DEPARTMENT OF COMPUTER ENGINEERING

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VISHWAKARMA INSTITUTE OF INFORMATION TECHNOLOGY

SURVEY NO. 3/4, KONDHWA (BUDRUK), PUNE – 411048, MAHARASHTRA (INDIA).

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VISHWAKARMA INSTITUTE OF INFORMATION TECHNOLOGY, PUNE
2022 -2023

TY PROJECT-II REPORT ON

"Flat Mates Finder"

TY.BACHELOR OF TECHNOLOGY (COMPUTER ENGINEERING)

SUBMITTED BY

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CERTIFICATE

This is to certify that the project report entitles

“ Flatemates Finder”

Submitted by

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Date :

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Ashved Andhale
Pratik Rathod
Sanika Kulkarni
NAME OF THE STUDENTS

ACKNOWLEDGEMENT

I would like to express my gratitude to all the individuals who have contributed to the successful completion of this project. Firstly, I would like to thank my team members who have worked tirelessly to bring this project to fruition. Their hard work, dedication, and collaboration have been instrumental in achieving our goals.

I would also like to express my sincere thanks to our project guide/mentor, who has provided us with invaluable guidance, feedback, and support throughout the project. Their expertise, knowledge, and encouragement have been instrumental in shaping our ideas and direction.

Furthermore, I would like to thank our institution/university for providing us with the necessary resources, infrastructure, and support to carry out this project.

Last but not least, I would like to express my gratitude to all the individuals who have participated in our project and provided us with their valuable feedback, suggestions, and insights. Without their contributions, this project would not have been possible.

Thank you all for your support and guidance in making this project a success.

ABSTRACT

Accommodation in today's world has been soaring at high rates. In addition, to get a shelter that matches one's preference, budget, interest, and proximity is a challenge. This problem becomes even bigger if the person looking for accommodation is a student.

For students, factors like affordability, proximity to the university, similar company etc. matters the most. There are number of websites and mobile apps that provide facilities for finding suitable roommate and vacant apartment, but as of now, there is no such mobile app that helps to find roommate or apartment for a specific university.

This application is aimed at trying to solve the major accommodation problem for university students, bachelors.

This application consists of a variety of features like searching based on university name and address, potential match based on user's preferences and shortlisting.

This Application is developed using React for front end and Mongo DB and Node JS for backend and we have used various API's.

Keywords: API, Front End, Roommate, Potential Match

TABLE OF CONTENTS (14, bold, uppercase)

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01.Introduction

1.1 Overview :

The Flatmates Finder project is a web application developed using the React framework. The primary objective of this project is to help users find available rooms that meet their specific requirements.

The application allows users to add available rooms to the system and provides an intuitive interface for users to search and filter available rooms based on their preferences. Users can search for rooms by specifying their preferred location, room type, rental range, and other relevant details. The application also provides a user-friendly interface for room owners to manage their listings and keep them up-to-date.

The Flatmates Finder project is built using modern web development technologies such as React, JavaScript, HTML, and CSS. These technologies are widely used and provide a robust and scalable platform for building web applications. The project also utilizes database management systems, such as SQL, to store and manage the data.

Overall, the Flatmates Finder project is a valuable resource for individuals who are searching for a suitable living arrangement. It provides an efficient and user-friendly platform for finding available rooms and connecting with potential flatmates.

1.2 Motivation:

The motivation behind the Flatmates Finder project was to develop a web application that addresses the challenges faced by individuals searching for suitable living arrangements. In many cities and towns, finding an affordable and comfortable place to live can be a daunting task, especially for those who are new to the area or do not have an extensive network of contacts.

The goal of the project was to create a user-friendly and efficient platform that simplifies the process of finding available rooms and connecting with potential flatmates. By providing an intuitive interface for users to search and filter available rooms based on their preferences, the Flatmates Finder application aims to make the search process more efficient and less stressful.

Furthermore, the project was motivated by the desire to provide a valuable resource for individuals who are looking for affordable living arrangements. By enabling users to easily add available rooms and keep their listings up-to-date, the project aims to facilitate greater transparency and accessibility in the housing market.

Our goal is to promote safe and secure housing solutions and create a supportive community of renters. This report will provide an overview of the project, including its features, design, and functionality, and discuss the benefits of using this platform for individuals seeking affordable and secure housing.

Overall, the motivation behind the Flatmates Finder project was to develop a web application that addresses an important social and economic issue and provides a valuable service to the community.

1.3 A) Problem Definition:

Finding a suitable living arrangement, such as a flat or a room, can be a daunting task for individuals, especially for those who are new to a particular city or region. It can be challenging to navigate through the various rental options and determine which one is the best fit based on one's preferences, budget, and other factors. Additionally, for people who are searching for a flatmate, it can be difficult to find someone who shares similar interests, lifestyles, and habits.

B) Objective :

The primary objective of the Flatmates Finder project is to provide a user-friendly web application that simplifies the process of finding suitable living arrangements and flatmates. The project aims to achieve the following objectives:

- To develop a robust and scalable web application that allows users to search and filter available rooms based on their preferences.
- To provide an intuitive interface for users to manage their listings and keep them up-to-date.

- To simplify the process of finding suitable flatmates by allowing users to connect with potential flatmates based on their preferences, interests, and lifestyles.

1.4) A)Project Scope :

The Flatmates Finder project scope is to develop a web application using React that enables users to find and rent available rooms. The project allows users to add and manage available rooms, search and filter available rooms based on specific requirements, and connect with potential flatmates. The application aims to provide a user-friendly and efficient interface for users to browse and select available rooms.

B) Limitations:

The Flatmates Finder project has a few limitations that need to be acknowledged. Firstly, the project is limited to the features and functionalities that have been implemented. Some potential features such as messaging functionality, payment integration, and user reviews are not included in the current version of the project.

Additionally, the accuracy and validity of the information provided by the users, including the availability and description of the rooms, cannot be fully guaranteed. The project also relies on the availability of relevant data, such as room availability and user information, which may impact the accuracy of the results displayed.

Moreover, the project may have limited applicability in certain areas or regions, depending on the availability of the relevant data and user base. Finally, the project may have performance limitations, such as slower response times or data processing times, depending on the number of users and available data.

02.Literature Survey

The Flatmates Finder project is a web application developed using the React framework to help users find available rooms that meet their specific requirements. In recent years, there has been a growing demand for online room searching platforms due to the increasing number of people searching for affordable and convenient housing options.

According to a study by the National Multifamily Housing Council, the number of renters in the US has been steadily increasing over the years, and it is estimated that by 2030, nearly 40% of all households will be renters. This trend has led to an increase in demand for online housing searching platforms that cater to renters' needs.

React, a JavaScript library developed by Facebook, has become one of the most popular frameworks for building modern web applications. Its popularity can be attributed to its simplicity, flexibility, and scalability, making it an ideal choice for developing complex applications such as the Flatmates Finder project.

Online room searching platforms have become an essential resource for individuals searching for a suitable living arrangement. Several platforms such as Roomster, EasyRoommate, and Roomi have gained widespread popularity in recent years. These platforms provide an efficient and user-friendly interface for finding available rooms and connecting with potential flatmates.

The use of modern web development technologies such as React, JavaScript, HTML, and CSS provides a robust and scalable platform for building web applications such as Flatmates Finder. Additionally, the use of database management systems such as SQL provides efficient data storage and retrieval, ensuring that the application can handle a large volume of data efficiently.

Overall, the Flatmates Finder project is a valuable resource that addresses the growing demand for online room searching platforms. Its use of modern web development technologies and user-friendly interface makes it an efficient and effective platform for individuals searching for suitable housing options.

03.Project Requirements Specification

3.1. Project Functional Requirements

- User Interface: System GUI will be the user interface.
- Hardware Interface: Keyboard, screen and mouse.
- Software Interface: Browser, Internet Connection
- Communication Interface: GUI will be our communication interface.

3.2. Software Requirements

- Operating System: windows 10/ 11
- Framework: React JS , Node JS
- Database: Mongo DB
- Development tool: VS Code

3.3.Hardware Requirements

- Processor: Intel i3 minimum
- Hard Disk Space: 500GB
- RAM: 4.00 GB

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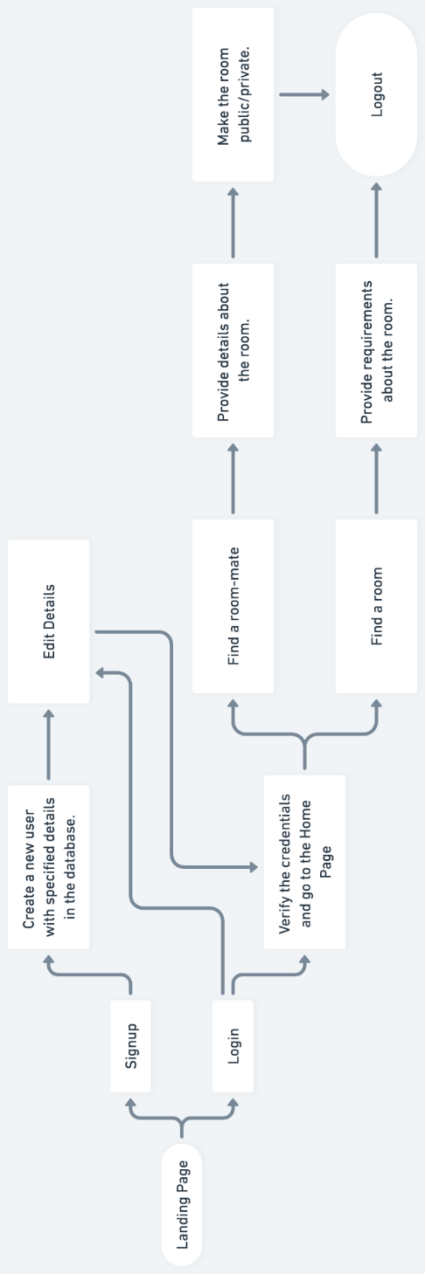
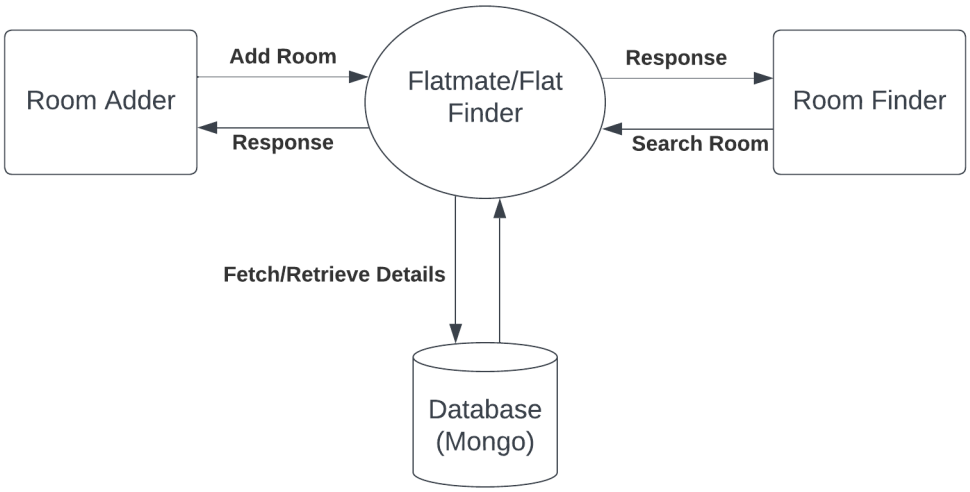
04.System Design

4.1. System Architecture

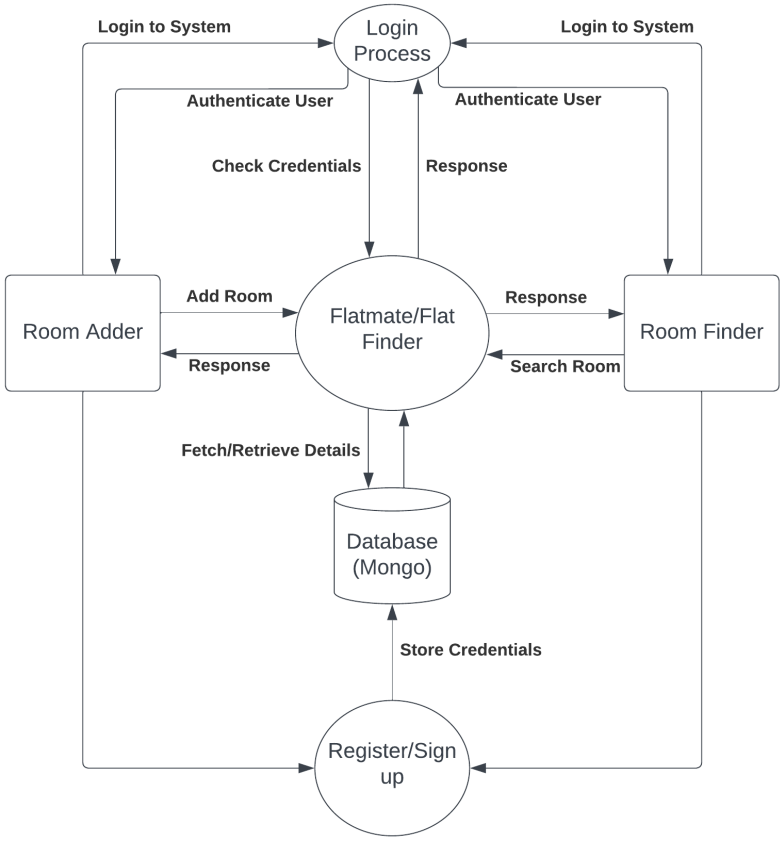


4.2. Data Flow Diagram

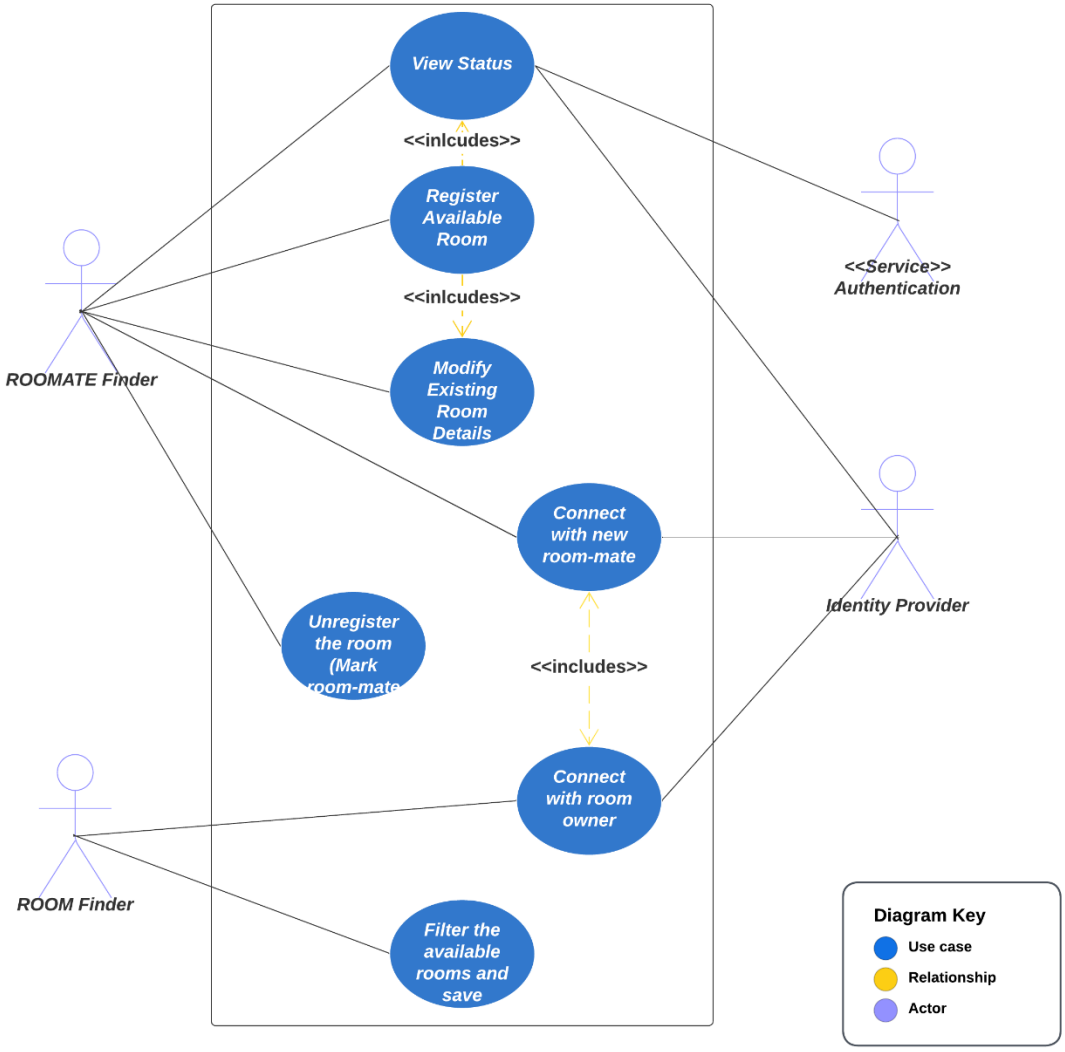
4.2.1 Level 0:



4.2.2 Level 1:



4.3. UML Diagram



05.Project Plan

Project Plan for Flatmates Finder

- Project Goal: To develop a web application using React, Node.js, CSS, and MongoDB that helps users find available rooms and connect with potential flatmates.

Team Members:

- Member 1: Responsible for front-end development using React and CSS
- Member 2: Responsible for back-end development using Node.js and MongoDB
- Member 3: Responsible for database design and management
- Member 4: Responsible for project management and coordination

Timeline:

- Week 1: Define project requirements and scope, finalize project plan, set up development environment
- Week 2-3: Front-end development using React and CSS
- Week 4-5: Back-end development using Node.js and MongoDB, database design and management
- Week 6-7: Integration of front-end and back-end, testing, and debugging
- Week 8: Finalize project, prepare project report, and presentation
- Deliverables:

A fully functional web application that allows users to add available rooms and search for rooms that meet their specific requirements.
Complete documentation of the project, including system design, requirements, and user manual.

A project report that summarizes the project and the team's accomplishments.
A presentation that highlights the key features and benefits of the web application.
Team Roles and Responsibilities:

- Member 1: Responsible for front-end development, including UI/UX design and implementation.
- Member 2: Responsible for back-end development, including server-side programming and API integration.
- Member 3: Responsible for database design and management, including data modeling and data management.

- Member 4: Responsible for project management and coordination, including scheduling, progress tracking, and communication with the team and the project guide.

Resource Requirements:

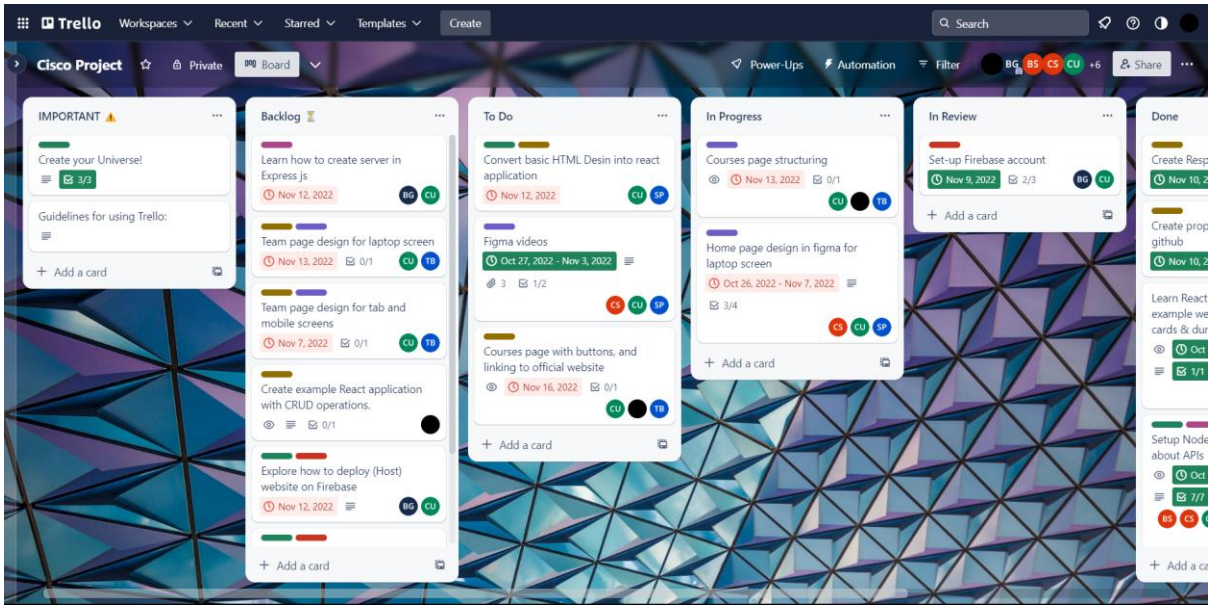
- Development environment: React, Node.js, CSS, MongoDB
- Version control system: Git
- Communication and collaboration tools: Slack, Trello, Zoom
- Risks and Mitigation Strategies:

Technical challenges and limitations: To mitigate technical challenges and limitations, the team will conduct extensive research and testing of the chosen technologies to ensure their compatibility and reliability.

Scope creep: To mitigate scope creep, the team will define clear project requirements and scope and monitor progress regularly to ensure that the project stays on track.

Communication issues: To mitigate communication issues, the team will use collaboration tools such as Slack and Trello and hold regular meetings to keep everyone informed and engaged.

Overall, the project plan outlines a clear roadmap for the development of the Flatmates Finder project, with well-defined roles and responsibilities, clear timelines, and risk mitigation strategies in place to ensure its success.



06.Project Implementation

5.1. Frontend File Strucutre:

```
src
├── assets
│   ├── css
│   │   ├── index.css
│   │   ├── main.css
│   │   ├── responsive.css
│   │   └── sidebar.css
│   ├── fonts
│   │   └── Poppins-Regular.ttf
│   └── images
│       ├── banner.jpg
│       ├── logo.png
│       ├── no-image.jpg
│       └── user.png
├── components
│   ├── About.js
│   ├── AddRoom.js
│   ├── Alert.js
│   ├── Contact.js
│   ├── Footer.js
│   ├── Header.js
│   ├── Home.js
│   ├── LoginForm.js
│   ├── NotFound.js
│   ├── Room.js
│   ├── RoomDetail.js
│   ├── RoomForm.js
│   ├── RoomList.js
│   ├── RoomSearch.js
│   ├── SignupForm.js
│   ├── Sidebar.js
│   ├── UserRooms.js
│   └── index.js
├── config
│   ├── index.js
│   └── routes.js
├── contexts
│   ├── AuthContext.js
│   ├── RoomContext.js
│   └── index.js
├── services
│   ├── auth.js
│   ├── room.js
│   └── storage.js
```

```
├── utils
│   └── index.js
├── App.js
├── index.js
├── reportWebVitals.js
└── setupTests.js
```

Github Repo Link : https://github.com/akashyeole/flatmates-frontend

5.2 Backend File Structure :

```
config
├── db.js
└── index.js
controllers
├── auth.js
├── index.js
└── room.js
middleware
├── auth.js
├── errorHandler.js
└── index.js
models
├── index.js
├── room.js
└── user.js
routes
├── auth.js
├── index.js
└── room.js
app.js
package.json
README.md
server.js
```

Github Repo Link : https://github.com/akashyeole/flatmates-backend

07.Result

7.1. Outcomes

- Objectives: The project objectives are clearly defined and stated. The primary objective is to help users find available rooms that meet their specific requirements.

- Technology: The project has utilized modern web development technologies such as React, JavaScript, HTML, and CSS. This is a significant outcome as these technologies are widely used and provide a robust and scalable platform for building web applications.

- User-Friendly Interface: The project has provided a user-friendly interface for users to search and filter available rooms based on their preferences. This is a positive outcome as it enhances user experience and encourages user engagement.

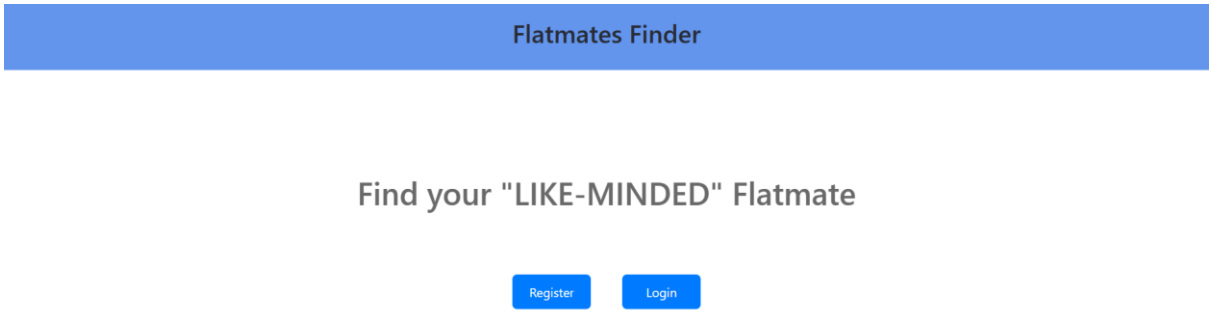
- Room Management System: The project provides a room management system that enables room owners to manage their listings and keep them up-to-date. This is an essential outcome as it allows room owners to have control over their listings and ensures that they remain accurate and relevant.

- Efficient Platform: The project provides an efficient platform for finding available rooms and connecting with potential flatmates. This is a significant outcome as it provides a solution for individuals who are searching for a suitable living arrangement.

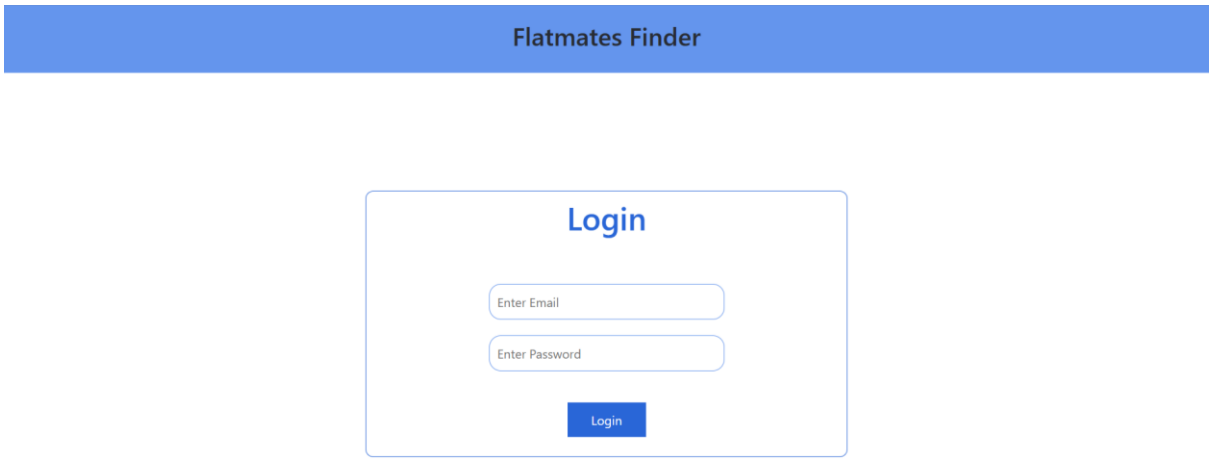
Overall, the Flatmates Finder project has achieved its objectives and provides a valuable resource for individuals who are searching for a suitable living arrangement. The project has utilized modern web development technologies, provided a user-friendly interface, and developed a room management system that enhances the efficiency of the platform.

7.2. Screenshots

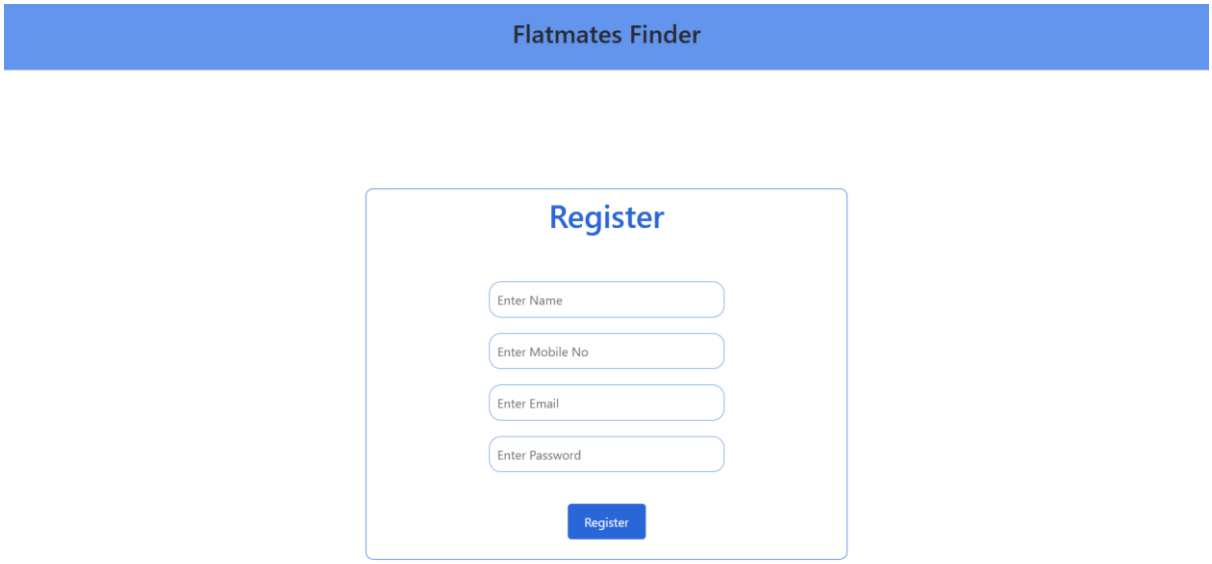
Landing Page:



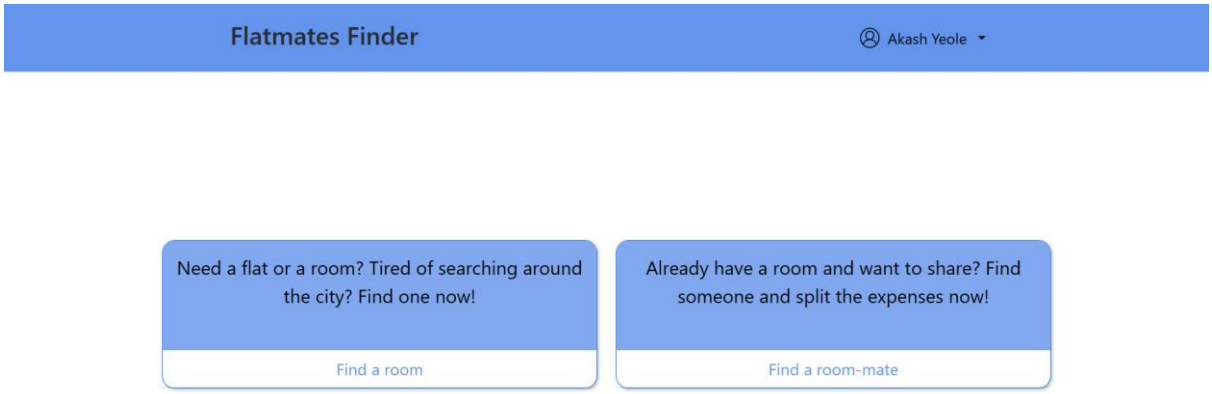
Login Page:



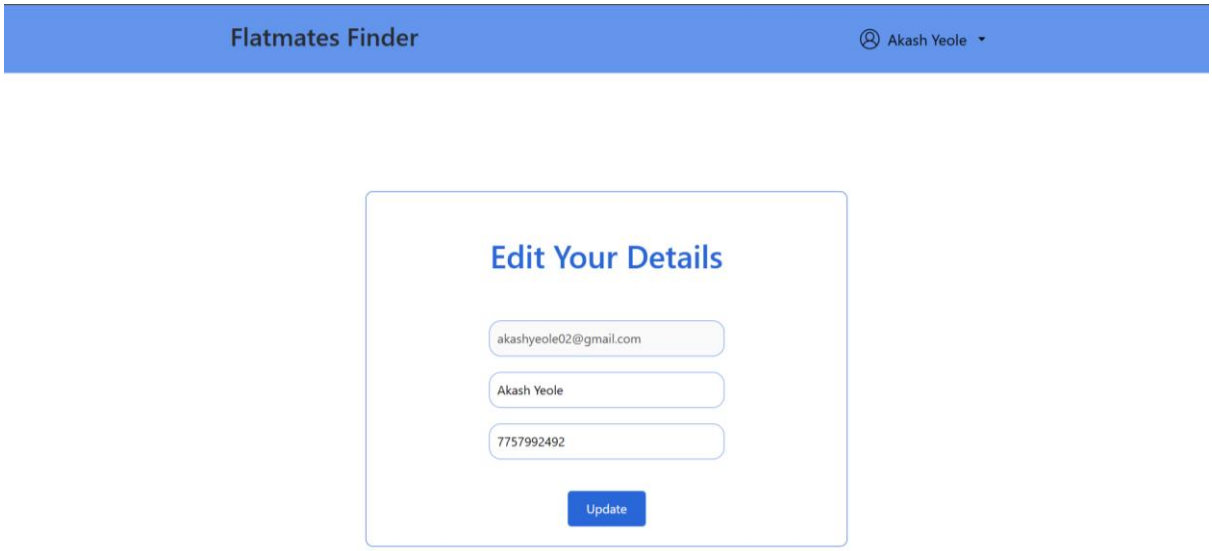
Signup Page:



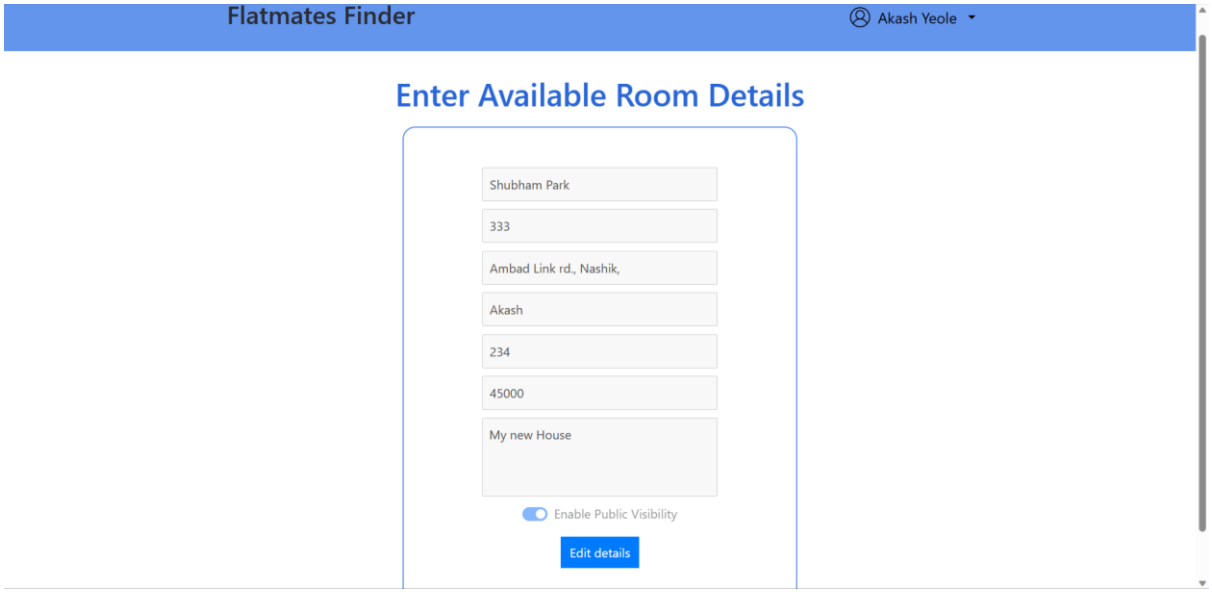
Home Page:



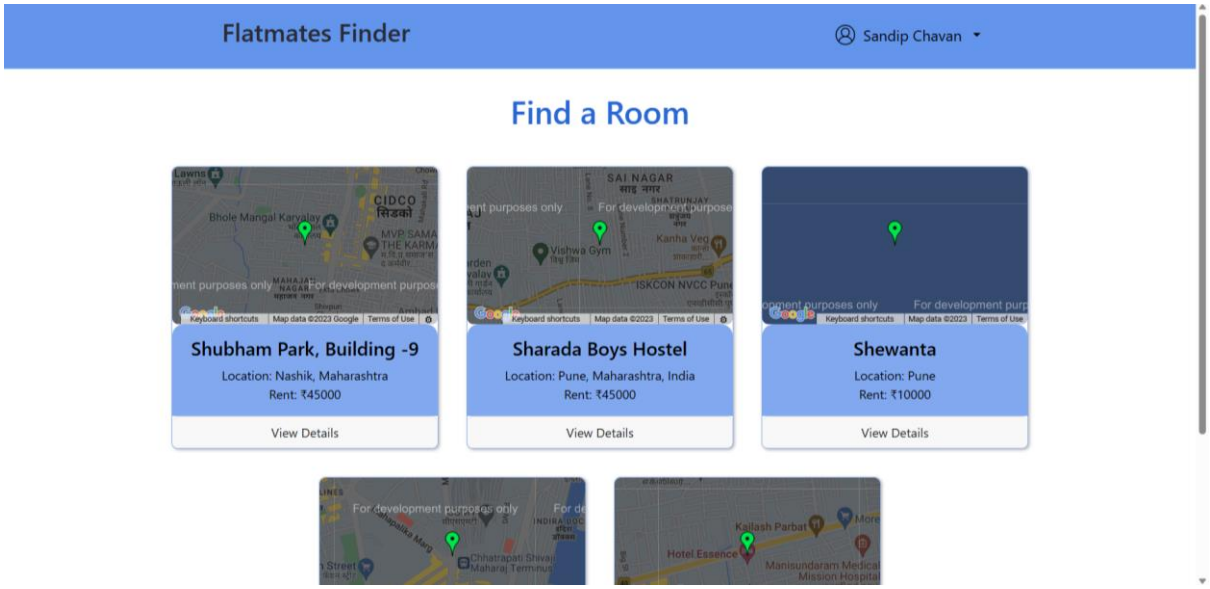
Editprofile Page:



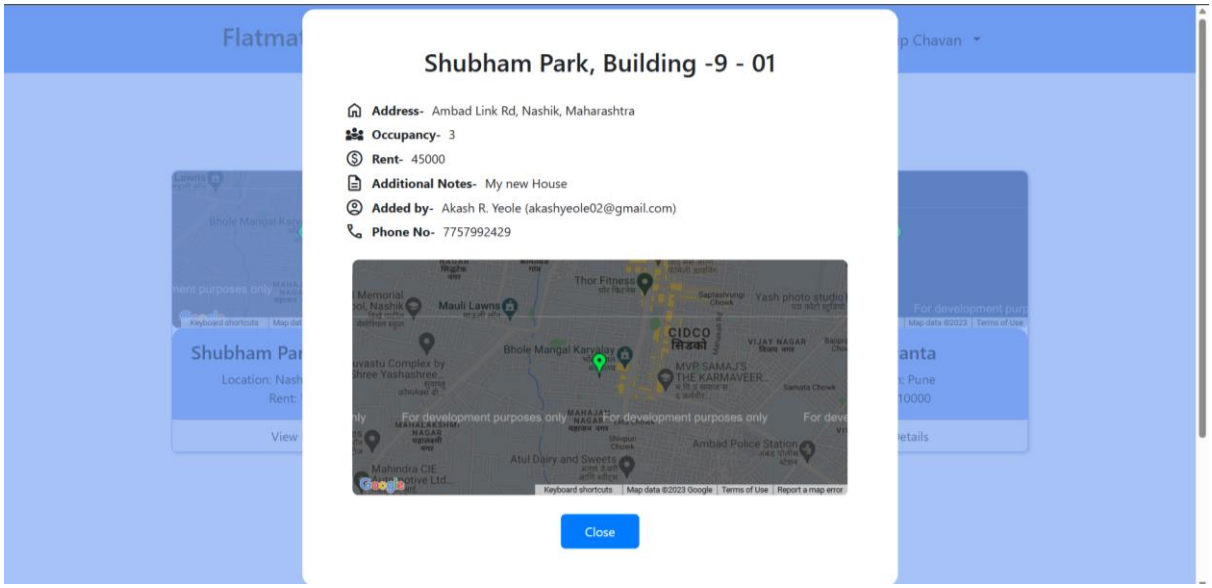
Room registration page(Find a room-mate):



Find a room page:



Viewing details of a room:



09. Conclusion

The Flatmates Finder project is a modern web application that has been developed using the React framework. The application provides an intuitive interface for users to search and filter available rooms based on their preferences. It also allows room owners to manage their listings and keep them up-to-date.

The use of modern web development technologies such as React, JavaScript, HTML, and CSS has enabled the creation of a robust and scalable platform for building web applications. The database management system, such as SQL, provides efficient storage and management of the data.

The Flatmates Finder project is a valuable resource for individuals searching for a suitable living arrangement. It provides an efficient and user-friendly platform for finding available rooms and connecting with potential flatmates. Overall, the project has been a success, and it has fulfilled its objective of helping users find the right living space.

9.1. Applications :

- Real estate industry: The Flatmates Finder project can be used by real estate agencies or property managers to help renters find available rooms in their properties. This can help agencies increase their occupancy rates and provide a better experience for their clients.

- Student housing: The Flatmates Finder project can be used by universities or colleges to help students find suitable accommodation. This can help institutions improve their student retention rates and provide a better experience for their students.

- Shared housing platforms: The Flatmates Finder project can be used as a foundation for shared housing platforms that connect people who are looking for roommates or shared accommodation. This can be a useful service for people who are new to an area or who are looking for affordable housing options.

- Peer-to-peer rentals: The Flatmates Finder project can be adapted for use in peer-to-peer rental platforms, where individuals can rent out spare rooms in their homes to travelers or other users. This can be a useful way for people to earn extra income and for travelers to find affordable accommodation options.

- Co-living spaces: The Flatmates Finder project can be used by co-living companies to help tenants find compatible roommates and manage their rental arrangements. This can be a useful service for people who are interested in communal living arrangements and shared amenities.