IE403 - Human Computer Interaction

Guided by: Proff. Manish Khare

Travel Based Application

Group ID: 2

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Introduction

The application, named **Voyago**, employs intuitive UI/UX principles to create a seamless interface. It allows users to explore destinations, customize itineraries, and choose travel and accommodation options based on budget and preferences. Key features include an interactive map, personalized recommendations, and support for cultural activities such as local cuisine and transportation options, ensuring an inclusive and engaging user journey.

This report outlines the design process, focusing on task analysis, affordances, signifiers, mapping, and feedback mechanisms to optimize usability. Each aspect of the application has been designed with the end-user in mind, prioritizing accessibility and clarity to enhance user satisfaction.

Problem Statement

Planning a trip often involves navigating multiple platforms to explore destinations, compare accommodations, arrange transportation, and discover local cultural activities. This fragmented process can be overwhelming and time-consuming, especially for travelers seeking authentic local experiences alongside traditional travel packages.

The lack of a centralized platform that seamlessly integrates standard travel services with personalized, local recommendations creates a gap in the travel planning industry. Users frequently face challenges such as difficulty in discovering cultural hotspots, understanding local transportation options, and tailoring itineraries to match their preferences and budgets.

This project addresses these issues by designing an e-travel application, **Voyago**, that combines standard travel planning with curated local experiences in a single, user-friendly platform. The goal is to simplify the trip-planning process while promoting cultural engagement and enhancing the overall travel experience.

Objectives

The primary objective of this project are :

- **To design an intuitive e-travel application that simplifies the trip-planning process.**
- **To integrate standard travel services, such as accommodation and transportation, with personalized recommendations for local cultural experiences.**
- **To provide users with interactive features, such as an explore map and destination filters, for easy navigation and customization.**
- **To ensure seamless user interaction through effective affordances, signifiers, and feedback mechanisms.**
- **To promote cultural engagement by highlighting local cuisines, activities, and transportation options.**
- **To create a user-friendly interface that accommodates diverse user preferences and budgets.**
- To enhance accessibility and user satisfaction by minimizing complexity in the travel planning process.

Application Overview

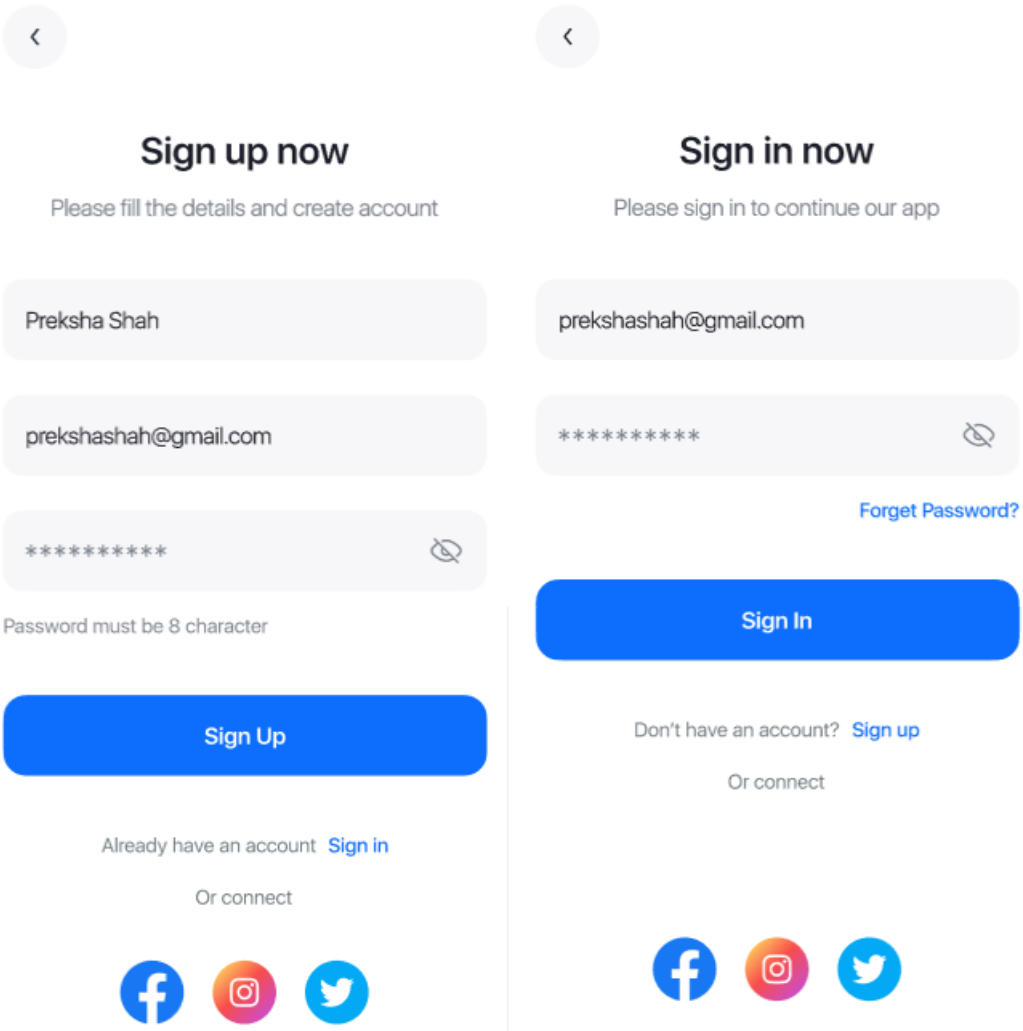
The travel application provides users with features like login/signup, home page navigation, destination exploration, and trip planning. Each module is designed to cater to specific user needs and align with HCI principles for enhanced usability.

1. Log-in / Sign-up Module

Purpose: Facilitates secure account creation and login for users, enabling personalized access to the app.

Key Features:

- **Sign-Up Options**: Users can register using their email, phone numbers, or third-party platforms like Google, Facebook, and Apple.
- **Log-in Options**: Existing users can log in with their credentials or through third-party services for convenience.


Sign up now
Please fill the details and create account
Preksha Shah
prekshashah@gmail.com
****
Password must be 8 character
Sign Up
Already have an account Sign in
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Sign in now
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Forget Password?
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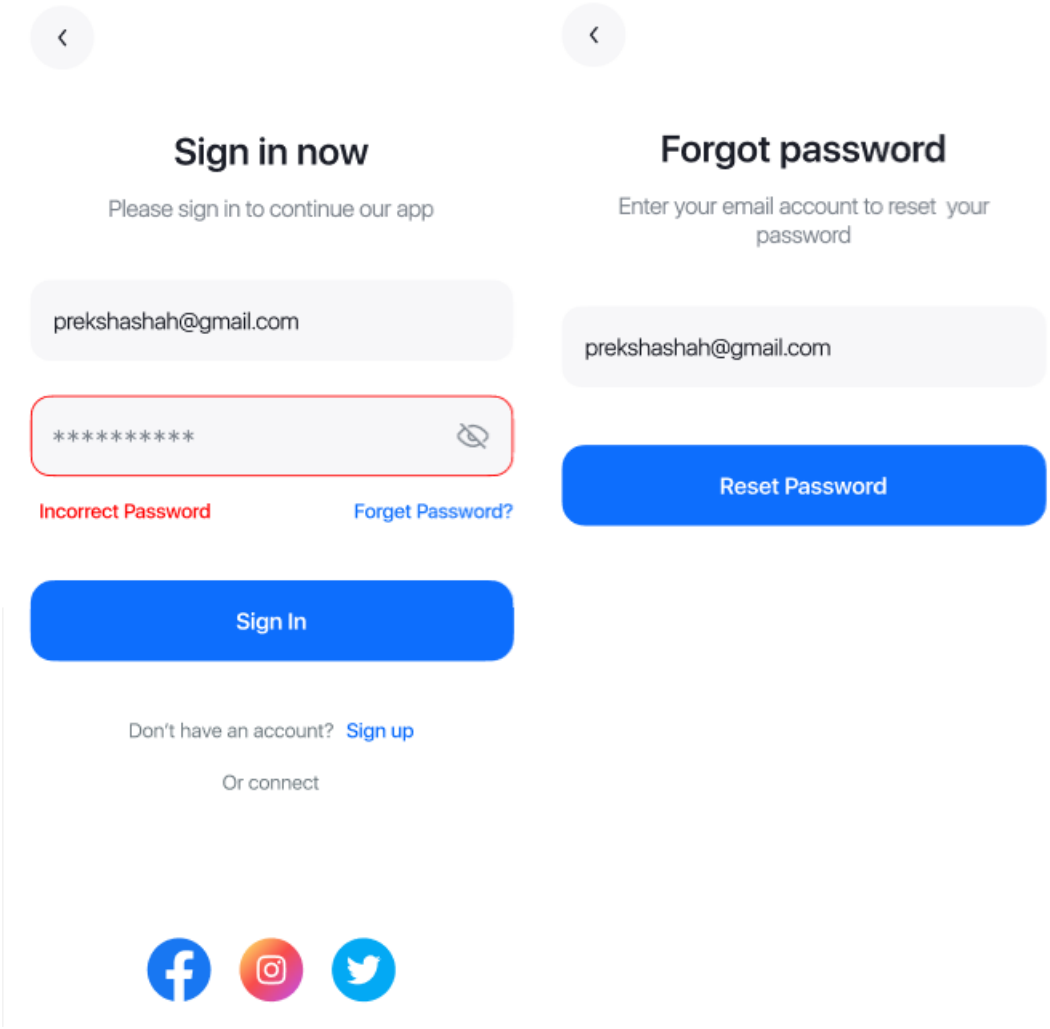
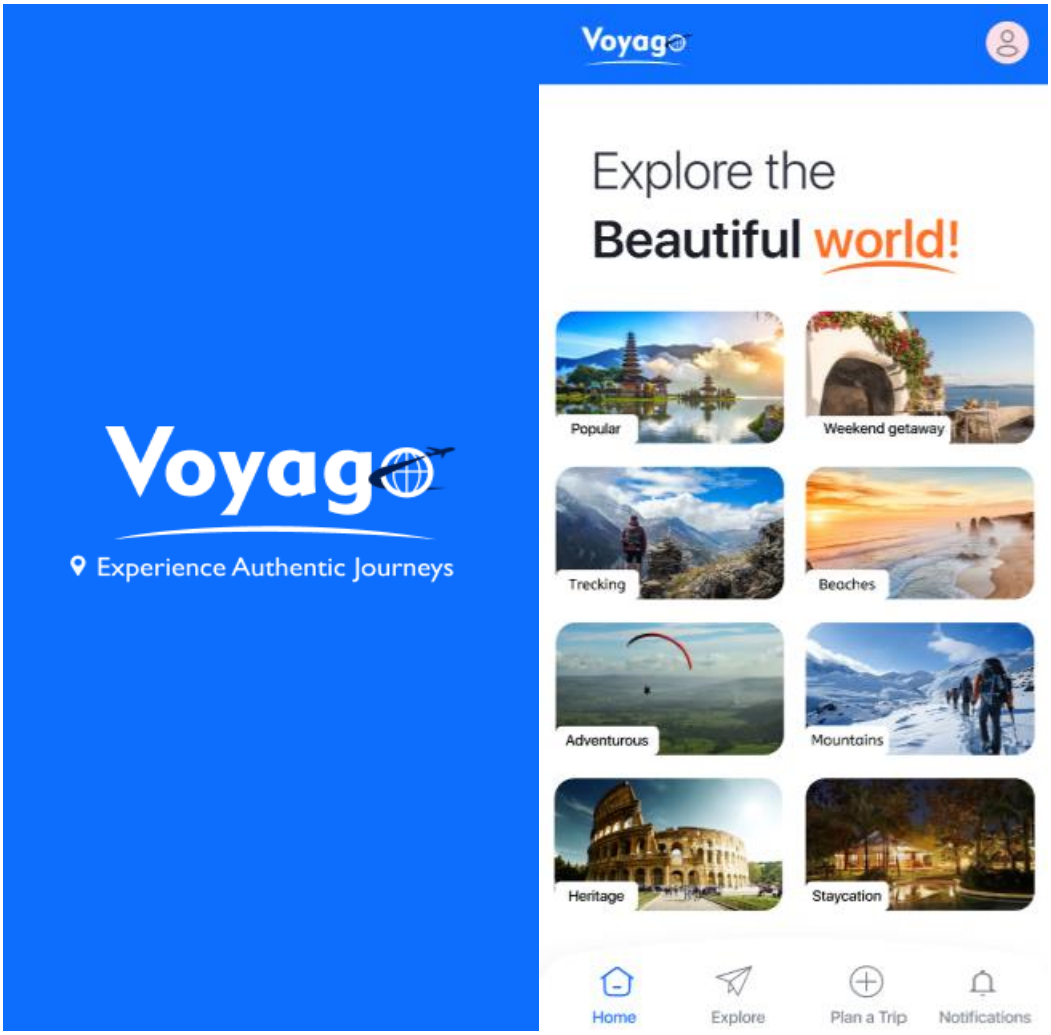


2. Home Page

Purpose: Serves as the central navigation hub, enabling users to explore destinations, plan trips, and access key features.

Key Features:

- **Trip Planner**: A quick-access tool where users can input trip details, such as dates, locations, and preferences, to start planning.
- **Explore Destinations**: Displays trending and popular destinations for users to browse and explore.
- **Popular Destinations**: A curated list of frequently visited, top-rated destinations categorized by type or region.

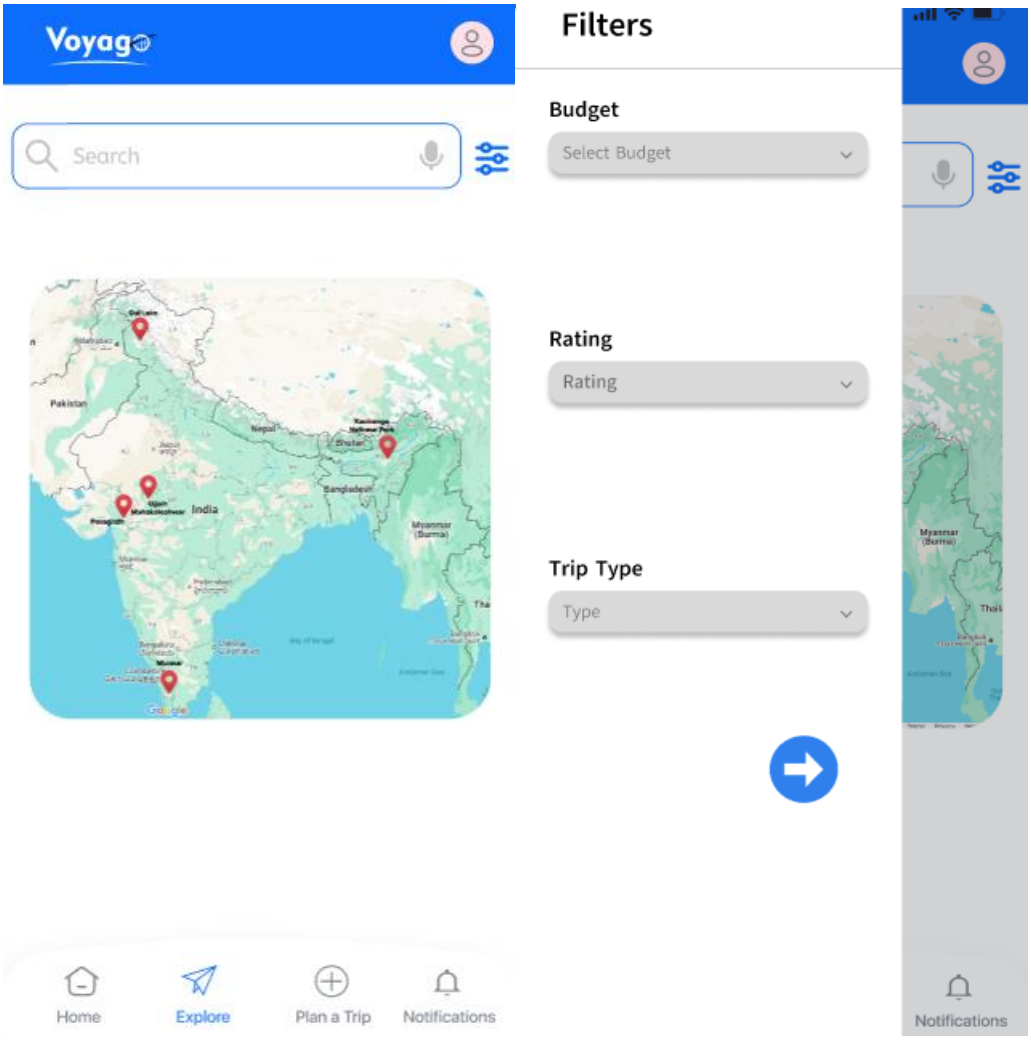


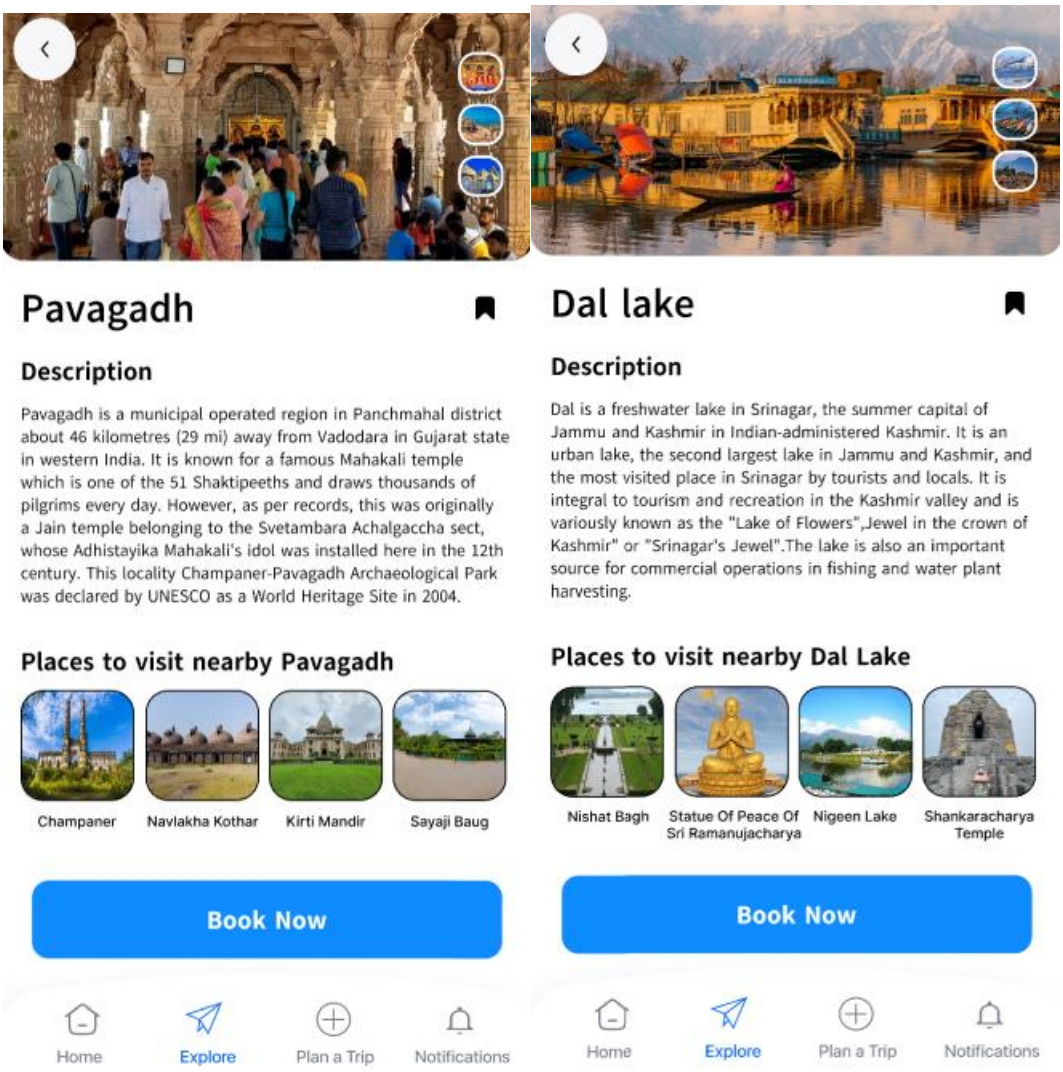
3. Explore Destination Page

Purpose: Allows users to research destinations with detailed insights, interactive maps, and filters for tailored exploration.

Key Features:

- **Interactive Map**: Users can explore cities, landmarks, and other points of interest with detailed information on each.
- **Themed Destinations**: Categorizes destinations into themes like adventure or family-friendly, with options to filter by budget, duration, or distance.
- **Popular Destinations**: Organized by ratings, visitor numbers, and trends to highlight sought-after places.
- **Search Bar with Filters**: Enables users to refine searches based on trip duration, distance, or budget, offering a tailored discovery experience.





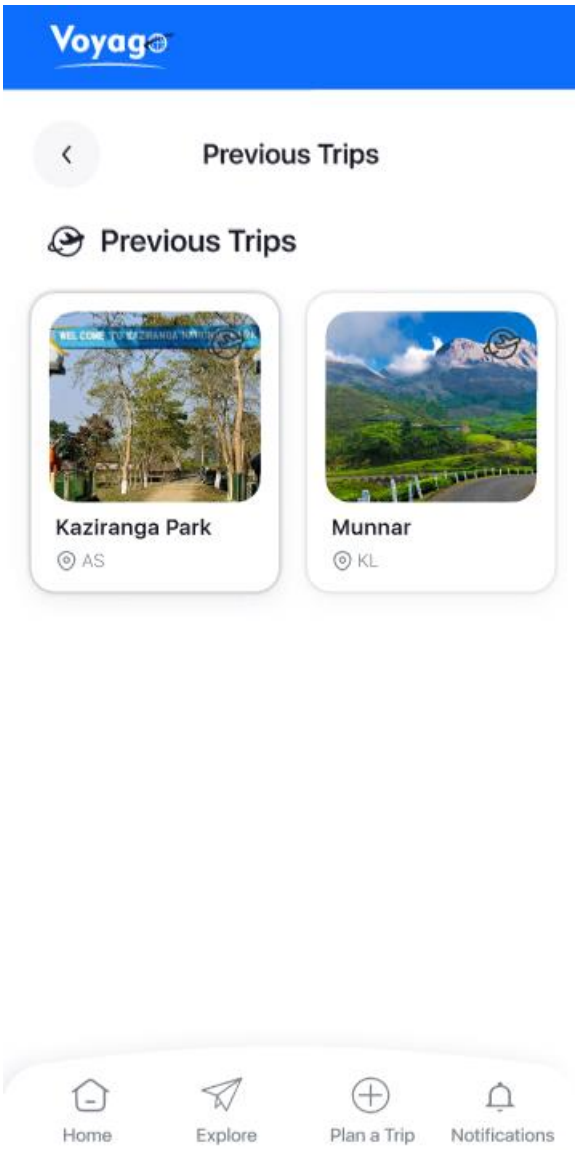
4. User Profile Page

Purpose: Provides a personalized interface where users can manage their information, travel history, and preferences.

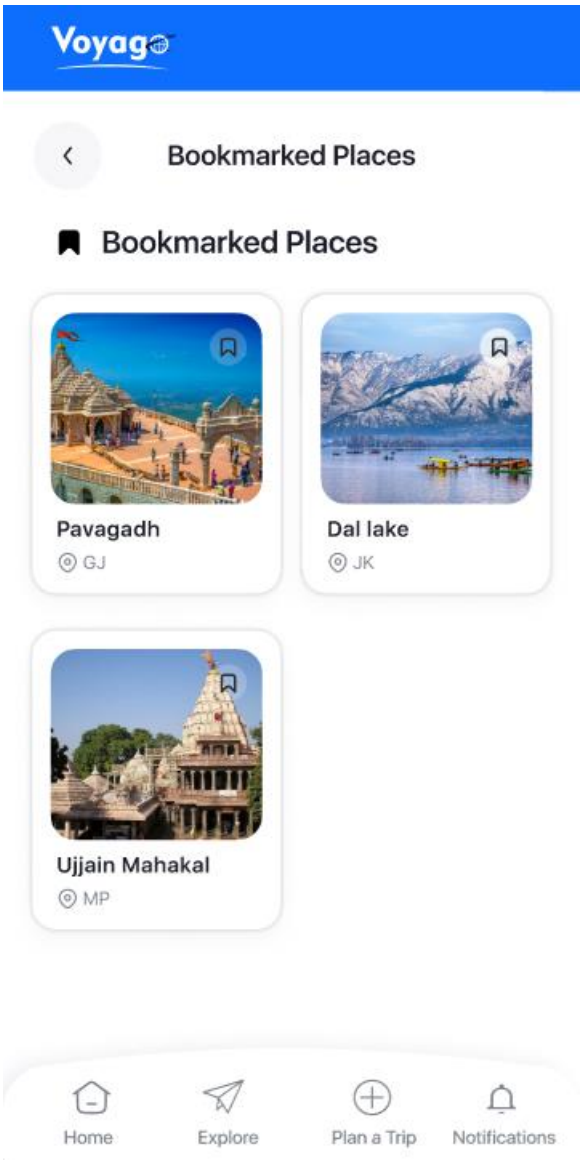
Key Features:

- **Personal Details**: Displays the user's name, contact details, and profile picture for easy management.

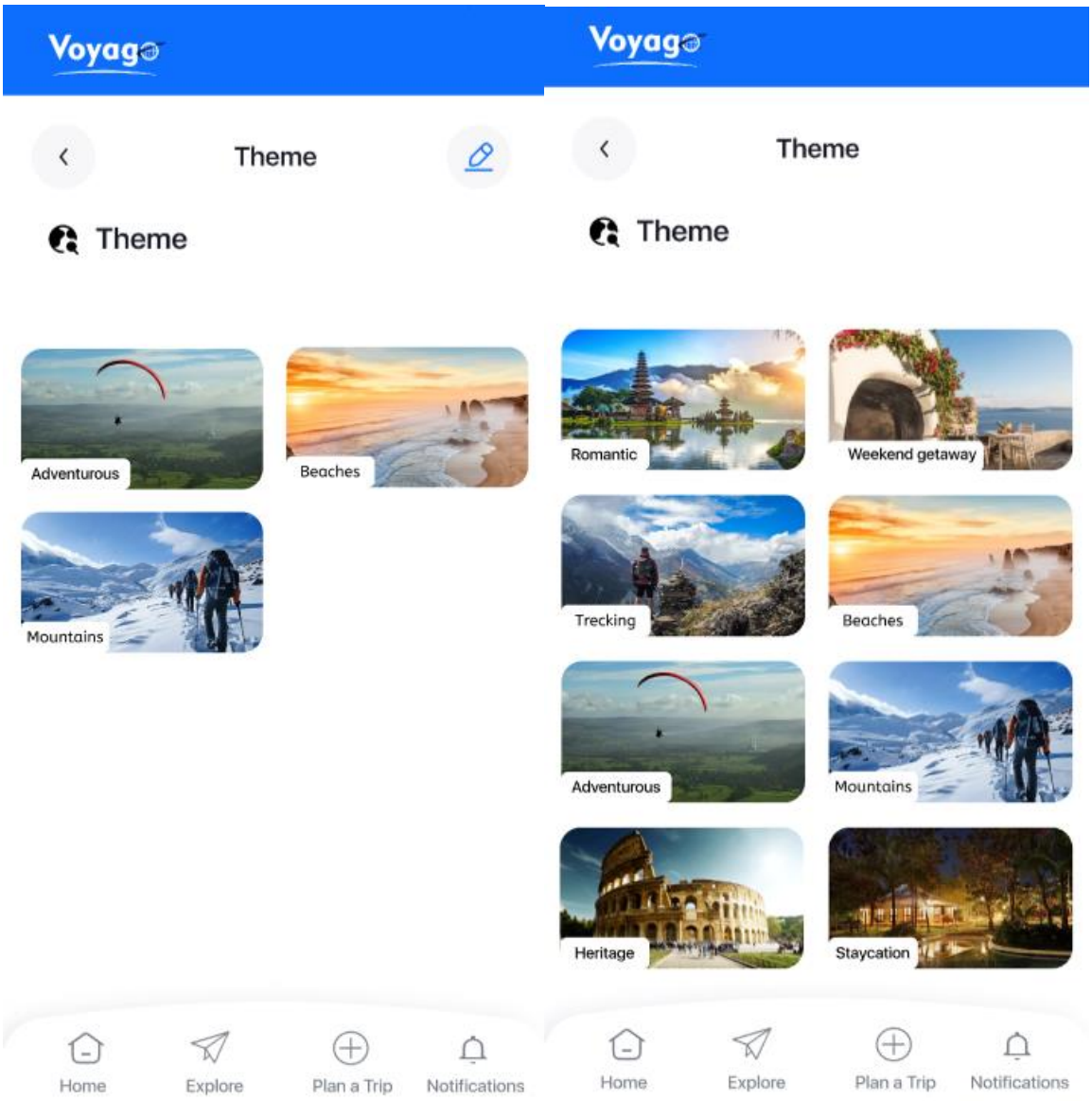
- **Travel History**: Logs previously visited destinations along with travel dates.



- **Saved/Favourite Destinations**: A section for bookmarking destinations of interest for future trips.



- **Preferable Theme Selection**: Users can choose their preferred travel styles (e.g., adventure, luxury) for personalized recommendations.



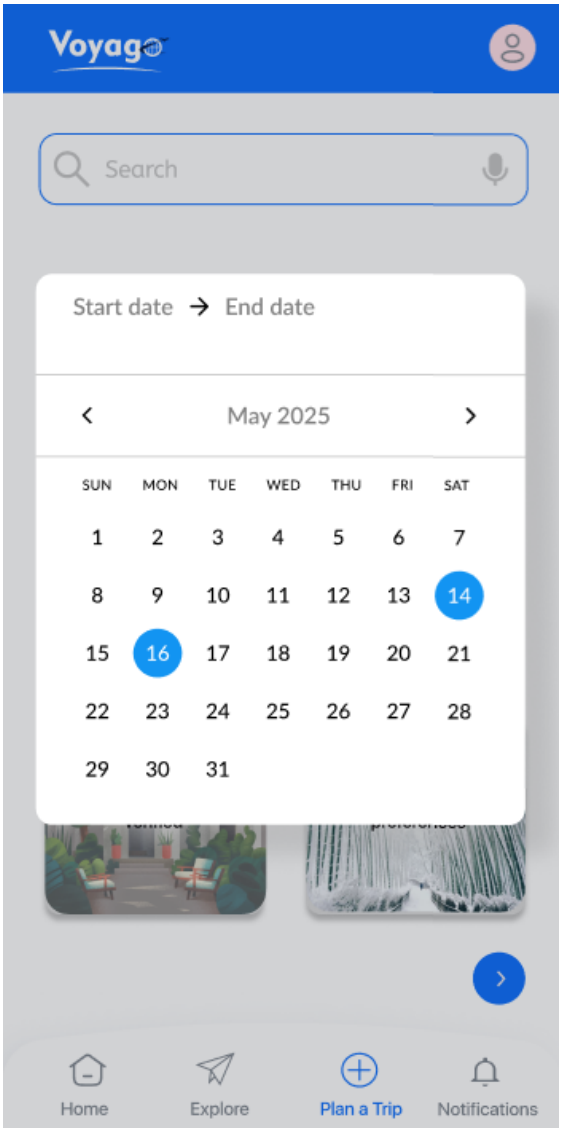
- **Current Location on Map**: Shows the user's current location with nearby points of interest.
- **Emergency SOS Option**: Provides quick access to local emergency services while traveling.

5. Planner Trip Page

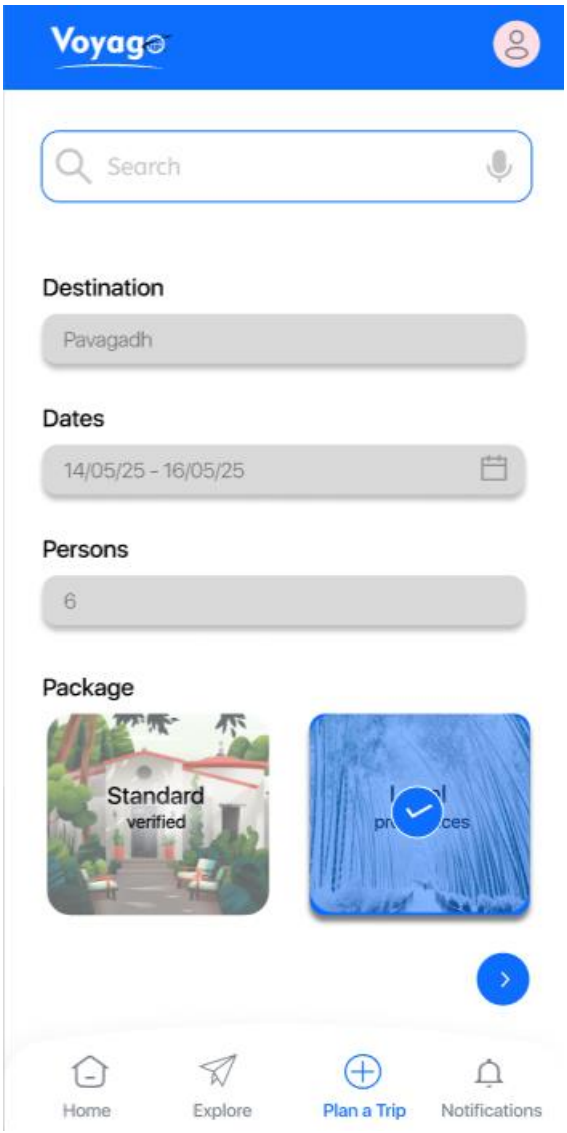
Purpose: Helps users organize all aspects of their trips, from travel dates to accommodations and transportation and personalized features.

Key Features:

- **Search Bar for Destinations**: Allows users to search and select trip destinations.
- **Calendar**: Enables users to specify travel dates and trip durations.

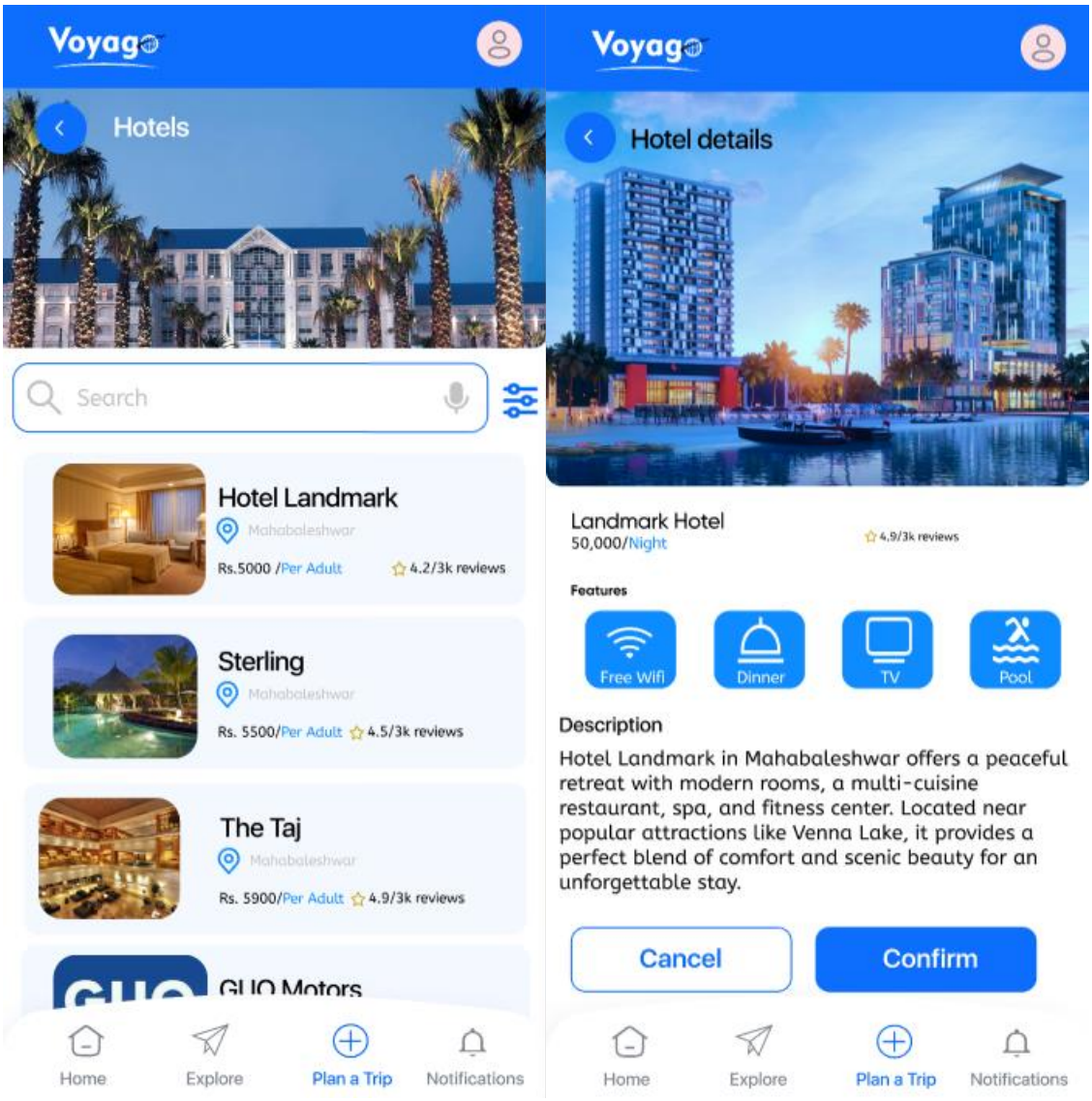


- **Package Selection**: Offers different travel packages, such as premium or budget-friendly options.

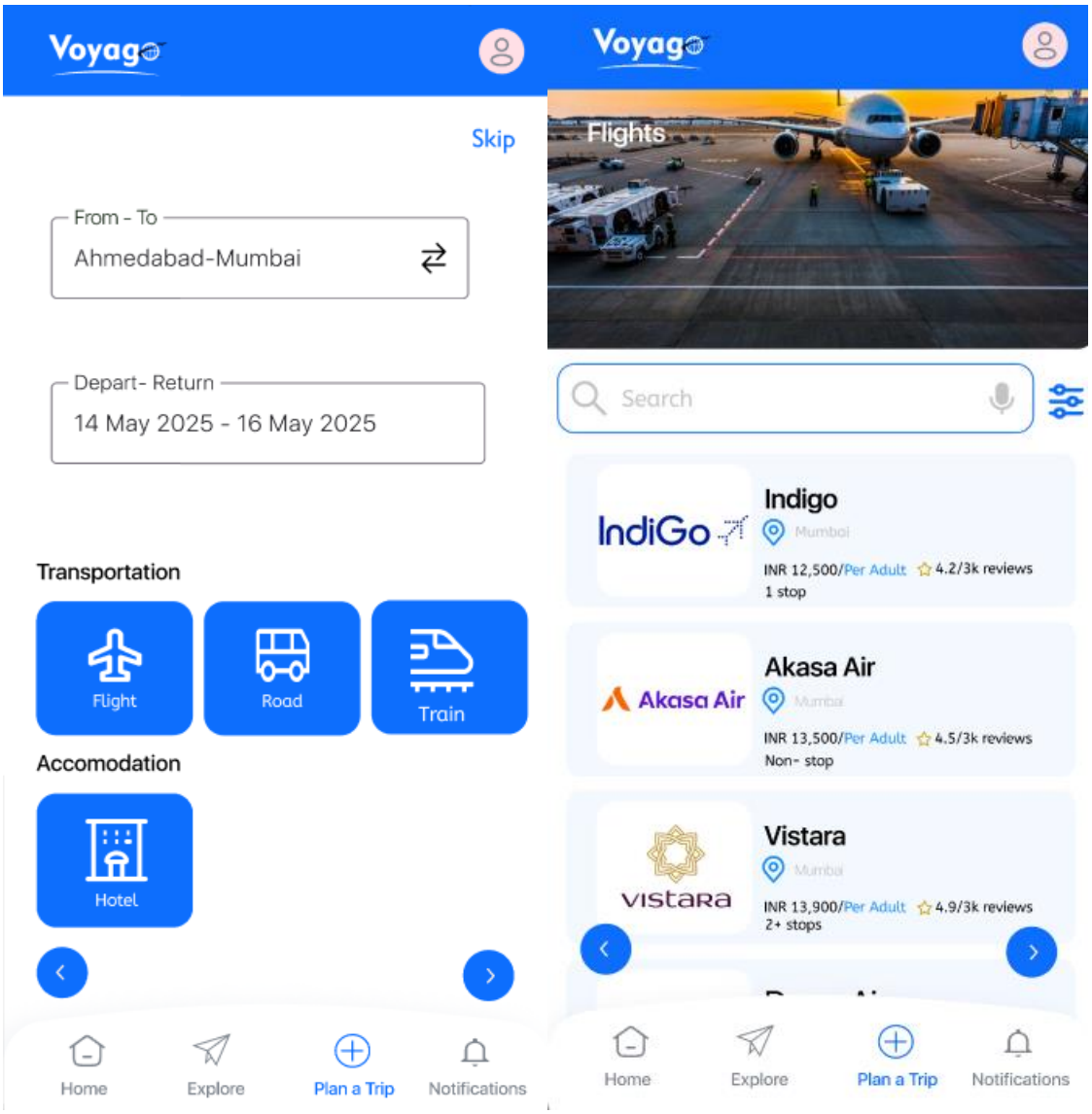


- **Number of Persons**: Users can input the number of travelers to get suitable recommendations for accommodations and transportation.

- **List of Hotels**: Displays available accommodations filtered by type, showing prices, reviews, and amenities.



- **Room Selection & Booking**: Users can select and book rooms directly within the app.
- **Transportation Details**: Provides options for flights, trains, and buses, showing schedules, pricing, and availability.


Voyago
Skip
From - To
Ahmedabad-Mumbai
Depart- Return
14 May 2025 - 16 May 2025
Transportation
Flight
Road
Train
Accomodation
Hotel
Home
Explore
Plan a Trip
Notifications
Voyago
Flights
Search
Indigo
Mumbai
INR 12,500/Per Adult
4.2/3k reviews
1 stop
Akasa Air
Mumbai
INR 13,500/Per Adult
4.5/3k reviews
Non- stop
Vistara
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INR 13,900/Per Adult
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Home
Explore
Plan a Trip
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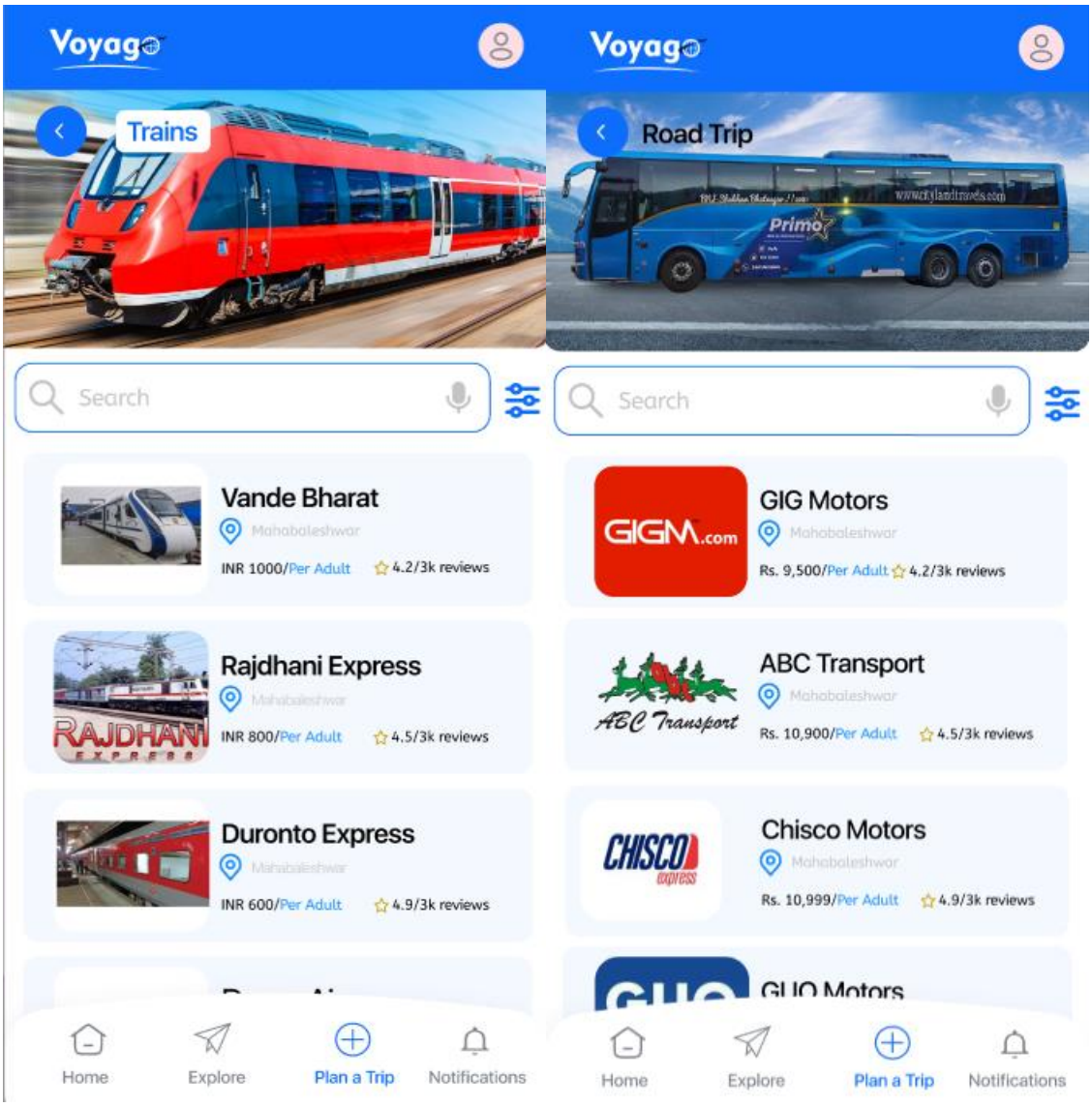


Additional Features

- **Notifications & Alerts**: Sends push notifications for bookings, reminders, and offers.
- **User-Friendly Interface**: Ensures smooth navigation and usability across all modules.
- **Payment Integration**: Allows seamless payments for bookings directly through the app.
- **Real-Time Data Integration**: Provides users with updates on weather, local events, and travel advisories to enhance decision-making.

HCI Principles and Their Implementation

By integrating HCI principles such as usability, aesthetics, and efficiency, the travel-based application ensures a cohesive, intuitive, and engaging user experience. The app makes it easy for users to explore destinations, plan their trips, and make bookings, all while adhering to core HCI principles. Below is a comprehensive list of features implementing the HCI principles: Visibility, Consistency, Affordances, Signifiers, Mapping, and Constraints.

1. Visibility Definition: Ensuring that key elements are perceptible and relevant information is accessible.

Implemented Features:

• Navigation Bar:

o The navigation bar is prominently displayed at the top of the app, with clear and recognizable icons (e.g., home, search, profile). This allows users to quickly access core sections of the app without searching for the navigation elements.

• Booking Buttons:

o The "Book Now" buttons are placed strategically across the app, using bold colors (like green) to indicate actionable items. The buttons are large enough to be easily tapped, improving visibility for users across different devices.

2. Consistency Definition: Maintaining uniform patterns and design elements across the interface for a seamless user experience.

Implemented Features:

• Page Layouts:

o The layout remains consistent across all screens. For instance, the header and footer are the same, ensuring users know where to find navigation and information.

Button Placement:

o Action buttons such as "Confirm Booking" or "View Details" are consistently placed in the same location on each page (e.g., at the bottom). This predictability reduces cognitive load for users, helping them navigate the app effortlessly.

• Color Scheme:

o The app uses a consistent color palette, primarily relying on shades of blue and green for primary actions (buttons), and neutral colors for text and backgrounds, enhancing visual consistency.

3. Affordances Definition: The perceived properties of an element that suggest how it should be used.

Implemented Features:

• Interactive Elements:

o Buttons: The buttons are large and have subtle shading to suggest they can be pressed. For example, "Book Now" buttons are raised with a shadow effect, signaling their interactive nature.

o Map: The interactive map feature allows users to tap on different locations to explore destinations. The map icons are designed to look like clickable buttons, and the cursor changes to a hand on hover, signaling interactivity.

4. Signifiers Definition: Cues in the interface that guide users toward actionable elements.

Implemented Features:

• Search Bar:

o The search bar has a magnifying glass icon, a universal signifier for the search function. Placeholder text ("Search Destinations...") inside the bar further clarifies its purpose.

• Icons:

o Each destination and feature page uses familiar icons (e.g., airplane for flights, suitcase for accommodations), making it easier for users to recognize actions or sections. These icons act as signifiers to guide users to the right content.

• Hover Effects:

o Interactive elements like links and buttons change appearance when hovered over, providing users with clear visual feedback that these elements are clickable.

5. Mapping Definition: The relationship between controls and their effects in the interface.

Implemented Features:

• Control and Result Linkage:

o When users select a destination, the app displays a filtered list of available accommodations and transport options based on their choice. This direct mapping between destination selection and the displayed results makes the app intuitive to use.

• Navigation Flow:

o Tapping the "Plan My Trip" button directly takes users to the itinerary planning section. The control (the button) and the outcome (a new screen with planning tools) are directly linked, simplifying user interaction.

• Sorting Filters:

o The sorting options for accommodations (e.g., by price, rating) directly map to changes in the displayed results. Users can instantly see how their filters impact the list of available options.

6. Constraints Definition: Limiting possible user interactions to prevent errors.

Implemented Features:

• Input Validation:

o The app restricts certain user inputs to prevent errors. For instance, the date picker only allows users to select future travel dates, preventing them from selecting past dates.

o Booking Confirmation:

♣ The "Confirm Booking" button is disabled until all required fields (e.g., date, number of guests) are filled in, ensuring that the user doesn't proceed without completing necessary information.

• Navigation Limitations:

o The app prevents users from attempting to book a destination without selecting at least one accommodation or transportation option, reducing the likelihood of incomplete or erroneous bookings.

o Similarly, users cannot proceed with a booking if payment details are not entered, ensuring smooth transaction processing.

Login/Signup Module:

Plan 0: Log In or Sign Up

Plan 1: Log In

1.1 Enter email/username and password.
1.2 Click the "Log-in" button.
1.3 Authenticate credentials.
1.4 Handle errors if login fails.

Plan 2: Sign Up

2.1 Enter required details (name, email, phone, password).
2.2 Accept terms and conditions.
2.3 Verify email/phone number.
2.4 Complete sign-up.

Plan 3: Forgot Password

3.1 Enter email/phone number for recovery.
3.2 Receive reset code.
3.3 Enter code to reset password.

Plan Constraints:

- Plan 0: Do either Plan 1 or Plan 2.
- Plan 1: Do 1.1-1.4.
- Plan 2: Do 2.1-2.4.
- Plan 3: Do 3.1-3.3, if applicable.

Home Page Module:

Plan 0: Navigate the Home Page

Plan 1: View popular and themed destinations

1.1 Scroll through popular destinations.
1.2 Click a destination for more details.
1.3 View themed destinations (adventure, family, romantic).
1.4 Explore selected themes.

Plan 2: Browse travel inspiration

2.1 View travel inspiration categories.
2.2 Click an inspiration to see details.

Plan 3: Access Plan a Trip

3.1 Click the Plan a Trip button.

Plan 4: Access Explore Destination Page

4.2 Click the Explore Destination button.

Plan Constraints:

- Plan 0: Do Plan 1, then either Plan 2 or Plan 3.
- Plan 1: Do 1.1-1.4.
- Plan 2: Do 2.1-2.2.
- Plan 3: Do either 3.1 or 3.2.

Explore Destination Module:

Plan 0: Explore Destinations

Plan 1: Use Interactive Map

1.1 Click on points of interest on the map.
1.2 Click on the markers to preview destinations.
1.2.1 View basic destination information.

Plan 2: Search destinations using Filters

2.1 Enter destination name in the search bar.
2.2 Open the filter menu.
2.2.1 Select filter options based on preferences.(Budget, Activities, Weather preferences, Type of trip, Duration)
2.3 View filtered results.

Plan 3: Sort destination options.

3.1 Select a sorting criterion (Popularity, Price, Ratings).

Plan 4: View themed and popular destinations

4.1 Select a theme (Adventure, Family, Romantic).
4.2 View destinations under the selected theme.
4.3 View popular destinations filtered by ratings/visits.

Plan 5: Add the destination to favourites

Plan Constraints:

- Plan 0: Do Plan 1, then Plan 2, Plan 3, Plan 4.Plan 5 if necessary.
- Plan 1: Do 1.1-1.2.
- Plan 2: Do 2.1-2.3.
- Plan 3: Do 3.1
- Plan 4: Do 4.1-4.3.

Plan a Trip Module:

Plan 0: Plan the trip

Plan 1: Search for Destination

1.1 Enter the destination in the search bar.

1.2 View destination suggestions (auto-complete or dropdown).

1.3 Select from the map displayed.

1.4 Select a destination.

Plan 2: Select Travel Dates

2.1 Open the calendar widget.

2.2 Choose start and end dates.

Plan 3: Select Number of Persons

3.1 Enter the number of persons traveling.

Plan 4: Choose a Travel Package

4.1 View two options: Standard (verified by OYO, MakeMyTrip) or Local Recommendations.

4.2 Select Standard Package.

4.3 Select Local Recommended Package.

Plan 5: Select Local Experiences

5.1 View cultural activities, local food spots, and special experiences.

5.2 Add to Itinerary.

5.3 Skip.

Plan 6: Select Accommodation

6.1 View suggested places where hotels are needed (based on the fixed travel path).

6.2 Choose accommodation type (premium, average, budget-friendly).

6.3 View a list of hotels with available rooms and prices.

6.4 Select the number of rooms (Minimum no. of rooms to be selected would be ceil(no. of persons/2)).

6.5 Add more hotels.

6.6 Skip.

Plan 7: Confirm Booking

7.1 Review all selected accommodations.

7.2 Confirm the booking.

7.3 Display "Booking Successful" message.

Plan 8: Select Transportation Options

8.1 Choose train.

8.2 Choose flight.

8.3 Choose by road.

- 8.3.1 Select the company.
- 8.3.2 Select no. of cars.

8.4 Confirm the transportation booking.

8.5 Display "Booking Successful" message.

Plan 9: Review Emergency Information and Contacts

9.1 View emergency contacts for the destination.

9.2 Review health alerts, local advisories, etc.

Plan 10: Access FAQs and Customer Support

10.1 Browse FAQs.

10.2 Access customer support contact options.

Plan Constraints:

- Plan 0: Do 1-2-3-4-5-6-7-8-9-10.
- Plan 1: Do either 1.1 - 1.2 or 1.3 and then 1.4.
- Plan 2: Do 2.1 - 2.2.
- Plan 3: Do 3.1.
- Plan 4: Do 4.1 then either do 4.2 or 4.3.
- Plan 5: Do 5.1, then do either 5.2 or 5.3.
- Plan 6: Do 6.1 - 6.2 - 6.3 - 6.4 in that order, then do either 6.5 or 6.6.
    - Plan 6.5: Do 6.1 - 6.2 - 6.3 - 6.4 in that order, then do either 6.5 or 6.6

- Plan 7: Do 7.1-7.2-7.3.
- Plan 8: Do either 8.1, 8.2, or 8.3.1-8.3.2, and then do 8.4-8.5.
- Plan 9: Do 9.1-9.2.
- Plan 10: Do 10.1-10.2.

User Profile Module:

Plan 0: Make and Manage User Profile

Plan 1: Make User Profile

Plan 1.1: Enter Personal Profile Details

1.1.1 Enter Profile Name
1.1.2 Enter Gender and Age
1.1.3 Enter Contact Info
1.1.3.1 Enter Phone No.
1.1.3.2 Enter E-Mail Address

Plan 1.2: Fill Travel Details

1.2.1 Enter Profile Name
1.2.2 Enter Gender and Age
1.2.3 Enter Travel Interests
1.2.3.1 Enter hobbies of interest for tour, for e.g., Extreme Sports, Sightseeing, Relaxing, etc.
1.2.3.2 Enter destination features you prefer, for e.g., Hill Stations, Coasts, etc.
1.2.3.3 Enter if you prefer Individual Trips, Family Trips, Trips with Friends, etc.

Plan 2: Manage User Profile

Plan 2.1: Edit Personal Details

2.1.1 Click "Edit Profile."
2.1.2 Update name, email, phone, etc.
2.1.3 Save changes.

Plan 2.2: View and Manage Travel History

2.2.1 View past trips with dates and destinations.
2.2.2 Click to see trip details.

Plan 2.3: Manage Saved/Favourite Destinations

2.3.1 View saved destinations.
2.3.2 Click a destination to see details.
2.3.3 Add or remove from favorites.

Plan 2.4: Edit the Set Preferences

2.4.1 Edit the preferred themes (e.g., Adventure).
2.4.2 Reset language, budget, etc.

Plan 2.5: Emergency SOS

2.5.1 Click the SOS button.
2.5.2 Connect with local emergency services.

Plan Constraints:

- Plan 0: Do either Plan 1 or Plan 2.
- Plan 1: Do Plans 1.1-1.2 in sequence.
    - Plan 1.1: Do 1.1.1-1.1.3.
        - Plan 1.1.3: Do 1.1.3.1-1.1.3.2.
    - Plan 1.2: Do 1.2.1-1.2.3.
        - Plan 1.2.3: Do 1.2.3.1-1.2.3.3.
- Plan 2: Do Plans 2.1-2.5 in sequence.
    - Plan 2.1: Do 2.1.1-2.1.3.
    - Plan 2.2: Do 2.2.1-2.2.2.
    - Plan 2.3: Do 2.3.1-2.3.3.
    - Plan 2.4: Do 2.4.1-2.4.2.
    - Plan 2.5: Do 2.5.1-2.5.2.

Evaluation

Three main factors were considered when evaluating the travel-based application: usability, efficiency, and user satisfaction. These standards were selected to evaluate how well the application satisfies user needs, how fast users can complete tasks, and how enjoyable the user experience is in general.

A variety of techniques were used to collect feedback, such as surveys, user testing, and in person observation. The purpose of this assessment was to determine the application's advantages as well as potential areas for development to enhance the user experience.

Strengths:

1. User-friendly Navigation - The app features an intuitive layout, making it easy for users to navigate between sections like searching, planning, and booking.

Key features include:

o Clear menu system for effortless movement between modules.

o Consistent navigation bars across screens.

o Visual indicators (e.g., active button highlights) help users stay oriented. Users found the structure straightforward and accessible, reducing the learning curve.

o Forgot Password: Users who forget their login credentials can easily recover access to their account by:

- Entering their registered email or phone number.
- Receiving a secure OTP or reset link.
- Resetting their password to regain access without creating a new account.

2. Personalized Recommendations - The app delivers tailored recommendations based - on user behaviour, offering:

Suggestions based on past searches, bookings, and preferences.

o Contextual recommendations for activities (e.g., adventure tours for adventure enthusiasts).

o Location-based suggestions for nearby attractions and services. Users appreciated the app's ability to understand their preferences, making it more engaging and efficient.

2. Consistent Design Elements - The app maintains visual and functional consistency, which helped users quickly familiarize themselves with the interface.

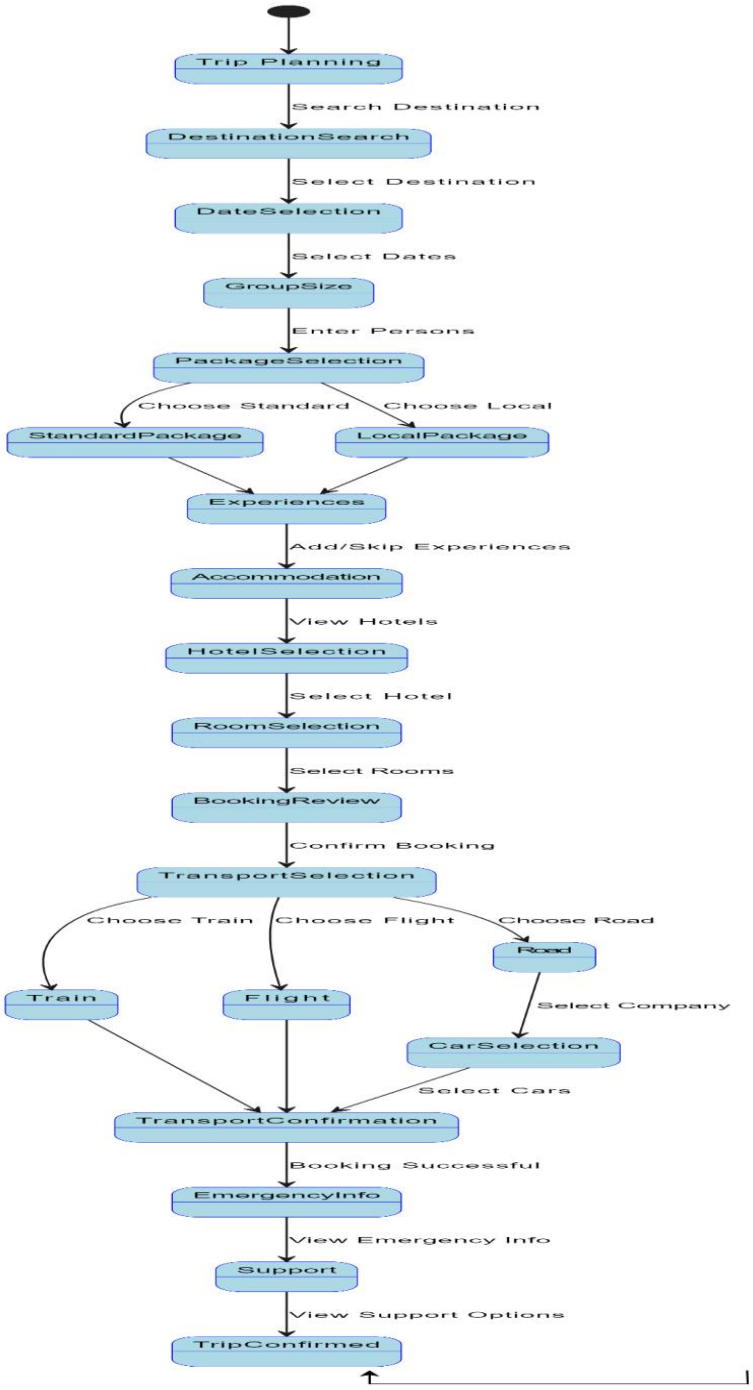
Key aspects include:

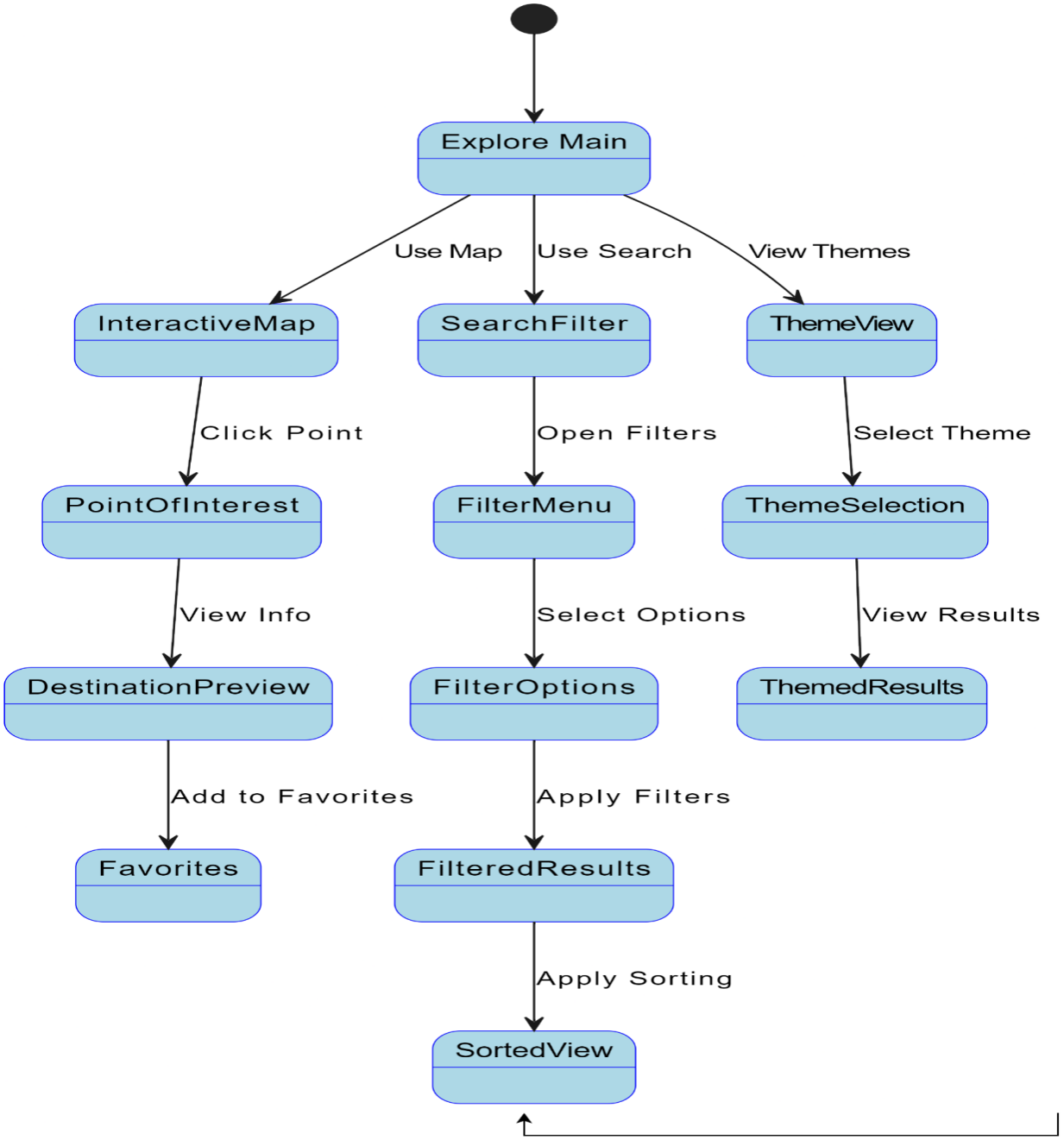
o Uniform layout, colors, fonts, and button styles.

o Predictable interactions with consistent buttons and icons.

o Reusable UI components across the app. The consistency made the app feel professional and trustworthy.

STATE NETWORK DIAGRAMS

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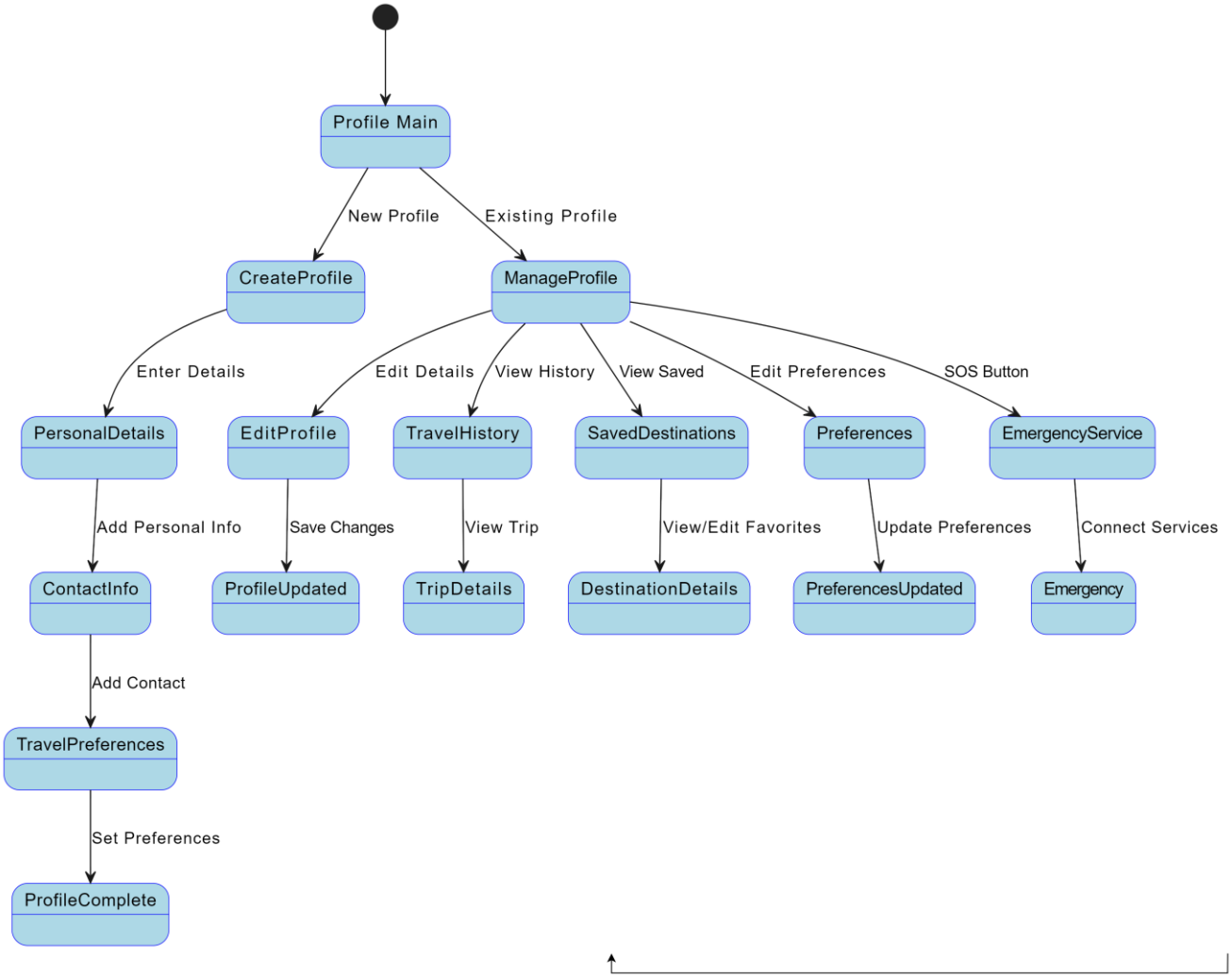
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View/Edit Favorites
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Connect Services
ContactInfo
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DestinationDetails
PreferencesUpdated
Emergency
Add Contact
TravelPreferences
Set Preferences
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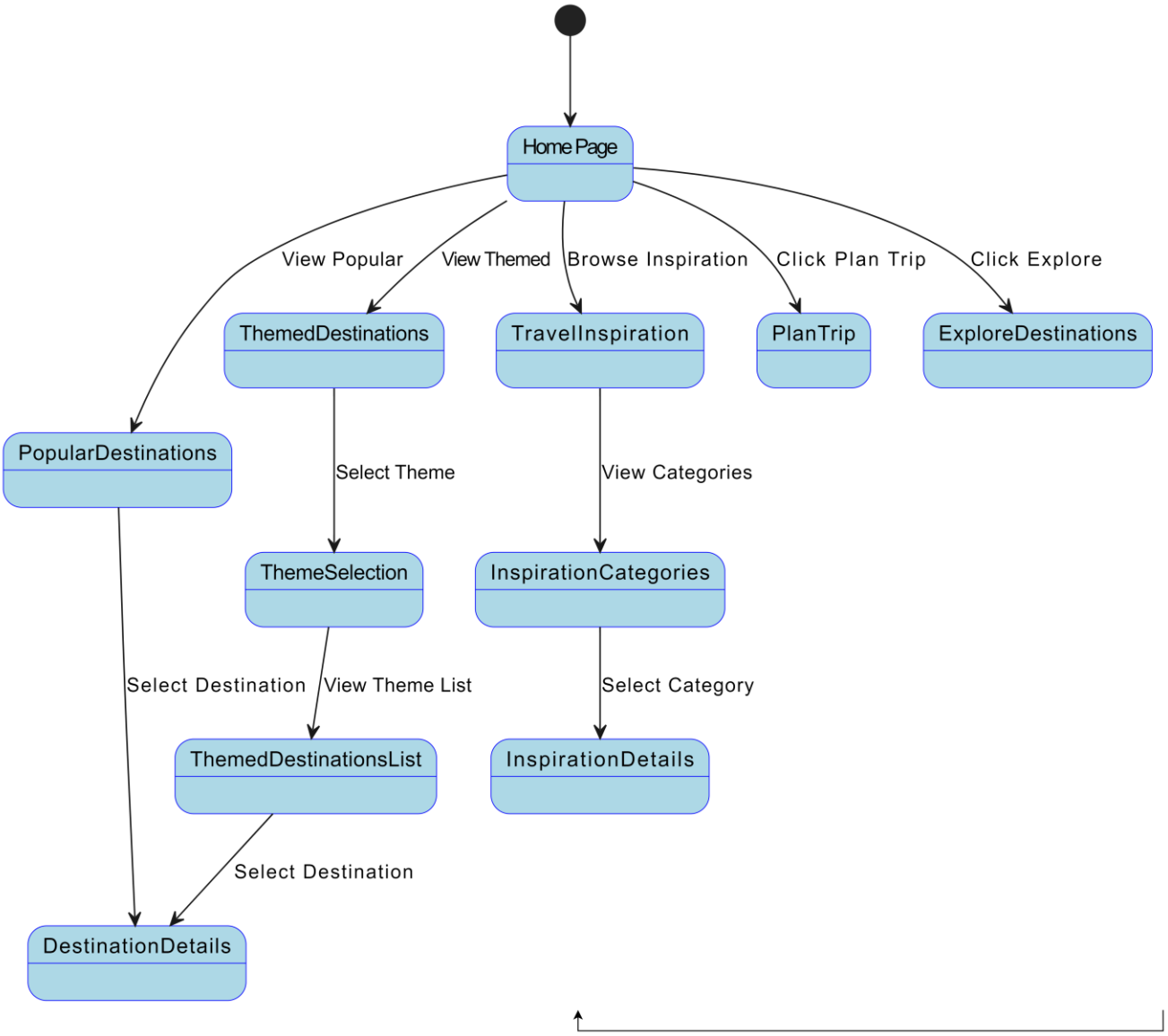
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View Popular
View Themed
Browse Inspiration
Click Plan Trip
Click Explore
ThemedDestinations
TravelInspiration
PlanTrip
ExploreDestinations
PopularDestinations
Select Theme
View Categories
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Select Destination
View Theme List
Select Category
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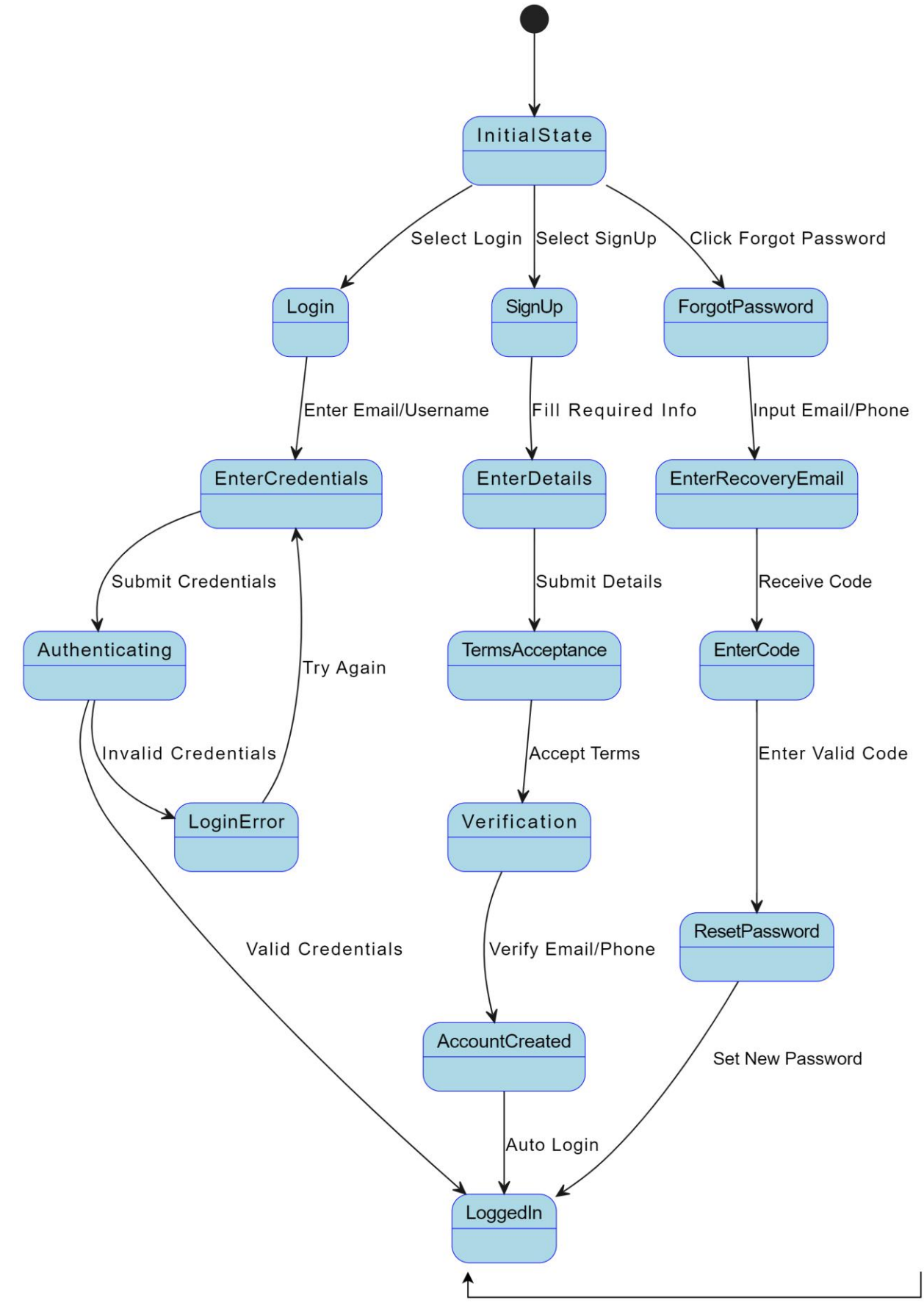
DestinationDetails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Select Login
Select SignUp
Click Forgot Password
Login
SignUp
ForgotPassword
Enter Email/Username
Fill Required Info
Input Email/Phone
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Submit Details
Receive Code
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TermsAcceptance
EnterCode
Try Again
Invalid Credentials
Accept Terms
Enter Valid Code
LoginError
Verification
ResetPassword
Valid Credentials
Verify Email/Phone
AccountCreated
Set New Password
Auto Login
LoggedIn

Future Enhancements:

1. Integrating AI-driven Suggestions –

Future improvements could involve AI to further personalize recommendations:

o AI-based trip planning to suggest entire itineraries based on user preferences and behavior.

o Predictive search to show relevant destinations as users type.

2. Optimizing for Mobile Interfaces –

To further improve the mobile experience, future optimizations could include:

o Touch optimization for smooth interactions (e.g., swiping through options).

o Adaptive UI for seamless use across devices and screen sizes.

o Offline functionality to allow users to access itineraries and saved destinations without an internet connection.

o Streamlined mobile navigation for easy access to key features without clutter.

Video Demonstration

The implementation video offers a detailed walkthrough of the **Travel-Based Application**, showcasing its core features and seamless functionality. It highlights the smooth interaction between the different modules, including user profiles, destination exploration, and trip planning.

Watch the project implementation video here

This video effectively demonstrates the system's usability, efficiency, and the dynamic interface designed to meet user needs.

Conclusion

The travel-based application effectively integrates HCI principles to provide a cohesive and intuitive user experience. By focusing on usability, efficiency, and satisfaction, the app streamlines the travel planning process, making it easier for users to discover destinations, plan trips, and make bookings. Through iterative design and testing, the application has been refined to meet the needs of modern travelers, offering personalized recommendations, smooth navigation, and a visually appealing interface. These efforts result in enhanced user satisfaction, ensuring that users have a positive and efficient experience, encouraging them to continue using the app for their future travel needs.

Future Plan

Mobile App: Develop a dedicated mobile version of the travel application to enhance accessibility and cater to users who rely on smartphones for trip planning. This will provide a seamless experience on both Android and iOS platforms, ensuring broader reach and usability.

Multi-Hospital Support: Expand the app to enable users to plan and manage trips across multiple destinations in one itinerary. This feature will allow travelers to create complex travel plans with ease, including multi-city bookings for accommodations and transport.

Location Services: Integrate advanced location-based features to help users find nearby attractions, hotels, and transportation options. This will include GPS-enabled recommendations for restaurants, activities, and emergency services, ensuring a personalized and context-aware experience.