

Digital Pilgrimage Hub

Submitted in partial fulfillment of the requirements of the degree of

BACHELOR OF COMPUTER ENGINEERING

by

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Guide:

Prof. K. S. Deherkar



Department of Computer Engineering

A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE

(2022-2023)



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CERTIFICATE

This is to certify that the Mini Project 2B entitled “**Digital Pilgrimage Hub**” is a bonafide work of “**Savinay Pandey - (21102125), Pranav Patil – (21102180), Gautam Pandey – (21102117), Pratik Patil – (21102099)**” submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **Bachelor of Engineering in Computer Engineering**.

Guide:
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A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE

Project Report Approval for Mini Project-2B

This project report entitled “**Digital Pilgrimage Hub**” by **Savinay, Pranav, Gautam, Pratik** is approved for the partial fulfillment of the degree of **Bachelor of Engineering in Computer Engineering, 2023-24.**

Examiner Name

Signature

1. _____

2. _____

Date:

Place:

Declaration

We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date:

Abstract

The "Digital Pilgrimage Hub" is a revolutionary online platform that offers users an immersive 360-degree experience of pilgrimage places around the world. Through stunning panoramic views, users can virtually explore these sacred sites, gaining a deeper understanding and appreciation of their cultural and historical significance.

Beyond just exploration, our platform allows users to take action. They can schedule visits to these pilgrimage places, facilitating their journey from virtual to physical experience. Additionally, users can actively contribute to our growing community by adding new pilgrimage places to our interactive map, enriching the collective knowledge of spiritual destinations worldwide.

To ensure a seamless experience, we've integrated a chatbot feature that provides users with instant support and guidance. Whether they need help navigating the site, have questions about specific pilgrimage places, or require assistance with their travel plans, our chatbot is there to assist 24/7, making their digital pilgrimage experience truly enriching and hassle-free.

Keywords: 360-Degree Experience , Schedule Visits , Interactive Map , Chatbot Support , Enriching Experience

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Chapter 1

Introduction

The "Digital Pilgrimage Hub" revolutionizes spiritual exploration, providing an immersive digital platform where users can embark on virtual pilgrimages to some of the world's most sacred sites. Through cutting-edge 360-degree technology, users are transported to the heart of these destinations, experiencing the sights and sounds as if they were truly there. From the majestic grandeur of the Grand Mosque in Mecca to the serene beauty of the Ganges River in Varanasi, users can explore these iconic locations from the comfort of their homes, gaining a deeper understanding of their cultural and religious significance. The platform not only offers virtual tours but also provides a wealth of information about each location, including historical background, cultural practices, and spiritual significance. Users can also engage with the community by sharing their own stories and insights, making the "Digital Pilgrimage Hub" a hub of cultural exchange and spiritual exploration. Additionally, the platform offers practical tools for those looking to turn their virtual experience into a physical journey, including trip planning resources, accommodation suggestions, and travel tips. With its combination of cutting-edge technology, cultural richness, and spiritual depth, the "Digital Pilgrimage Hub" is set to redefine the way we experience pilgrimage in the modern world.

Chapter 2

Literature Survey

1. M. S. Kim, "Digital media and the (de)construction of pilgrimage experiences," *Annals of Tourism Research*, vol. 39, no. 4, pp. 2178-2200, 2021.

This study explores how digital media influences the experience of pilgrimage, shedding light on the potential impact of virtual pilgrimages offered by the "Digital Pilgrimage Hub."

2. J. R. Wolf, "The impact of online travel services on travel planning and decisions," *Journal of Travel & Tourism Marketing*, vol. 19, no. 2-3, pp. 83-103, 2020.

Wolf's research examines how online travel services affect travel planning, which is relevant to the feature of scheduling visits to pilgrimage places on your platform.

3. M. F. Buhalis and A. A. Mamalakis, "Tourism distribution channels: Practices, issues and transformations," in *Information and communication technologies in tourism 2002* (pp. 73-84). Springer, Vienna, 2022.

This study discusses tourism distribution channels, providing insights into how the "Digital Pilgrimage Hub" can effectively reach and engage its target audience.

Research Paper	ANALYSIS
1. L. C. Lueg, "A new method for identifying and analyzing chat based interaction in a virtual reference service," <i>Information Research</i> , vol. 9, no. 1, 2023.	This study presents a method for analyzing chat-based interactions, which can be applied to the development and optimization of the chatbot feature on the "Digital Pilgrimage Hub."
2. S. V. Charters and A. Ali-Knight, "Who is planning your next trip? An investigation into the concept of planned tourism," <i>Journal of Vacation Marketing</i> , vol. 12, no. 4, pp. 299-313, 2019.	Charters and Ali-Knight's investigation into planned tourism offers insights into how users of the "Digital Pilgrimage Hub" might plan their virtual and physical pilgrimages, informing the platform's usability and features.
3. A. D. Minović, "Pilgrimage, place and the digital," <i>Religion</i> , vol. 44, no. 2, pp. 267-271, 2018.	This study discusses the intersection of pilgrimage, place, and digital technologies, providing theoretical perspectives that can enhance the immersive experience of the "Digital Pilgrimage Hub."
4. J. M. Swanson and R. A. St. Clair, "Pilgrimage in a digital age: A case study of American college students on the Camino de Santiago," <i>Tourism Management Perspectives</i> , vol. 25, pp. 21-31, 2020.	Swanson and St. Clair's case study offers valuable insights into the behavior and preferences of individuals engaging in pilgrimage in the digital age, which can inform the design and content of the "Digital Pilgrimage Hub."
5. M. F. Buhalis and A. A. Mamalakis, "Tourism distribution channels: Practices, issues and transformations," in <i>Information and communication technologies in tourism 2002</i> (pp. 73-84). Springer, Vienna, 2022.	This study discusses tourism distribution channels, providing insights into how the "Digital Pilgrimage Hub" can effectively reach and engage its target audience

Chapter 3

Problem Statement, Objective & Scope

Problem Statement: -

To develop a "Digital Pilgrimage Hub" where users can virtually explore and experience pilgrimage places worldwide, schedule visits, contribute new places to the map, and receive assistance through a chatbot. The platform aims to bridge the gap between physical and virtual pilgrimage experiences, providing users with a deeper understanding and appreciation of sacred sites. Using advanced 360-degree technology and interactive features, the "Digital Pilgrimage Hub" seeks to enhance cultural and spiritual exploration for users globally.

Objective: -

- Develop an immersive 360-degree virtual experience
- Facilitate pilgrimage planning and scheduling
- Provide interactive map

Scope: -

- Virtual Pilgrimage Experience
- Pilgrimage Planning and Scheduling

Chapter 4

Proposed System Architecture

- **Description about Proposed System:**

The "Digital Pilgrimage Hub" proposes a groundbreaking system that leverages technology to provide an immersive and enriching experience for users exploring pilgrimage places. Through the integration of 360-degree virtual tours, interactive maps, and chatbot assistance, the platform aims to create a seamless transition between the physical and virtual worlds of pilgrimage. Users can embark on virtual journeys to sacred sites, schedule visits, and even contribute new places to the map, fostering a sense of community and shared exploration. This innovative approach not only enhances the accessibility of pilgrimage experiences but also opens up new possibilities for cultural exchange and spiritual discovery.

At the core of the proposed system is a user-centric design that prioritizes ease of use and engagement. The platform's interface is designed to be intuitive and visually appealing, ensuring that users can navigate the various features with ease. The integration of interactive elements, such as clickable hotspots and immersive audiovisual content, further enhances the user experience, making each virtual pilgrimage feel personal and impactful. Additionally, the chatbot feature provides users with instant assistance, answering questions and providing information in real-time, enhancing the overall sense of immersion and connectivity.

Furthermore, the proposed system emphasizes inclusivity and accessibility, catering to users of all backgrounds and abilities. The platform is designed to be compatible with a wide range of devices, including smartphones, tablets, and desktop computers, ensuring that users can access it anytime, anywhere. Additionally, efforts are made to ensure that the content is culturally sensitive and respectful, reflecting the diverse nature of pilgrimage practices around the world. Overall, the "Digital Pilgrimage Hub" represents a pioneering approach to pilgrimage exploration, combining technology, cultural heritage, and community engagement to create a truly transformative experience for users.

- **Architecture / Block Diagram:**

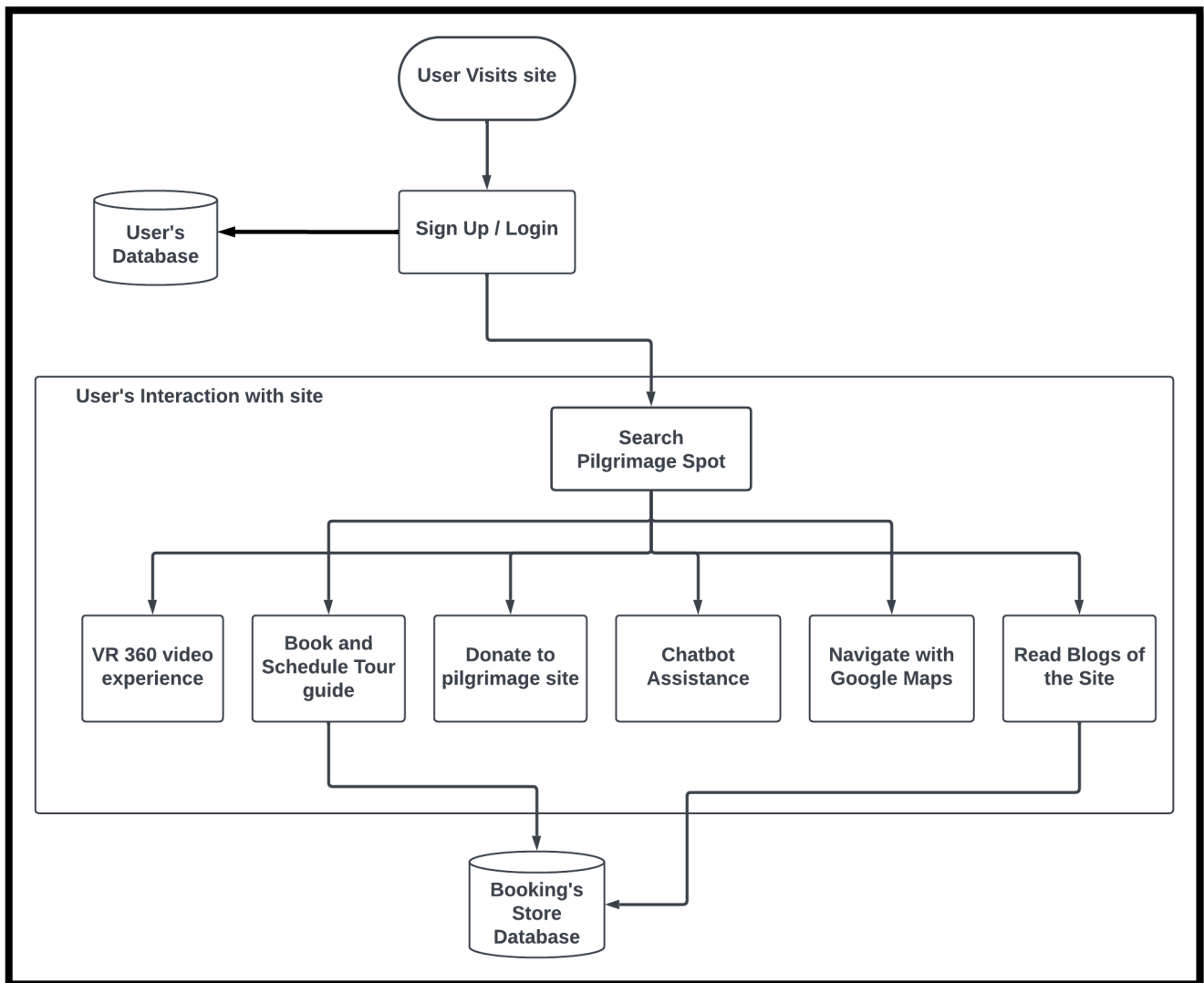


Figure 5.1 Architecture

- **Data Flow Diagram (Level 0, Level 1 & Level 2)**

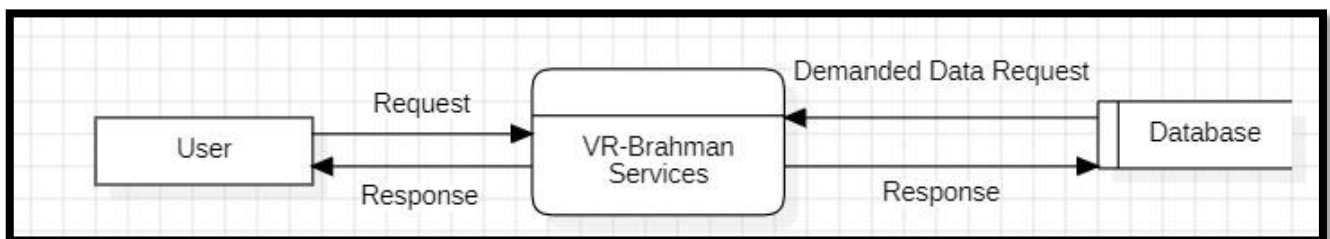


Figure 5.2 DFD(Level 0)

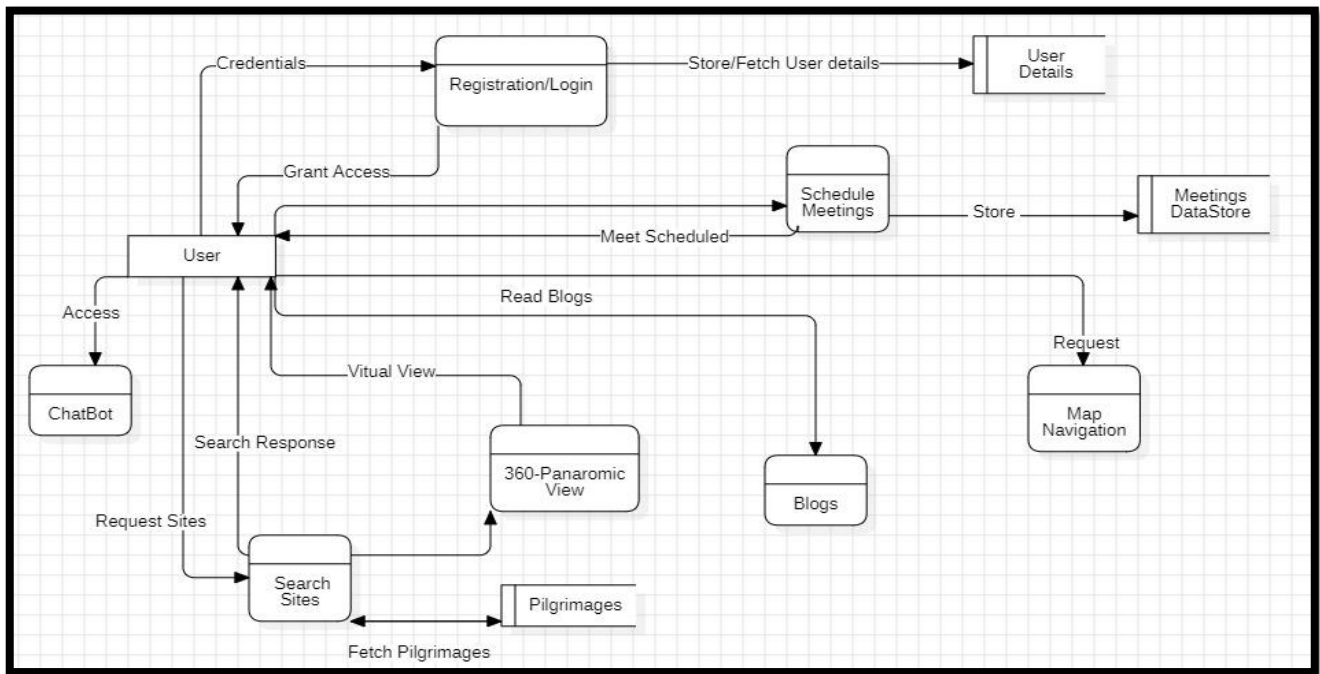


Figure 5.3 DFD(Level 1)

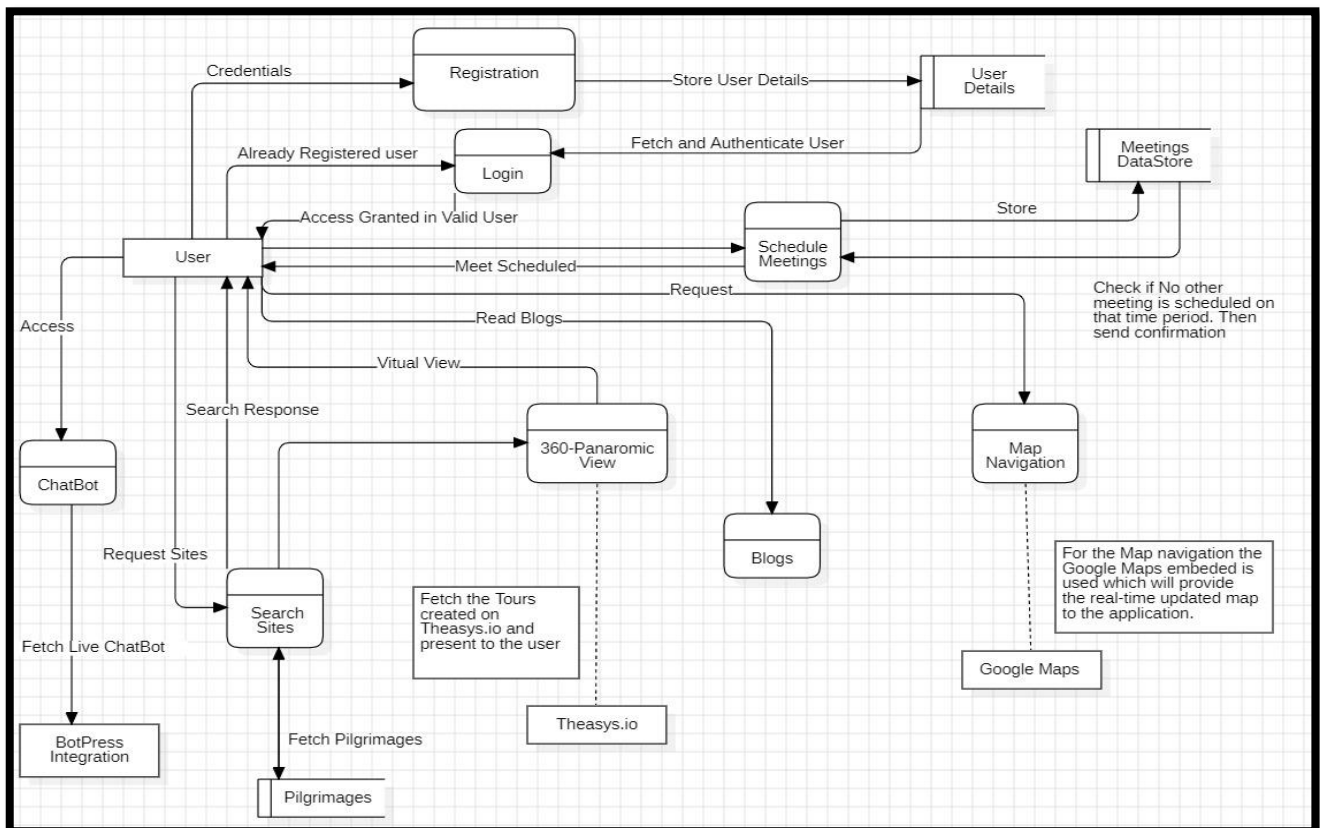


Figure 5.4 DFD(Level 2)

- **Use Case Diagram:**

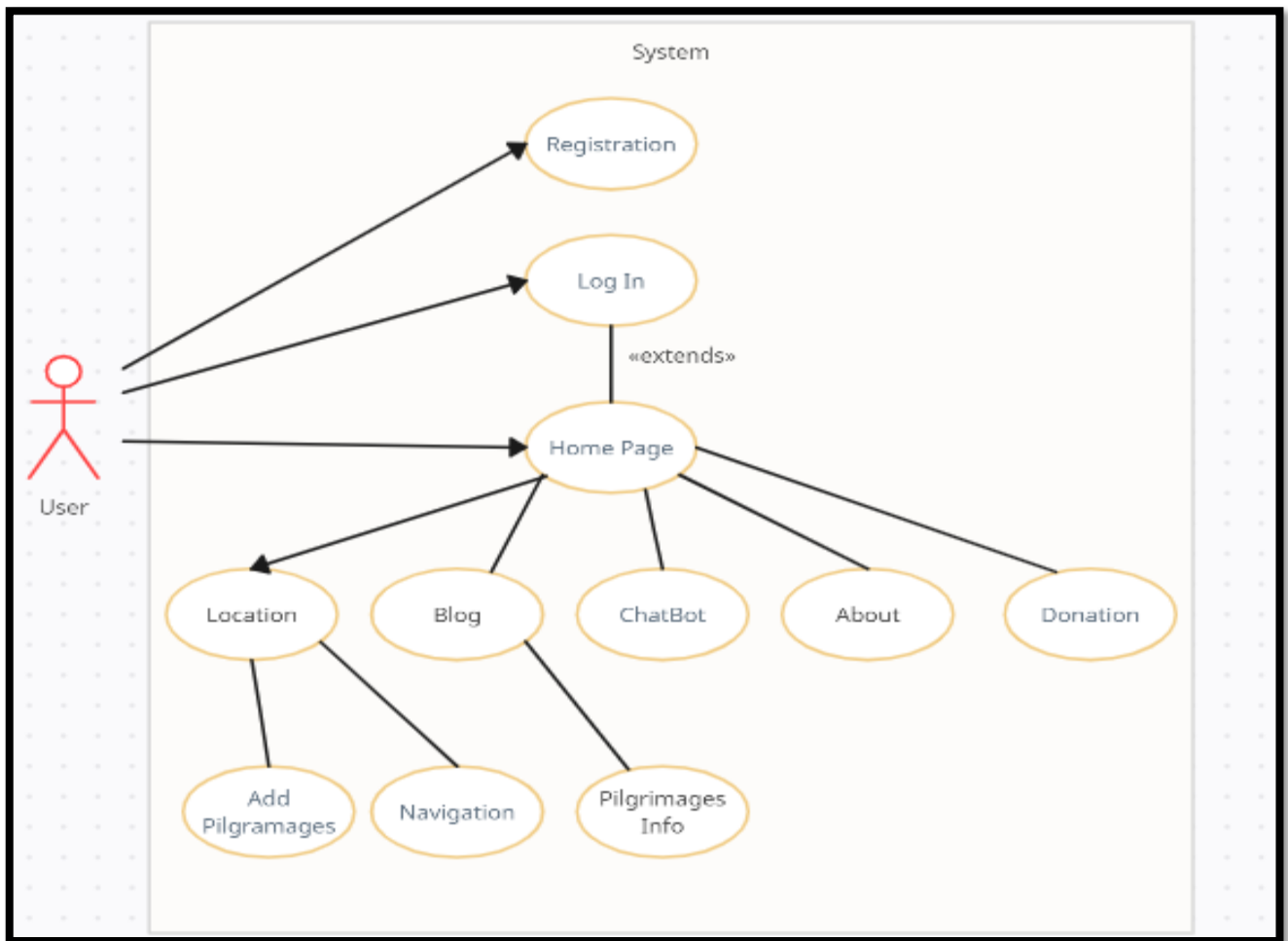


Figure 5.3 : Use Case Diagram

- Sequence Diagram:

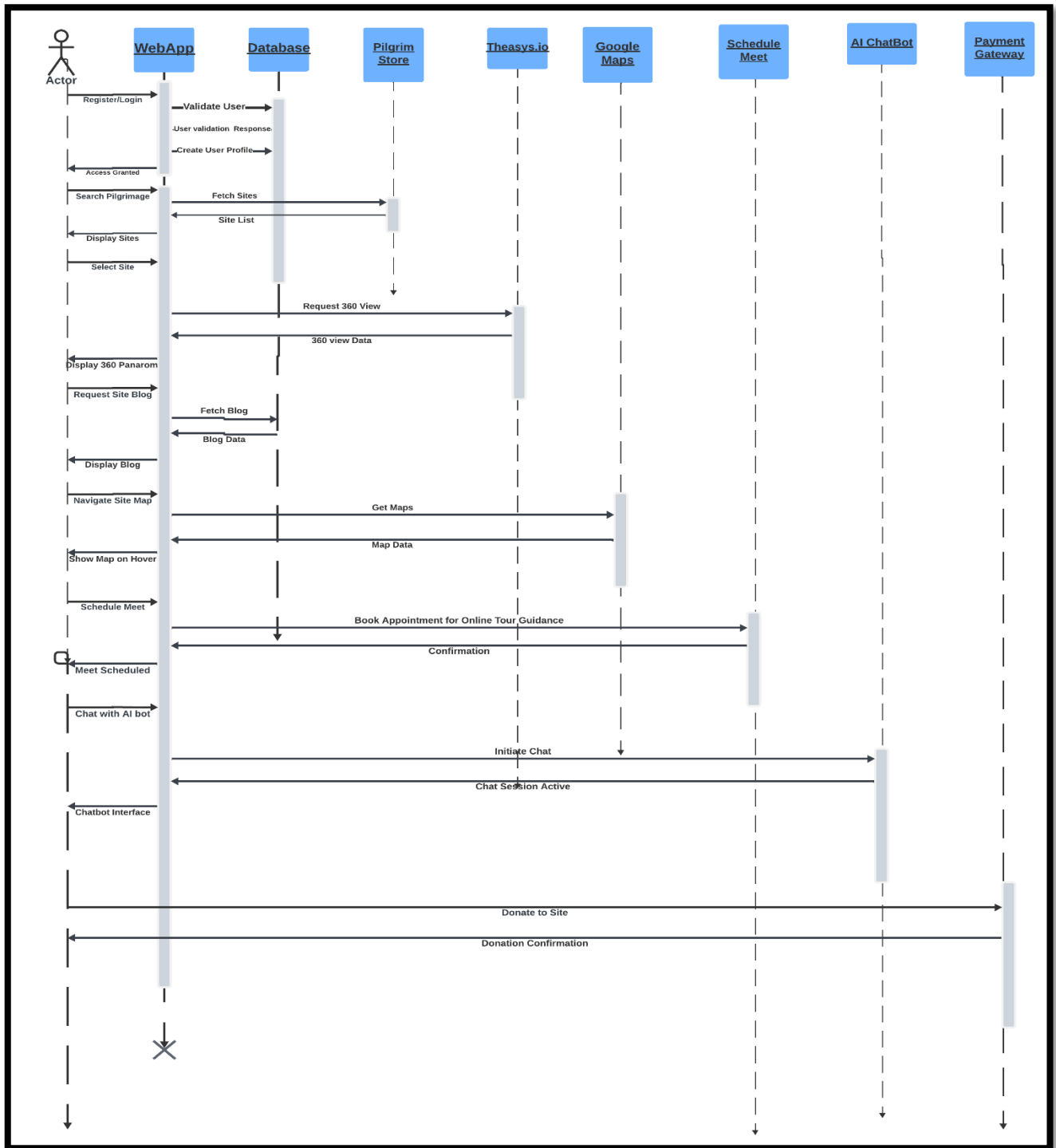


Figure 5.5 : Sequence Diagram

- **Activity Diagram:**

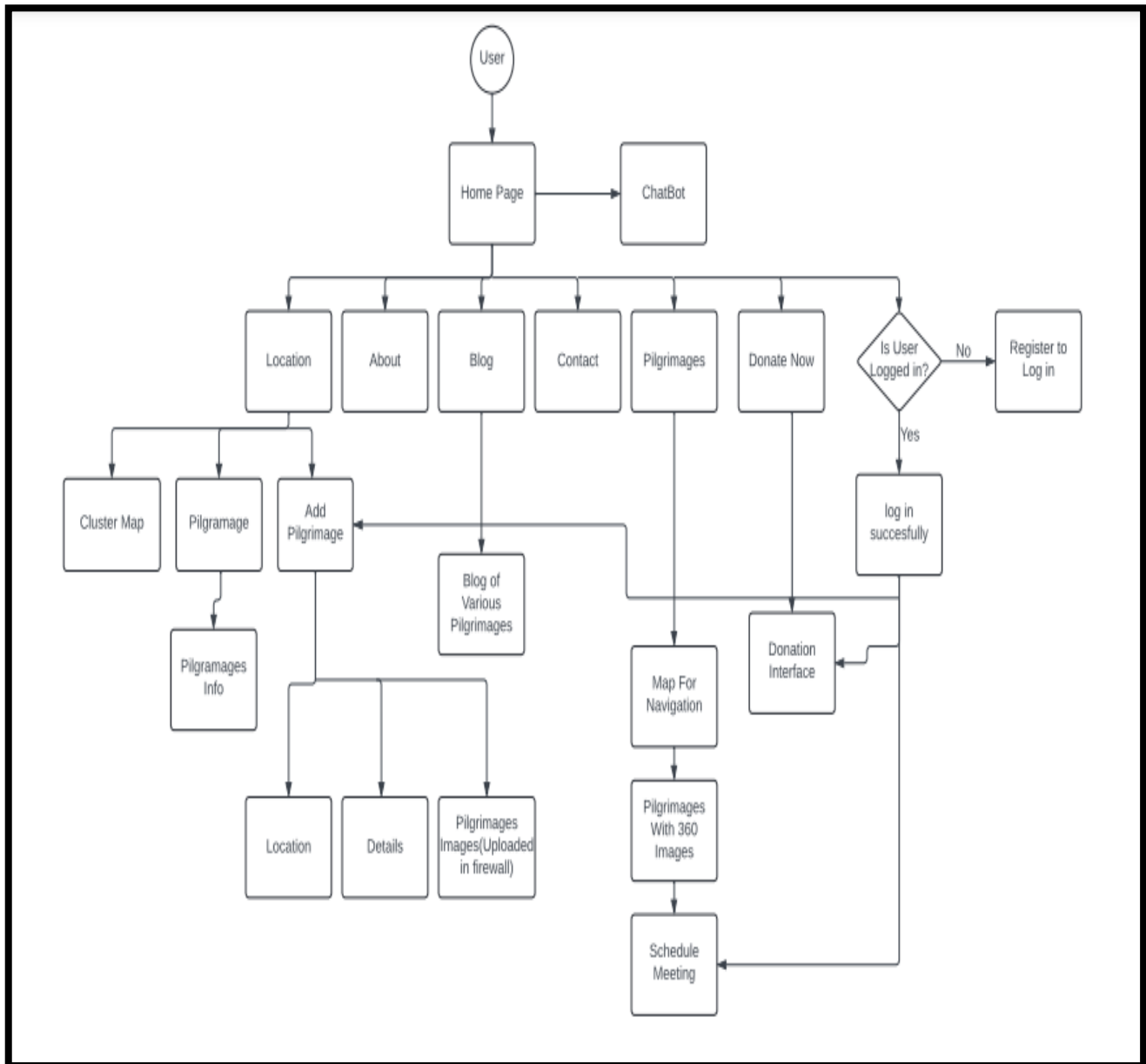


Figure 5.6 : Activity Diagram

Chapter 5

Project Planning

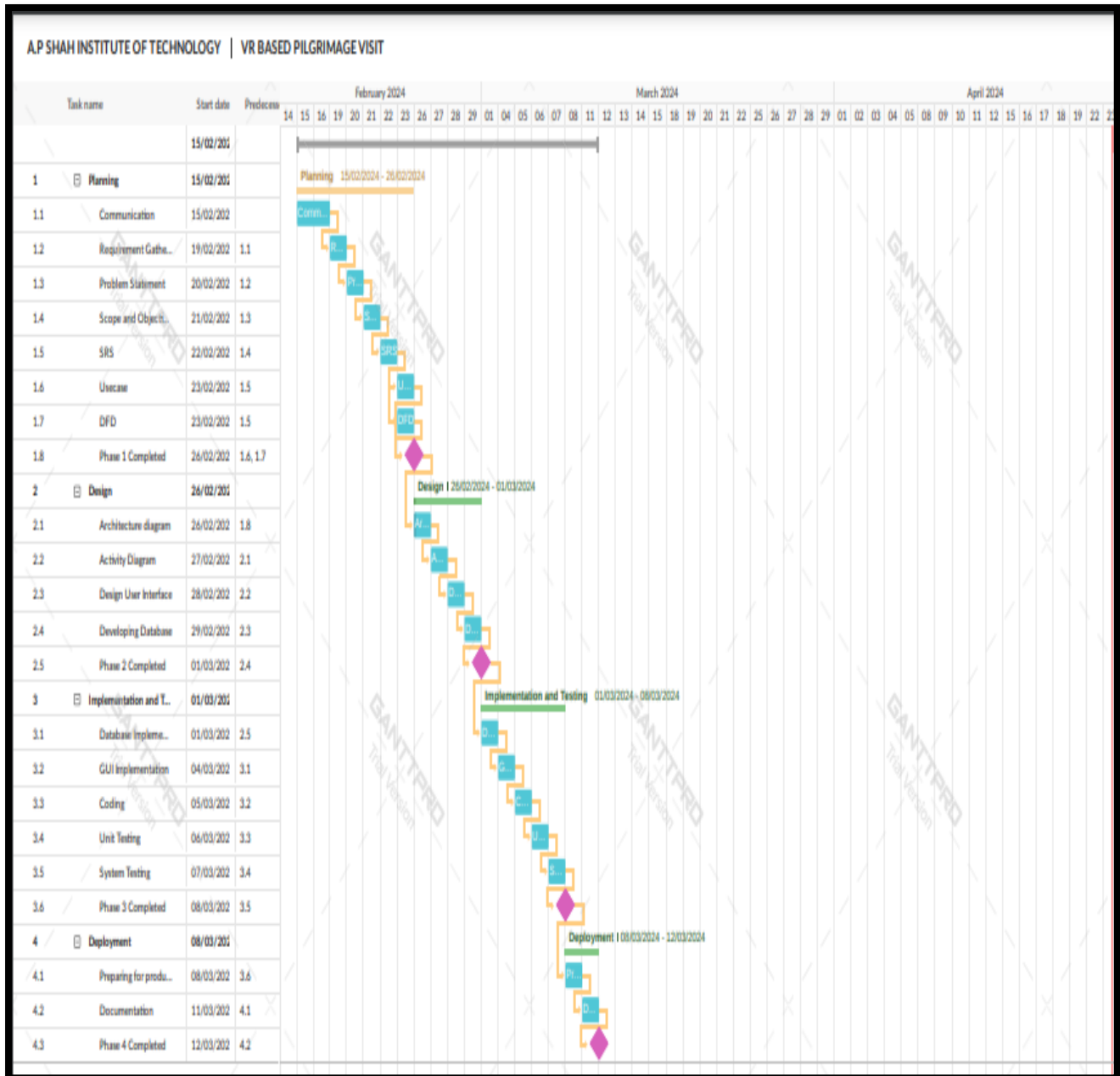


Figure 5.1 Gantt Chart

Chapter 6

Experimental Setup

- **Software Requirements: -**

- 1) Chatbot Integration
- 2) 360-Degree Video and Image Viewer
- 3) Interactive Map Integration
- 4) Content Management System
- 5) User Authentication and Management

- **Hardware Requirements: -**

- 1) CPU: core i5
- 2) RAM: 8.00 GB (7.68 GB usable)
- 3) STORAGE: 512 GB
- 4) OS: Windows

Chapter 7

Implementation Details

1) Installation Steps:

1. Node.js and npm Installation:

- Download and install Node.js from the official website.
- npm (Node Package Manager) comes bundled with Node.js, so once you install Node.js, npm will be installed automatically.

2. Create a New Project Directory:

- Create a new directory for your project.
- You can do this via the terminal (command prompt) using mkdir command:

Command

```
mkdir my-react-node-app
```

```
cd my-react-node-app
```

3. Initialize a Node.js project:

- Inside your project directory, initialize a new Node.js project using npm. This will create a package.json file.

Command

```
npm init -y
```

Install Express.js:

Express.js is a web application framework for Node.js.

4. npm install express

5. Install MongoDB:

- Install MongoDB by following the instructions on the official MongoDB installation guide.

6. Install Mongoose:

- Mongoose is an Object Data Modeling (ODM) library for MongoDB and Node.js.

7. Setting up React:

- You can use create-react-app to quickly set up a new React project. Run the following command to install it globally:

```
npm install -g create-react-app
```

8. Create React App:

- In your project directory, create a new React app using create-react-app.

Command

`npx create-react-app client`

9. Start React Development Server:

- Navigate to the React app directory (`cd client`) and start the development server.

Command

`npm start`

10. Start Node.js Server:

- Create a new file named `server.js` or `app.js` in your project root directory.
- Write your Node.js/Express.js server code in this file.
- Start the server using Node.js.

Command

`node server.js`

11. Connect Express.js with MongoDB:

- In your `server.js` file, connect Express.js with MongoDB using Mongoose.
- That's it! You've now set up a development environment with React, Node.js, Express.js, MongoDB, and Mongoose. You can start building your application.

a) Login Authorization:

Code Snippet:

```
const login = tryCatch(async(req,res) =>{
  const { email, password } = req.body;
  const emailLowerCase = email.toLowerCase();
  const existedUser = await User.findOne({ email: emailLowerCase });
  if (!existedUser)
    return res
      .status(404)
      .json({ success: false, message: 'User does not exist!' });
  const correctPassword = await bcrypt.compare(password, existedUser.password);
  if (!correctPassword)
    return res
      .status(400)
```

```

    .json({ success: false, message: 'Invalid credentials' });
const { _id: id, name, photoURL } = existedUser;
const token = jwt.sign({ id, name, photoURL }, process.env.JWT_SECRET, {
  expiresIn: '1h',
});
res.status(200).json({
  success: true,
  result: { id, name, email: emailLowerCase, photoURL, token },
});
});
and likewise for registration

```

b) firebase upload file code snippet :-

```

const uploadFile = (file, filePath) => {
  return new Promise(async (resolve, reject) => {
    const storageRef = ref(storage, filePath);
    try {
      await uploadBytes(storageRef, file);
      const url = await getDownloadURL(storageRef);
      resolve(url);
    } catch (error) {
      reject(error);
    }
  });
};

```

c) chatbot code snippet :-

```

const Chatbot = () => {
  useEffect(() => {
    // Initialize Botpress webchat
    const script1 = document.createElement('script');
    script1.src = 'https://cdn.botpress.cloud/webchat/v1/inject.js';
    script1.async = true;
    document.body.appendChild(script1);
    const script2 = document.createElement('script');
    script2.src = 'https://mediafiles.botpress.cloud/829bcb46-f42f-499b-b681-83795937937d/webchat/config.js';
  });
};

```

```

script2.defer = true;
document.body.appendChild(script2);
return () => {
  // Clean up on component unmount
  document.body.removeChild(script1);
  document.body.removeChild(script2);
};
}, []);
return (
  <div id="webchat"></div>
);
};
export default Chatbot;

```

d) Cluster Map code snippet :-

```

{clusters.map((cluster) => {
  const { cluster: isCluster, point_count } = cluster.properties;
  const [longitude, latitude] = cluster.geometry.coordinates;
  if (isCluster) {
    return (
      <Marker
        key={cluster-`${cluster.id}`}
        longitude={longitude}
        latitude={latitude}
      >
        <div
          className="cluster-marker"
          style={{
            width: `${10 + (point_count / points.length) * 20}px`,
            height: `${10 + (point_count / points.length) * 20}px`,
          }}
          onClick={() => {
            const zoom = Math.min(
              supercluster.getClusterExpansionZoom(cluster.id),
              20
            );
            mapRef.current.flyTo({
              center: [longitude, latitude],
              zoom,

```

```

        speed: 1,
      });
    }}
  >
    {point_count}
  </div>
</Marker>
);
}
return (
  <Marker
    key={pilgrim-`${cluster.properties.roomId}`}
    longitude={longitude}
    latitude={latitude}
  >
    <Tooltip title={cluster.properties.title}>
      <Avatar
        src={cluster.properties.images}
        component={Paper}
        elevation={2}
        onClick={() => setPopupInfo(cluster.properties)}
      />
    </Tooltip>
  </Marker>
);
}})
{/* <GeocoderInput /> */}
{popupInfo && (
  <Popup
    longitude={popupInfo.lng}
    latitude={popupInfo.lat}
    maxWidth="auto"
    closeOnClick={false}
    focusAfterOpen={false}
    onClose={() => setPopupInfo(null)}
  >
    <PopupPilgrim {...{ popupInfo }} />
  </Popup>

```



```

    })
  </Map>
</Box>
)
}

```

e) Fetch Data code snippet :-

```

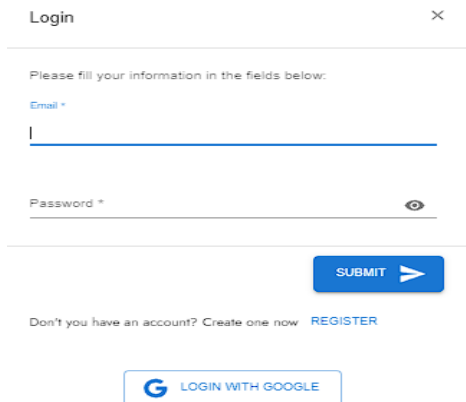
{const fetchData = async (
  { url, method = 'POST', token = '', body = null },
  dispatch
) => {
  const headers = token? { 'Content-Type': 'application/json', authorization: Bearer ${token} }
  : { 'Content-Type': 'application/json' };
  console.log('Headers:', headers);
  body = body ? { body: JSON.stringify(body) } : {};
  try {
    const response = await fetch(url, { method, headers, ...body });
    const data = await response.json();
    if (!data.success) {
      if (response.status === 401)
        dispatch({ type: 'UPDATE_USER', payload: null });
      throw new Error(data.message);
    }
    return data.result;
  } catch (error) {
    dispatch({
      type: 'UPDATE_ALERT',
      payload: { open: true, severity: 'error', message: error.message },
    });
    console.log(error);
    return null;
  }
};
export default fetchData;}

```

Chapter 8

Result

- **LOGIN /SIGNUP :-**



Login

Please fill your information in the fields below:

Email *

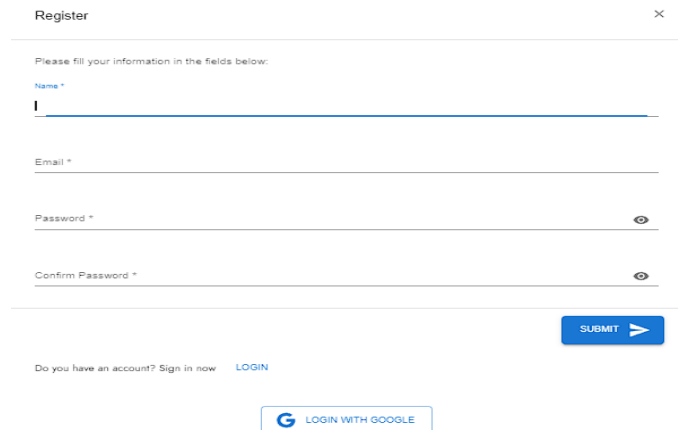
Password *

[SUBMIT](#)

Don't you have an account? Create one now [REGISTER](#)

[G LOGIN WITH GOOGLE](#)

Figure 8.1 : LOGIN



Register

Please fill your information in the fields below:

Name *

Email *

Password *

Confirm Password *

[SUBMIT](#)

Do you have an account? Sign in now [LOGIN](#)

[G LOGIN WITH GOOGLE](#)

Figure 8.2 : SIGNUP

- **How Page:-**

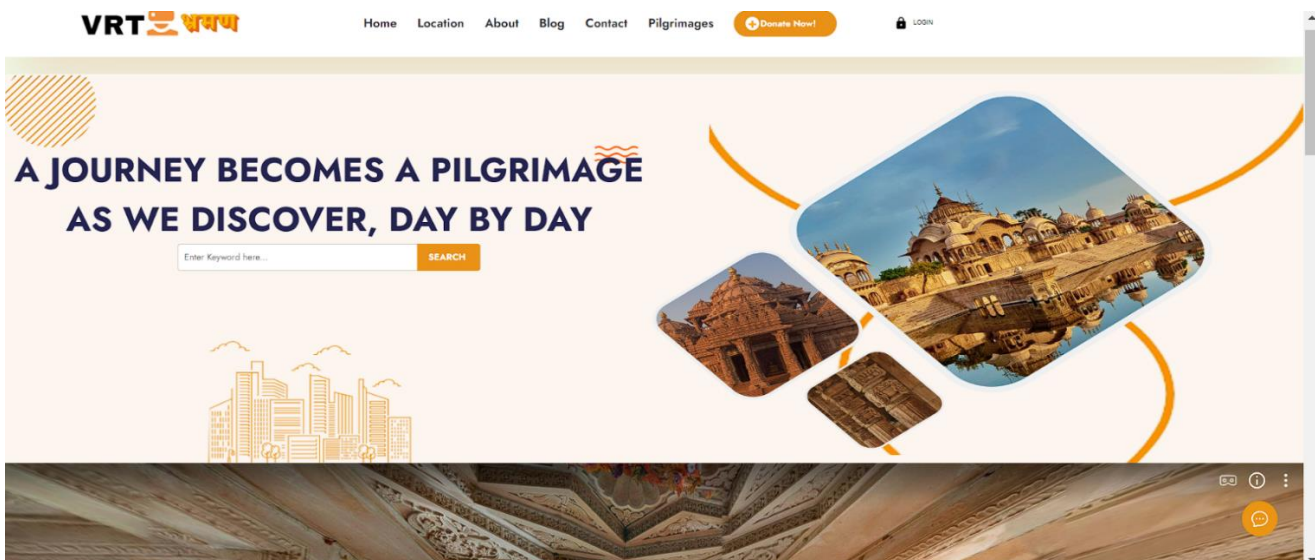


Figure 8.3 : HOME PAGE

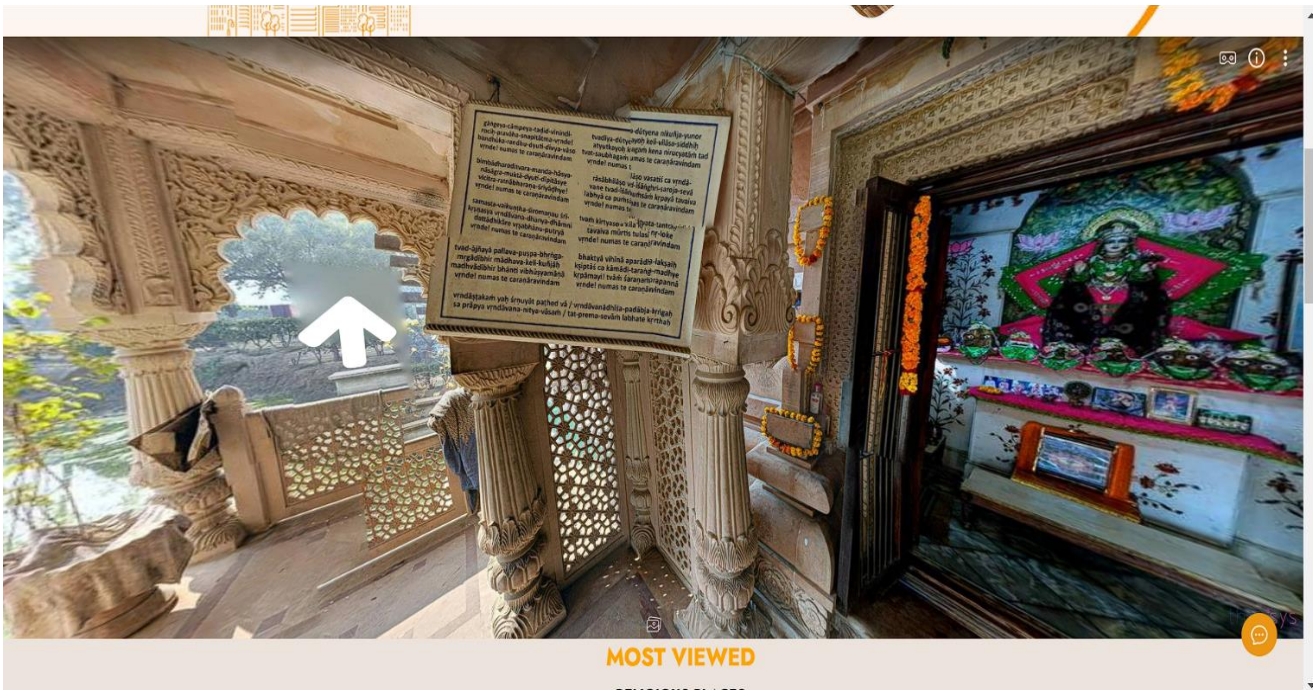


Figure 8.4 : 360 VIEW

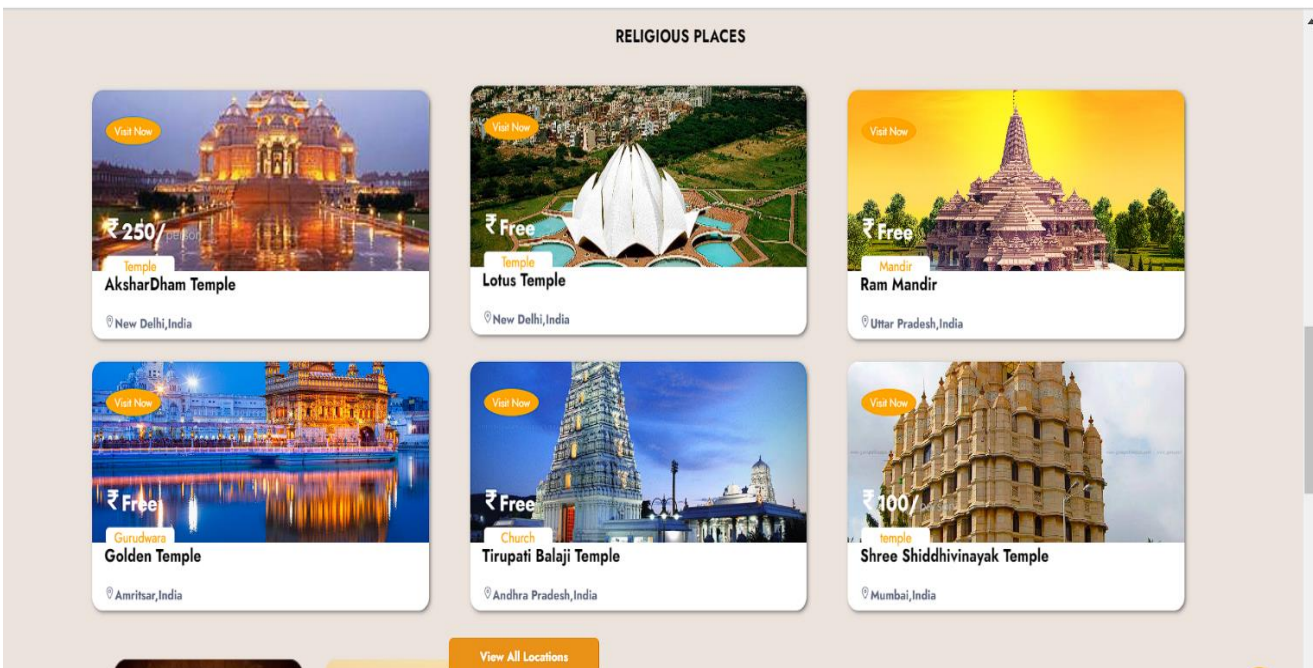


Figure 8.5 : RELIGIOUS PLACES

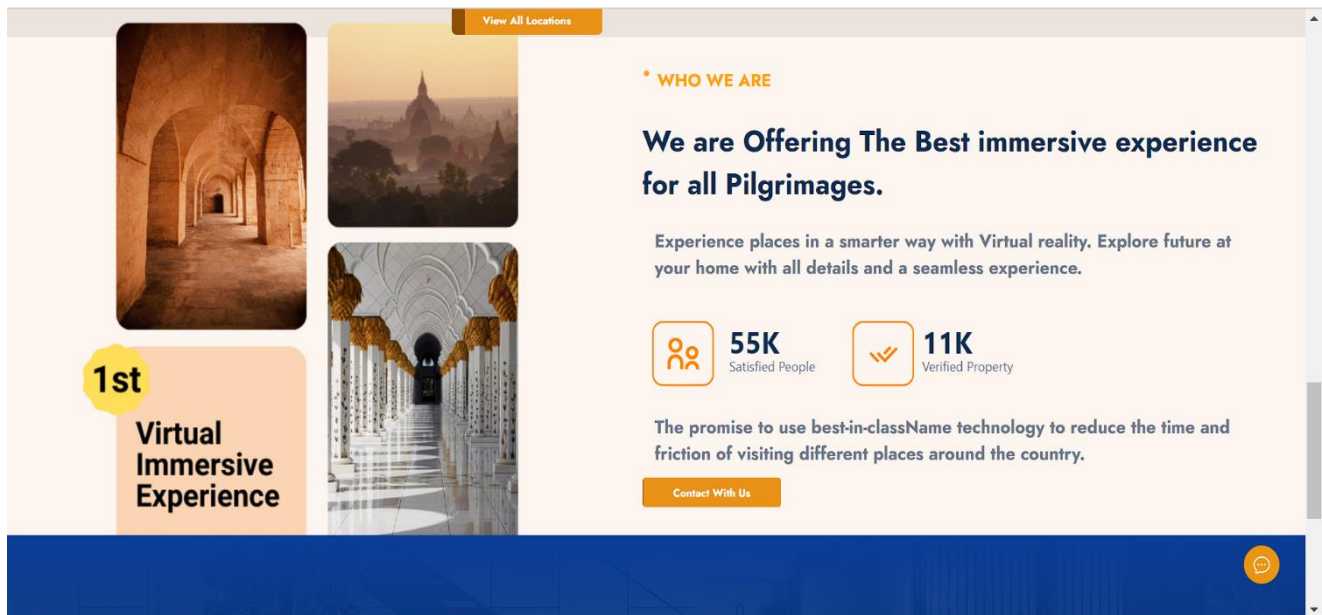


Figure 8.6 : CONTACT US

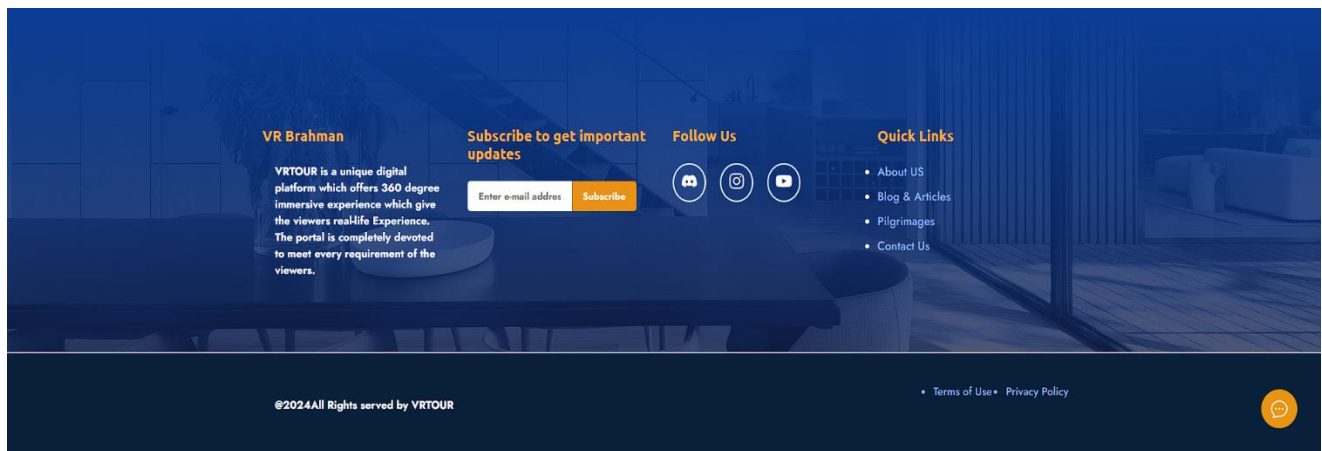


Figure 8.7 : FOOTER

- **Pilgrimage Page:**

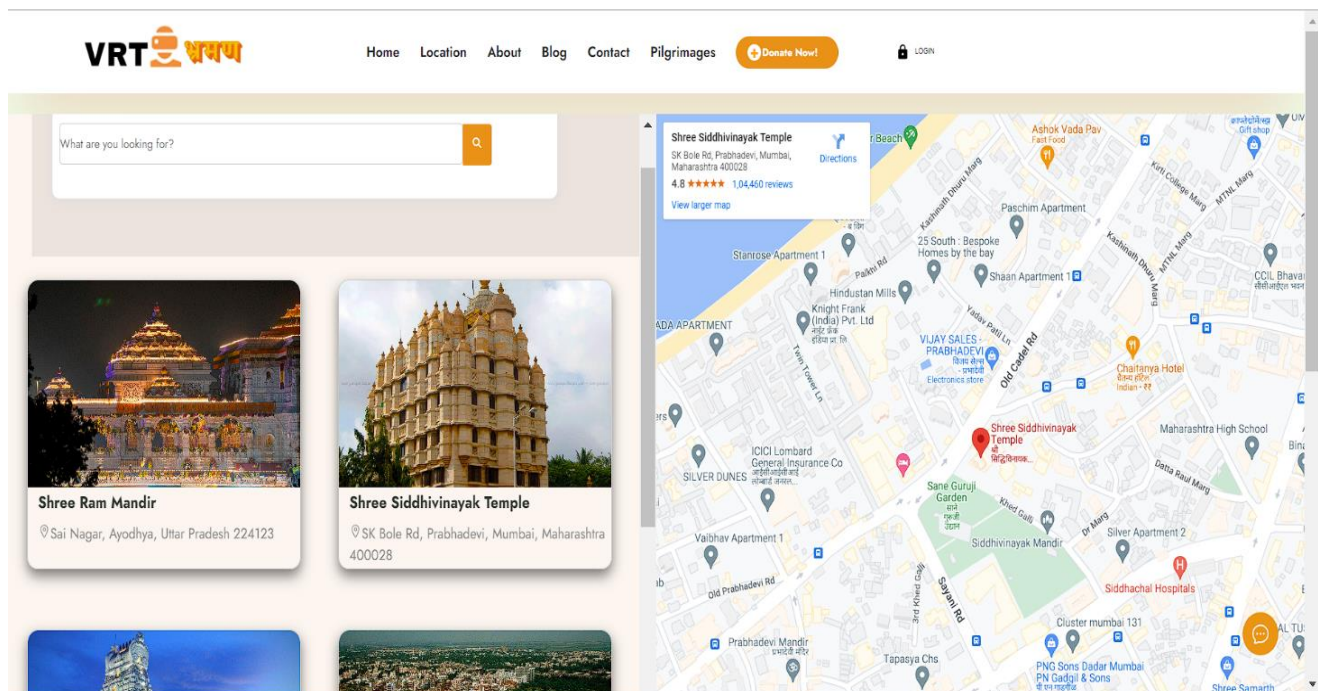


Figure 8.8 : PILGRIMAGE PAGE

Overview

No	2000	Ticket Fare	FREE
Type	TEMPLE	Parking	YES
Timmings	10am to 8pm	Prayer Timings	10.30am to 7pm
Tour Time	30 MINUTES	LandArea	30Acre
Size	5462 sq/f	Built Year	1947

About This Place

Kanyaruman Tampa make than years old the temple has not only religious tur also temoncal sificance Kanyakumarissinown for being the incarnation of Part the ideas who commemad annolution to many Lord Shiva According to the legends, Lord Shiva and Goddes Ratka was not mamet Kanyakuman decimina vegas it is abo said that the gom thy na collected for the woditing was left uncoloured and trament ami stones, in the panant day, toutes can tay stones that ikke grans The Kanyakuma ampli was

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Schedule Meeting

Your Full Name

Phone Number

Your Email

Your Message

Submit

Figure 8.9 : PILGRIMAGE INFO

- **360 Degree Image :**

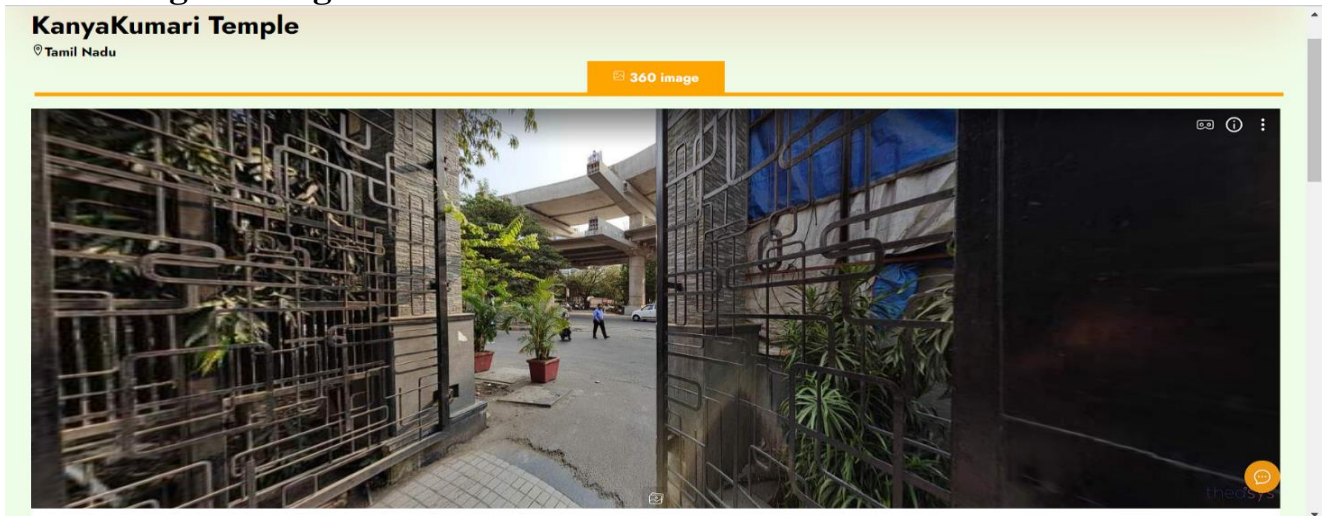


Figure 8.10 : 360 DEGREE VIEW

- **Schedule Meeting:**

SCHEDULE MEETING

Name:

Email:

Phone Number*:

Meeting Date:

Meeting Time:

Meeting ID: *(Schedule a meeting and then fill this field with either link or ID of the meet)

Select Guide: Select a guide

Figure 8.11 : SCHEDULE MITTING

- **Blog:**

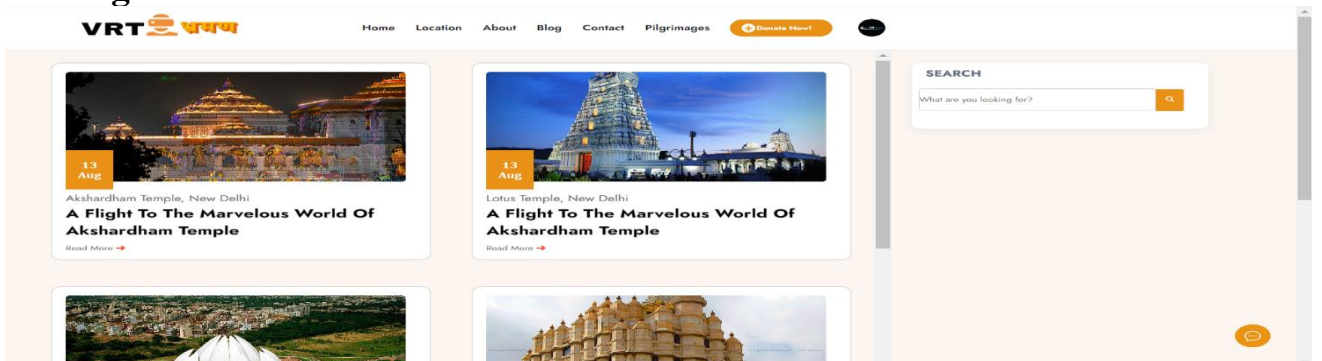


Figure 8.12 : BLOG

- **Chat Bot:**



Figure 8.13 : CHAT BOT

- **About Us:**

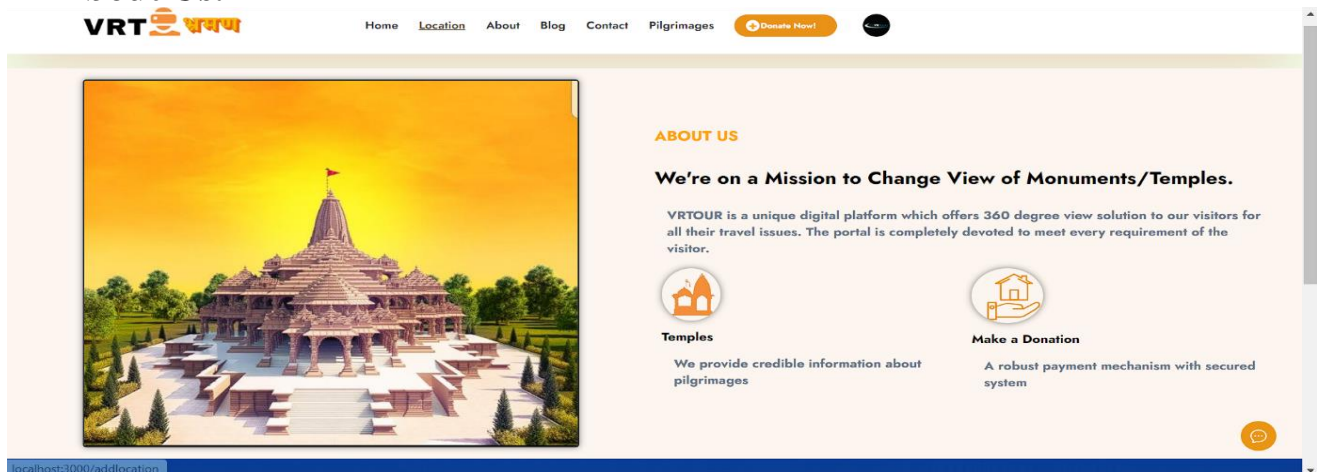


Figure 8.14 : ABOUT US

- **Donation:**

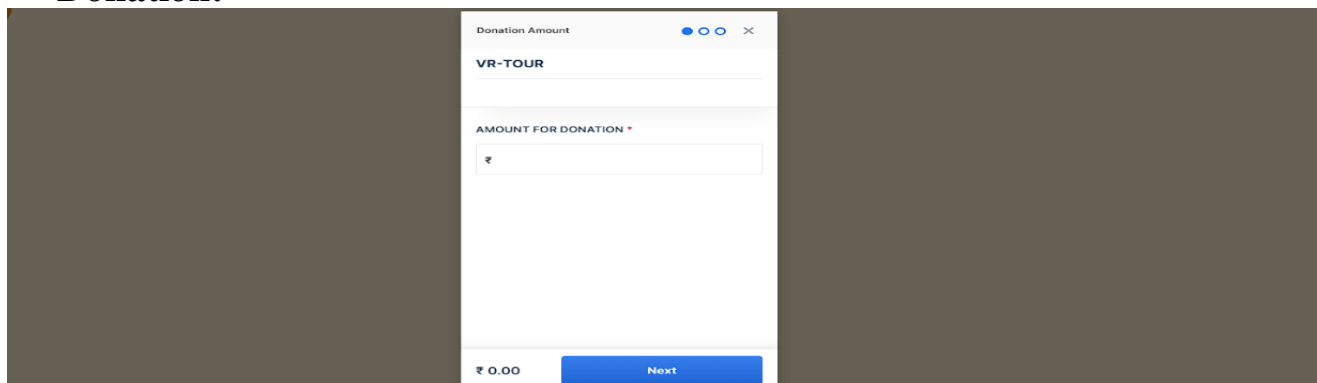


Figure 8.15 : DONATION

- **Location:**

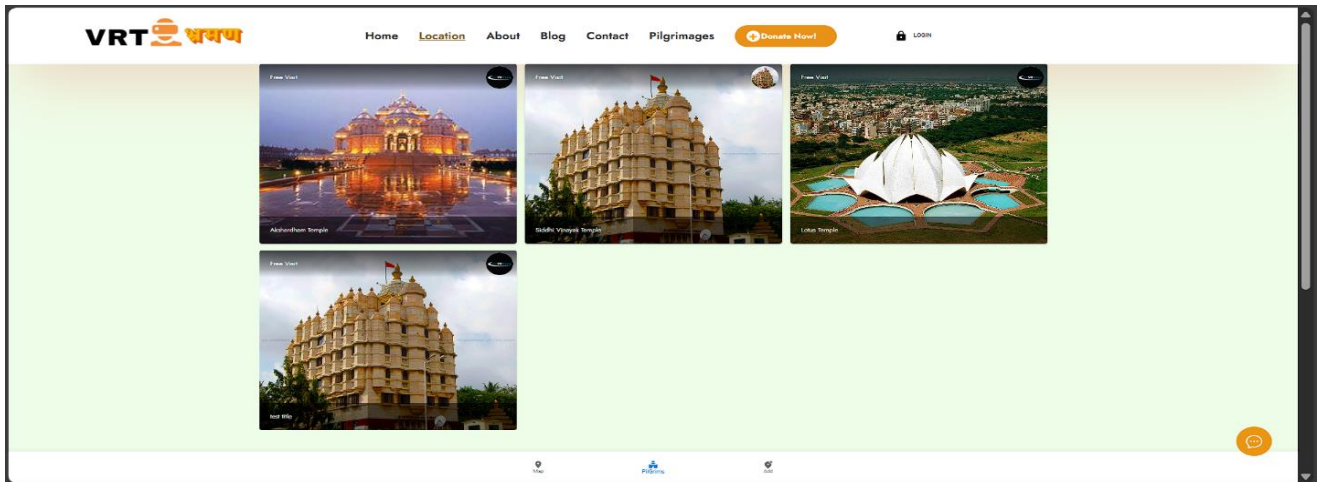


Figure 8.16 : LOCATION PAGE

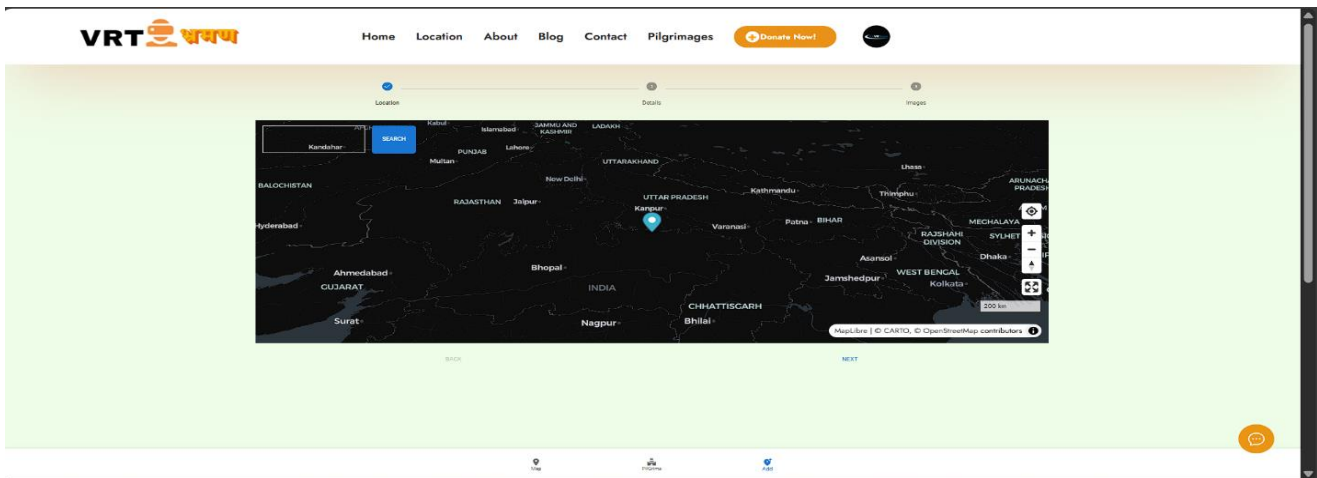


Figure 8.17 : MAP

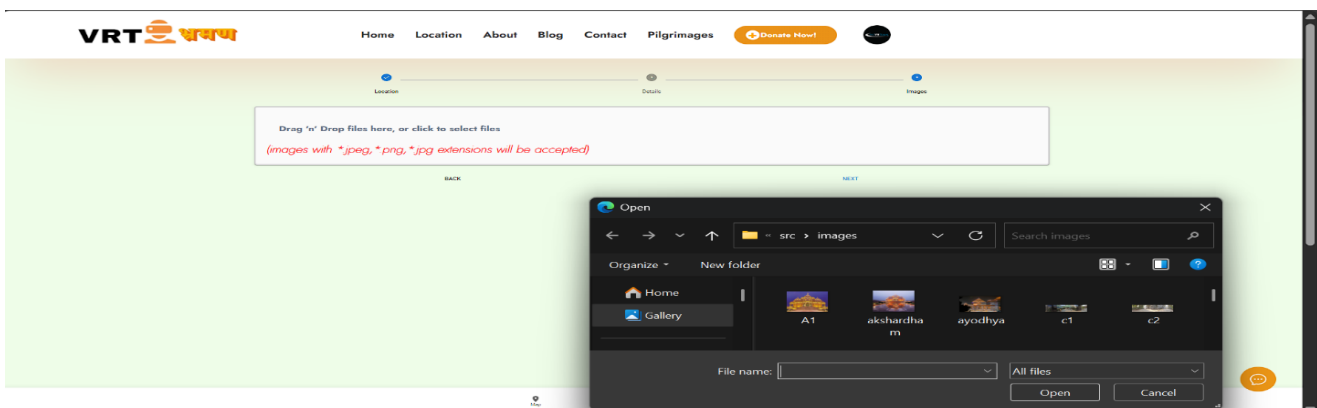


Figure 8.18 : ADD PILGRIMAGE IMAGE

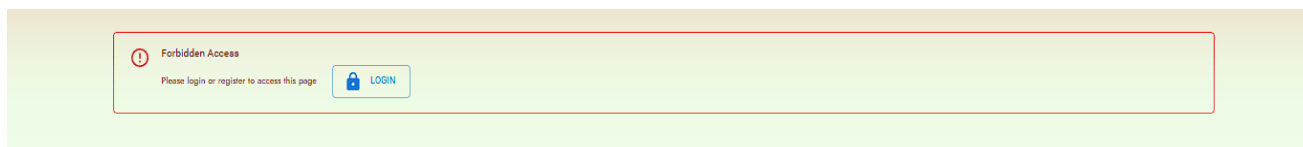


Figure 8.19 : FORBIDDEN ACCESS

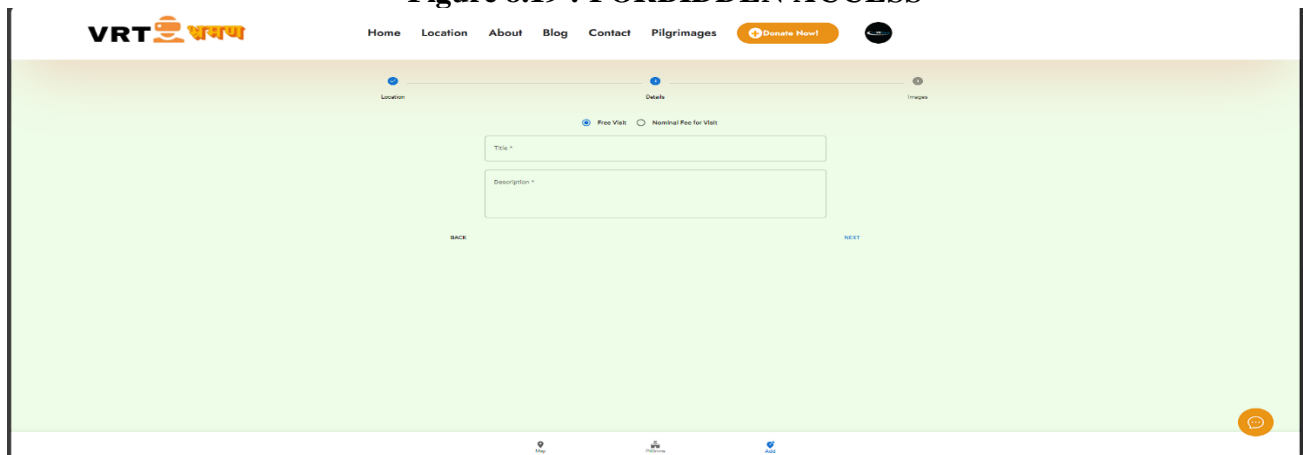


Figure 8.20 : ADD INFORMATION

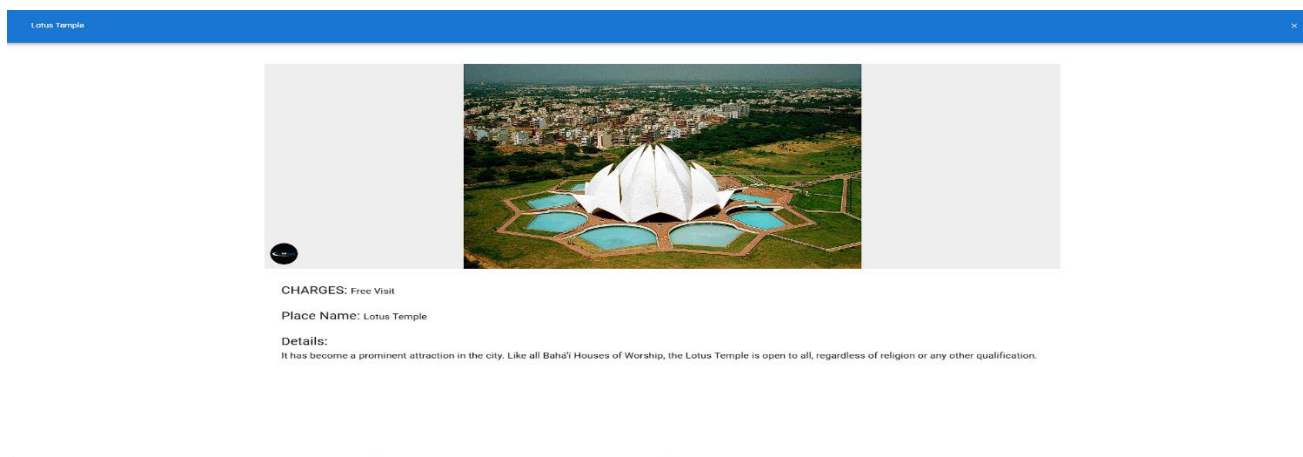


Figure 8.21 : AFERT ADDING INFORMATION

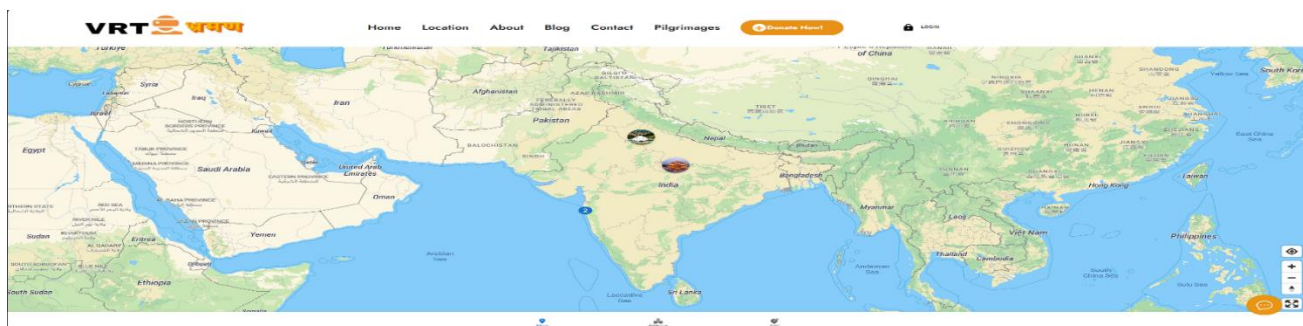


Figure 8.22 : REFLECT ON MAP

Chapter 9

Conclusion

The "Digital Pilgrimage Hub" project culminates in a transformative digital platform that redefines the very essence of pilgrimage. Through innovative technologies like 360-degree virtual experiences, interactive maps, and chatbot assistance, the project transcends physical limitations, offering users an immersive journey into the world's most sacred sites. This platform not only educates but also inspires, fostering a deeper understanding and appreciation of cultural and spiritual heritage. By empowering users to schedule visits, contribute new places, and engage with a global community, the "Digital Pilgrimage Hub" goes beyond being a mere virtual tour; it becomes a dynamic platform for cultural exchange and spiritual growth. In conclusion, this project exemplifies the harmonious blend of technology and tradition, paving the way for a new era of pilgrimage experiences that are accessible, enriching, and deeply meaningful.

the "Digital Pilgrimage Hub" has succeeded in revolutionizing the way we approach pilgrimage, making it more accessible, engaging, and enriching for individuals around the world. By combining cutting-edge technology with a deep respect for cultural and spiritual heritage, this platform has created a truly transformative experience that transcends borders and unites people in a shared journey of discovery and enlightenment.

Chapter 10

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