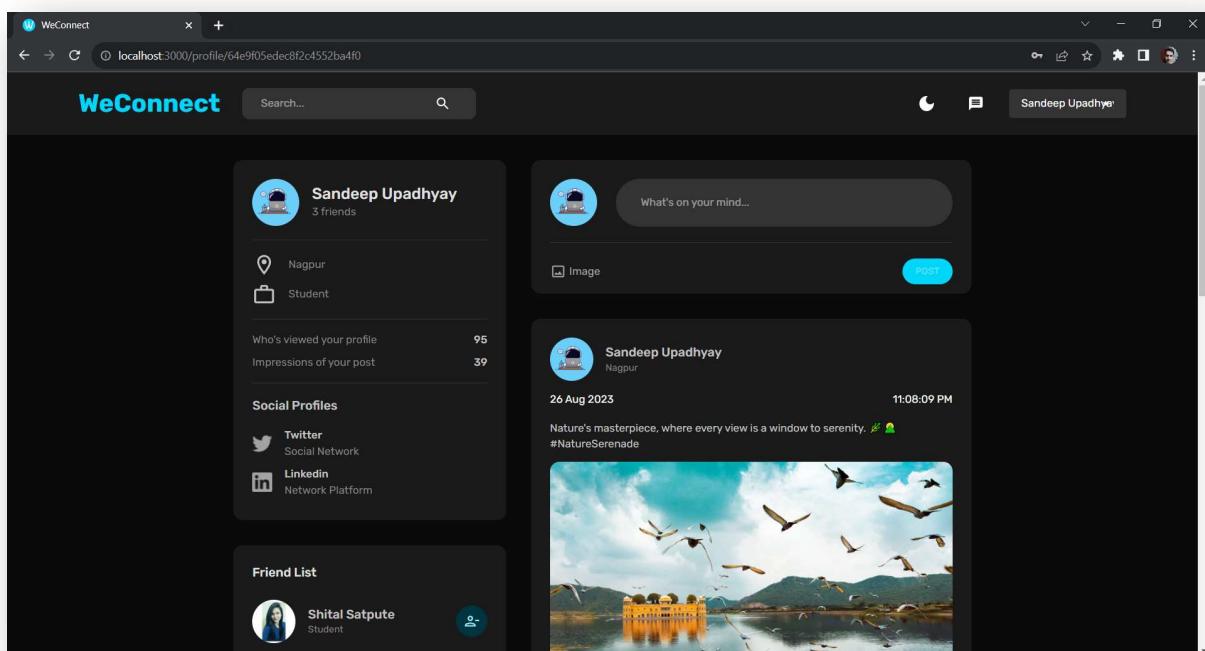
1. **Text Posts:** Users can create text-based posts where they can share thoughts, updates, stories, or questions.

2. **Text Comments:** Users can leave text-based comments on posts to engage in conversations or provide feedback.
3. **Likes:** Users can express their appreciation for a post by clicking a "like" or similar button.
4. **Counters:** The number of likes and reactions a post receives is often displayed publicly
5. **Feed:** The homepage typically displays a feed of posts from users or pages/accounts that a person follows.
6. **Date / Time:** Displaying the time and date when a post was published is a common feature on social media platforms and websites. It provides context and helps users understand when the content was shared.
7. **Reporting a Post:** There's usually a "Report" or "Flag" option on the post, which, when clicked, prompts the user to specify the reason for the report (e.g., spam, harassment, hate speech).
8. **Deleting a Post (User's Own Post):** Users can delete their own posts if they wish to remove content they've shared.



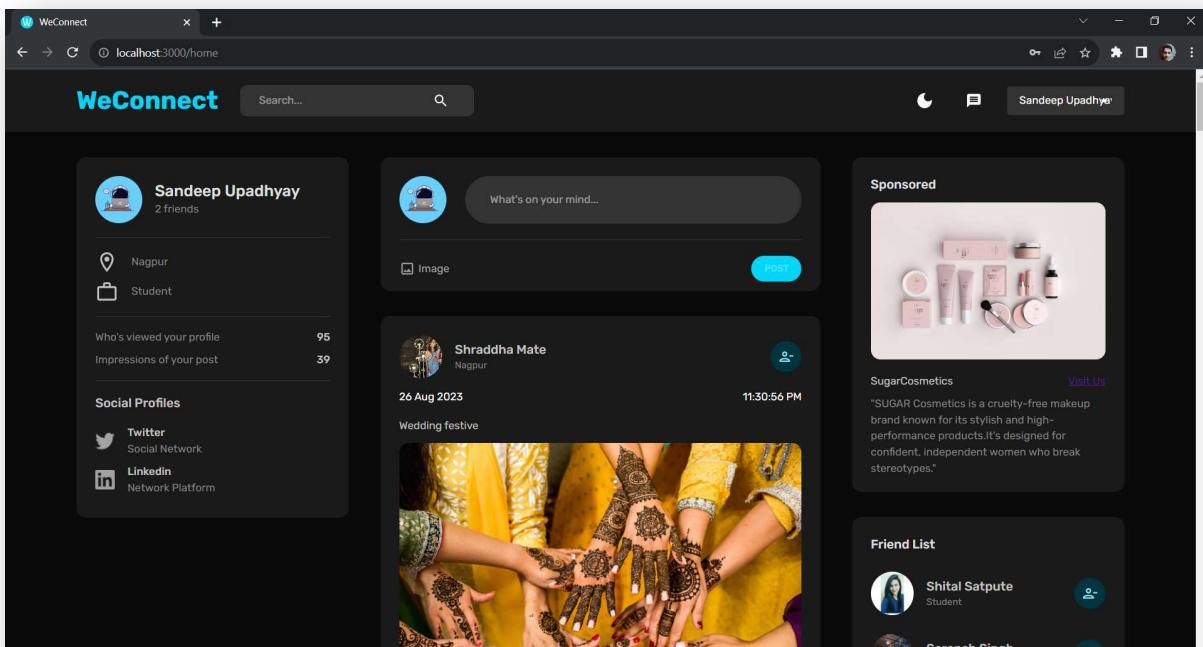
### III. My Post Widget

- 1. Profile Picture:** A profile picture is a visual representation of the user, typically a photograph or image that appears alongside their name on their social media profile. It helps other users recognize and connect with them.
- 2. Facility to Create Posts:** This feature allows users to compose and share content on their social media profiles. Users can write text, include images, videos, or other media, and share it with their followers or the public, depending on their privacy settings.
- 3. Upload Image with Captions:** Users can enhance their posts by uploading images or photos along with captions. The caption is a text description or message that provides context, additional information, or a message related to the image. This combination of visuals and text helps convey messages effectively on social media.



## IV. Sponsored Ad

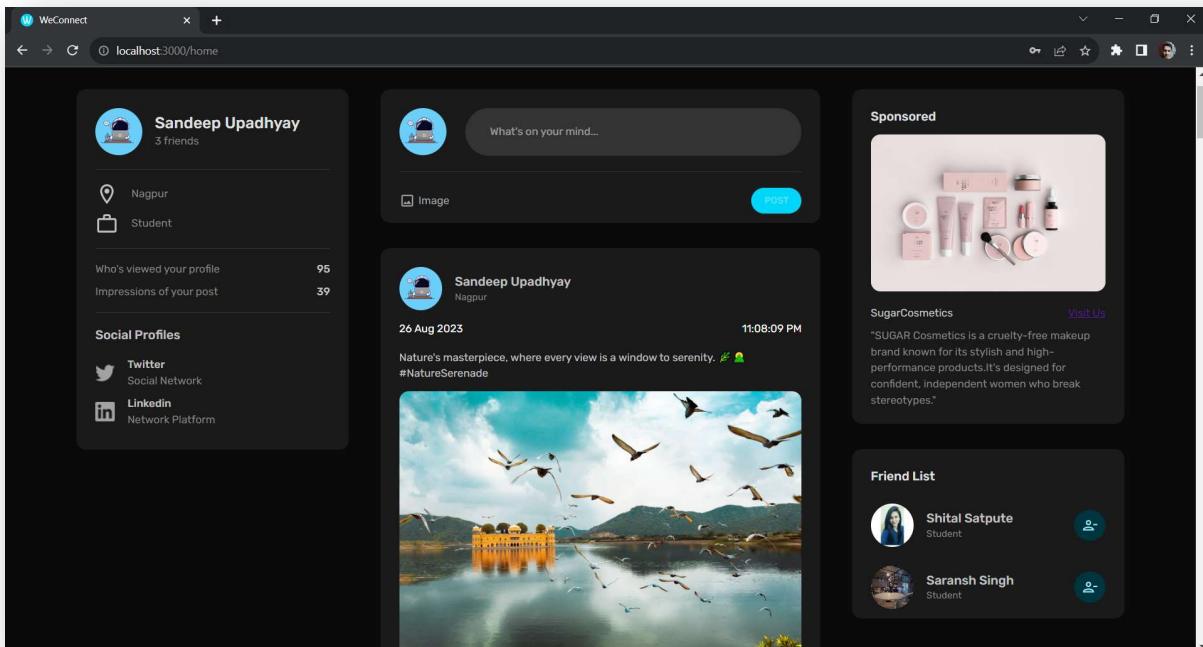
- Sponsored Ad:** A sponsored ad is a paid promotional content piece that is displayed to users on a digital platform. These ads are often designed to reach a specific target audience based on various demographic or behavioural factors. When users engage with a sponsored ad, it can lead to increased visibility and traffic for the advertiser's product, service, or website.
- Redirect to Website:** Clicking on the ad itself can redirect the user to the advertiser's website. This is a common practice in digital advertising, as it allows users to learn more about the products or services being promoted and potentially make a purchase or take some other desired action on the advertiser's website.



## V. Friend List Widget

- List of Friends:** It displays a list of a user's friends or contacts, often with profile pictures and names.
- Add Friend Button:** Within the post or on the user's profile information, there is usually an "Add Friend" button.

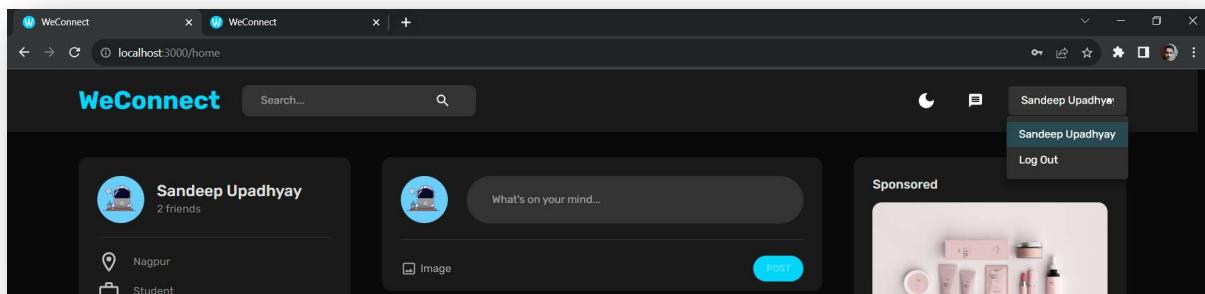
3. **Remove Friend Option:** Beside each friend's name or profile, there is usually a "Remove" option. Clicking on this option initiates the process of unfriending or removing that person from the user's friend list.



## VI. Navbar

1. **"Weconnect":** This text is positioned at the top-left corner and serves as the branding or title for the application or website.
2. **Search Bar:** Search results should display user profiles or relevant content, often with profile pictures, names, and brief descriptions.
3. **Dark/Light Mode Icon:** This icon allows users to switch between dark and light modes, altering the color scheme and brightness of the interface to suit their preference.
4. **Chatting Icon:** This icon represents a messaging or chat feature, enabling users to access and engage in conversations.
5. **Log Out Option:** When clicked, this option logs the user out of their account, enhancing security and privacy.

## Project Report for WeConnect



- **External Interface Requirements**

- **User Interfaces:**

The Social Media App is thoughtfully crafted with an intuitive and user-friendly interface, making it effortless for users to navigate and interact. Our platform focuses on enhancing the user experience, promoting seamless engagement and connectivity within the community.

- **Hardware Interfaces Server side:**

- ⦿ The web application will be hosted on a web server listening on the standard web port.

- **Client side**

- ⦿ **Monitor Screen:** The software will display information on the user's monitor screen.
- ⦿ **Mouse:** The software will interact with mouse movement and button clicks. The mouse will enable data input, command button activation, and menu option selection
- ⦿ **Keyboard:** The software will interact with keyboard keystrokes, allowing users to input data and interact with the system.

- **Software Interfaces**

- Server side:**

- ⦿ **Web Server:** The server will handle incoming client requests, manage communication, and route data to the appropriate components.
- ⦿ **Database:** The central database will store users, hotel and reservation data and communicate with the server to provide required information.

- Client side**

The client's operating system should support modern web browsers.

- **Communications Interfaces:**

The HTPP or HTTPS protocols will be used to facilitate communication between the client and server.

- **Other Non-functional Requirements**

- **Performance Requirements:**

The Social Media App's performance requirements ensure a smooth and efficient user experience, considering speed, responsiveness, and scalability:

- **Response Time:** The system should respond to user actions in less time to ensure quick interaction.
- **Scalability:** The system should handle increased user load during peak times without significant performance degradation.
- **Resource Efficiency:** Optimize resource usage to ensure efficient operation and reduce system load.

- **Safety Requirements:**

Safety requirements focus on system reliability and user-friendly interfaces to prevent errors and disruptions:

- **Reliability:** The system should maintain at least 99% uptime to ensure users can access and use the service reliably.
- **User Interface:** Design an intuitive and clear user interface to minimize user errors and enhance user satisfaction.

- **Security Requirements Security is paramount to protect user data and system integrity:**

- **Data Encryption:** Sensitive user information should be encrypted both during transmission and storage to prevent unauthorized access.
- **Authentication and Authorization:** Implement secure authentication and role-based authorization to ensure only authorized users access the system and its functionalities.
- **Access Control:** Set up fine-grained access control to restrict user actions and data access based on roles and permissions.

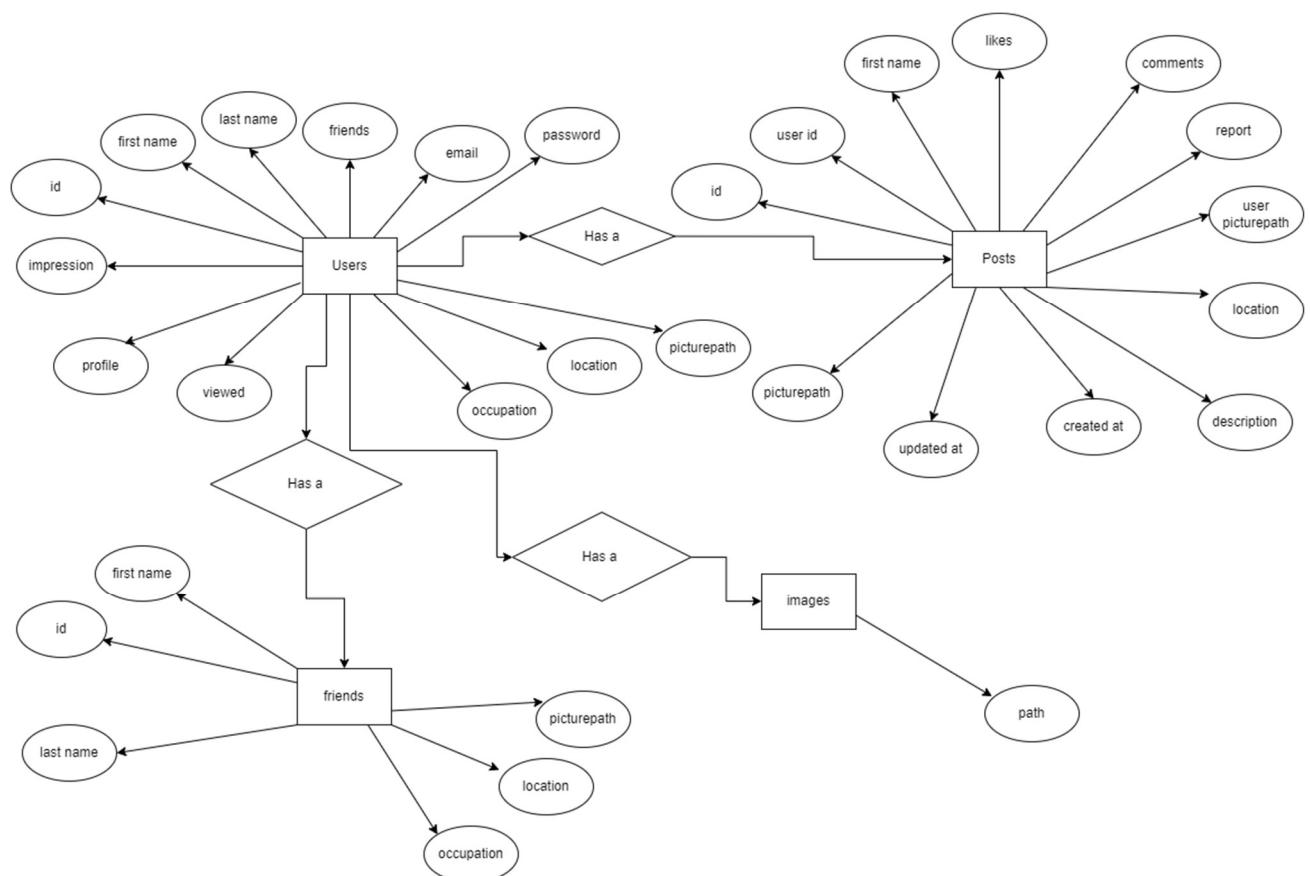
- **Software Quality Attributes:**

The Software quality attributes ensure usability, reliability, and maintainability:

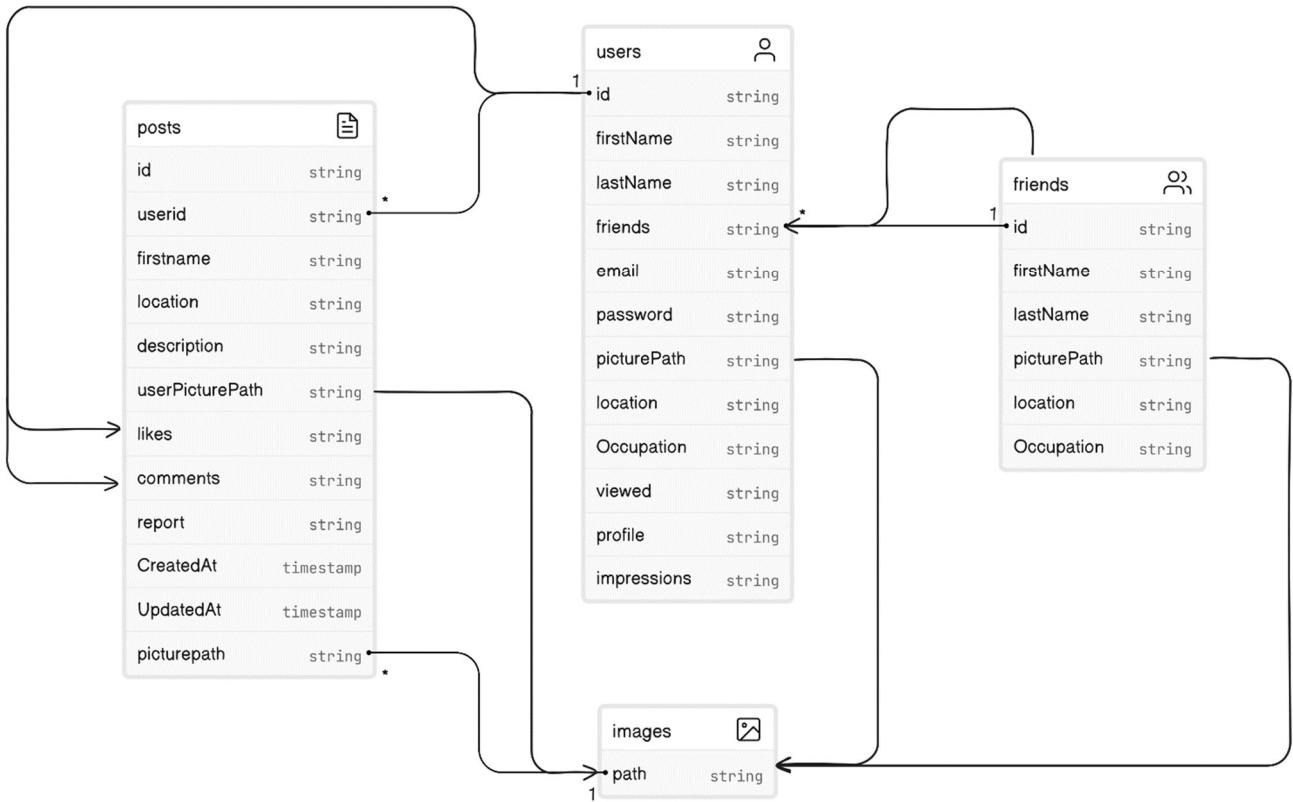
- **Usability:** The user interface should be intuitive and easy to navigate, promoting a positive user experience.

- **Reliability:** The system should accurately process reservations, avoiding errors and inconsistencies.
- **Maintainability:** Develop clean and well-documented code to facilitate easy maintenance and future updates
- **Performance:** The system should perform efficiently and respond quickly to user requests, allowing for fast and seamless assignment submissions and reviews.
- **Scalability:** The system should be scalable, allowing for an increasing number of users and assignments as the demand grows.
- **Security:** The system should have strong security features, protecting sensitive information and ensuring the privacy and confidentiality of user data.

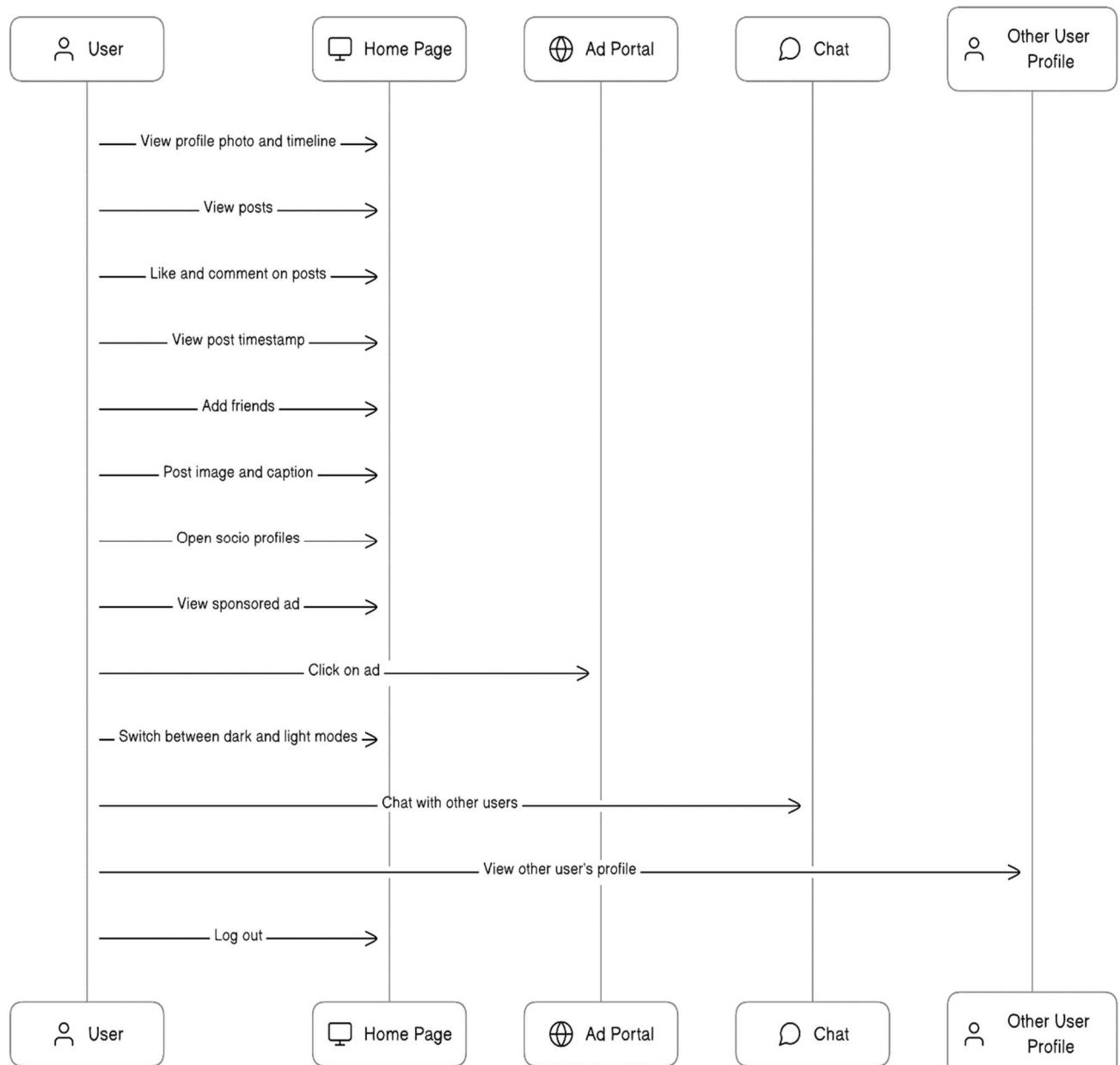
- ANALYSIS MODELS :
- i. E-R DIAGRAM :



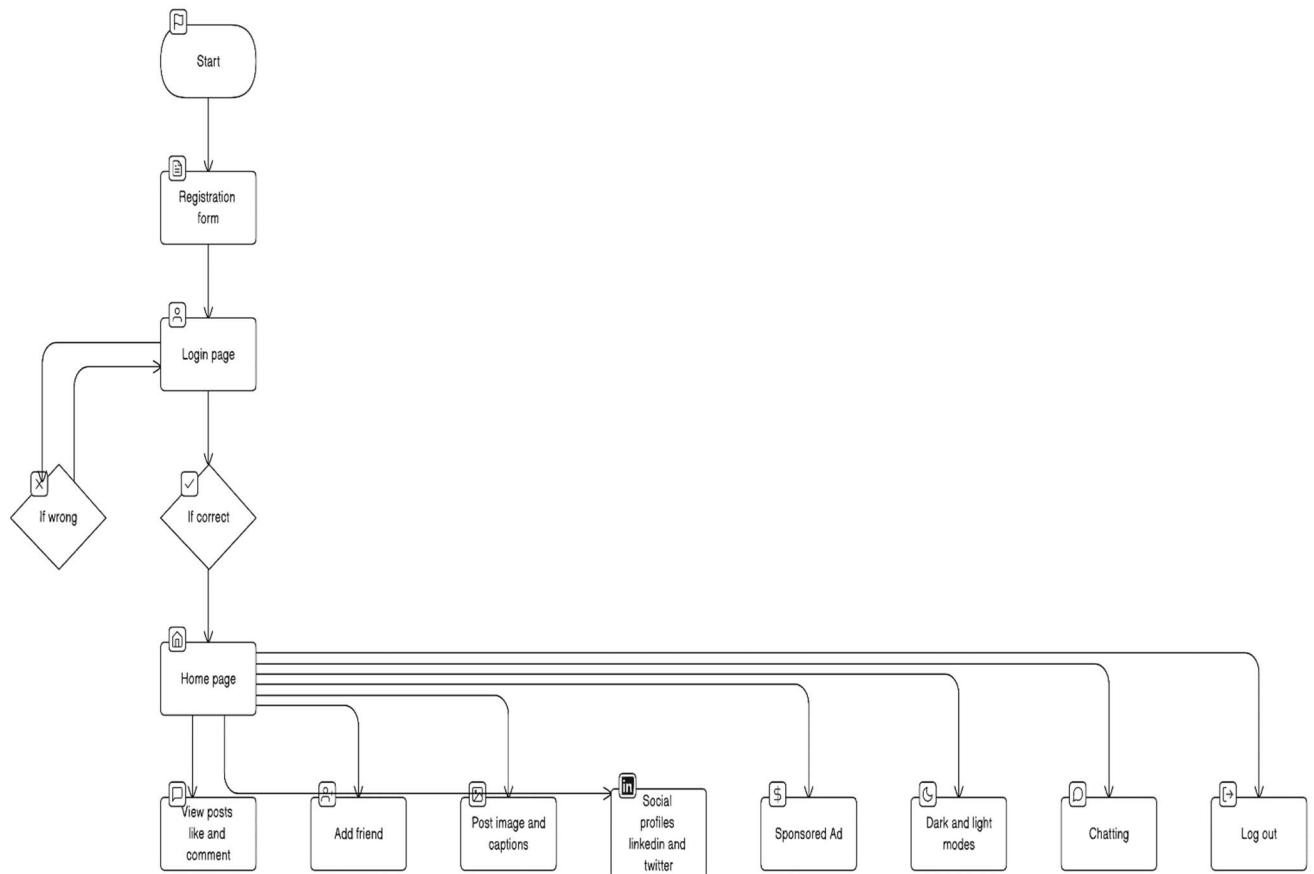
## ii. CLASS DIAGRAM:



### iii. SEQUENCE DIAGRAM:



#### iv. Data Flow Diagram :



## FUTURE SCOPE:

As WeConnect continues to evolve, the platform will focus on enhancing user experience and engagement through a streamlined approach that prioritizes key features. The following future scope outlines the advancements that will be made in the app:

### 1. Enhanced Friend Search:

WeConnect recognizes the importance of connecting users with their friends seamlessly. In the future, the app will introduce an advanced friend search feature that utilizes AI-driven algorithms to provide accurate and efficient results. Users will be able to find and connect with their friends easily, promoting a stronger sense of community within the platform.

### 2. Persistent Chat and Forum Retention:

User conversations and interactions are valuable aspects of any social media app. WeConnect will implement a robust system to ensure the retention of chat messages and forum discussions in a secure database. This feature will allow users to revisit their conversations, maintain context, and retrieve important information from past interactions, thereby facilitating meaningful connections.

### 3. Dynamic Profile Picture Update:

WeConnect aims to reflect users' evolving identities by introducing the ability to update profile pictures dynamically. Users will be able to express themselves better by uploading short videos or animated images as their profile pictures, adding a more engaging and personalized touch to their profiles.

### 4. Editable Post Updates:

The future version of WeConnect will empower users with greater control over their content. Users will be able to edit and update posts that they have previously created. This feature acknowledges the need for timely corrections or additions to posts, resulting in more accurate and relevant discussions.

These specific feature enhancements align with WeConnect's commitment to fostering meaningful connections, enabling self-expression, and providing a seamless user experience. By focusing on these core features, WeConnect is poised to remain a relevant and engaging social media app that caters to users' evolving needs and preferences.

## REFERENCES:

- Material UI: <https://mui.com/material-ui/getting-started/installation/>
- Redux Toolkit: <https://redux-toolkit.js.org/introduction/getting-started>
- React Router: <https://reactrouter.com/en/v6.3.0/get-started>
- Redux Persist: <https://github.com/rt2zz/redux-persist>
- React Dropzone: <https://react-dropzone.js.org/>
- Node: <https://nodejs.org/en/download/>
- Nodemon: <https://github.com/remy/nodemon>
- NPX: <https://www.npmjs.com/package/npx>
- VsCode: <https://code.visualstudio.com/download>
- MongoDB: <https://www.mongodb.com/>
- Mongoose: <https://github.com/Automattic/mongoose>
- JsonWebToken: <https://github.com/auth0/node-jsonwebtoken>
- Multer: <https://github.com/expressjs/multer>
- GridFS-Storage: <https://github.com/devconcept/multer-gridfs-storage>
- Google Fonts: <https://fonts.google.com/>
- Formik: <https://formik.org/docs/overview>
- Yup: <https://github.com/jquense/yup>
- Free Photos : <https://unsplash.com/>