"TravelPlannerApp"
Second year Mini Project Report

Submitted in partial fulfilment of the requirements of

the degree

BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING

By

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(AY 2023-24)

CERTIFICATE

This is to certify that the Mini Project entitled **" TravelPlannerApp "** is a bonafide work of **Toshit Hole(28)** submitted to the University of Mumbai in partial fulfilment of the requirement for the award of the degree of **"Bachelor of Engineering"** in **"Computer Engineering"** .

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Supervisor

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Head of Department   Principal

Mini Project Approval

This Mini Project entitled **"TravelPlannerApp"** by **Toshit Hole(28), Shreyas Bagwe(05),Subodh Thalkari(62),Jatin Hargunani(27),Ravina Vartak(68)** is approved for the degree of **Bachelor of Engineering** in **Computer Engineering.**

Examiners

1…………………………………
(Internal Examiner Name & Sign)

2…………………………………
(External Examiner name & Sign)

Date:

Place:

Contents

1.1   Introduction

The Travel Planner App is a comprehensive mobile application designed to simplify and enhance the travel planning experience. Built using Android for the front-end and Node.js, Express.js, and MongoDB for the back-end and flask for api integration. This project offers a user-friendly platform to help travellers plan their trips with ease. From AI itinerary management to exploring destinations, our app ensures that users can organise their travel plans efficiently and make the most out of their adventures. With a robust back-end supporting the app's functionality, travellers can access valuable information and personalised recommendations, making their journey memorable and stress-free.

1.2   Motivation

Our motivation stems from the belief that travel should be an adventure, not a source of stress. We are inspired to offer a solution that provides valuable insights, personalised recommendations, and organisation tools to make travel planning enjoyable and hassle-free. With the Travel Planner App, we hope to help travellers to create unforgettable memories.

1.3   Problem Statement & Objectives

Problem Statement:

Many travellers struggle with the complexities of trip planning, often facing challenges such as fragmented information, lack of personalization, and disorganisation in managing their itineraries. There is a need for a streamlined and user-friendly solution to make travel planning more efficient and enjoyable.

Objectives:

1. Develop a mobile app for Android that simplifies the process of planning and managing trips.

2. Create a back-end system using Node.js, Express.js, and MongoDB to support the app's functionality.

3. Offer users a platform to easily access and organise travel information, including itinerary details,weather updates, and flight and hotel recommendations and many more.

4. Provide a seamless and intuitive user experience for travellers to plan and document their journeys.

1.4   Organization of the Report:

1.Survey of Existing System

2.Limitations of Existing System or Research Gap

3.Mini Project Contribution

4.Introduction for Proposed System

5.Architecture and Framework

6.Algorithm and Process Design

7.Details of Hardware and Software

8.Experiment Results

9.Conclusion

10.References

2   Literature Survey

2.1   Survey of Existing System

Name of Research Paper	Reference	Summary of Research paper
Privacy and Security in Mobile Health (mHealth) Research	Studies, such as "Privacy and Security in Mobile Health (mHealth) Research" by Agaku et al. (2012) and discussions about GDPR implications for mobile apps by Lodder and Koot (2017), highlight the need for robust security measures to protect user data. Understanding these considerations is crucial for ensuring the app complies with data privacy regulations and user trust.	The research paper "Privacy and Security in Mobile Health (mHealth) Research" by Agaku et al. (2012), along with discussions on GDPR implications for mobile apps by Lodder and Koot (2017), underscores the critical importance of implementing strong security measures to safeguard user data. This emphasis on security is essential for ensuring that mobile apps adhere to data privacy regulations and build user trust.
Advantages of real-time weather information for travellers	Studies by Sauter et al. (2014) and Go et al. (2016) discuss the advantages of real-time weather information for travellers and its impact on travel decisions. Additionally, the integration of hotel APIs to streamline booking processes and improve user experience, as explored by Liu et al. (2018), provides valuable insights into the project's goals.	Real-time weather information offers numerous advantages for travellers. It enables them to make informed decisions about their journeys, such as choosing the most suitable travel times and routes. This information can also aid in planning for unexpected weather-related disruptions and adjusting travel plans accordingly.
Creating an intuitive and	Studies by Morrison and Miller	The studies conducted by

Name of Research Paper	Reference	Summary of Research paper
Privacy and Security in Mobile Health (mHealth) Research	Studies, such as "Privacy and Security in Mobile Health (mHealth) Research" by Agaku et al. (2012) and discussions about GDPR implications for mobile apps by Lodder and Koot (2017), highlight the need for robust security measures to protect user data. Understanding these considerations is crucial for ensuring the app complies with data privacy regulations and user trust.	The research paper "Privacy and Security in Mobile Health (mHealth) Research" by Agaku et al. (2012), along with discussions on GDPR implications for mobile apps by Lodder and Koot (2017), underscores the critical importance of implementing strong security measures to safeguard user data. This emphasis on security is essential for ensuring that mobile apps adhere to data privacy regulations and build user trust.
efficient travel planning app.	(2002) and Xiang et al. (2017) emphasise the challenges travellers face during planning and the significance of user-friendly apps in enhancing the travel experience. These findings underscore the importance of creating an intuitive and efficient travel planning app**.**	Morrison and Millar in 2002 and Xiang et al. in 2017 highlight the challenges travellers encounter during the planning phase of their journeys. They emphasise the pivotal role of user-friendly mobile applications in improving the overall travel experience. These findings underscore the critical significance of developing a travel planning app that is intuitive and efficient.

2.2   Limitation of Existing system or research gap

The current landscape of travel planning applications demonstrates several limitations:

1.Fragmented Information: Existing apps often provide fragmented information about travel destinations, making it challenging for users to access comprehensive insights in one place.

2.Limited Personalization: Many apps lack effective personalization features, failing to tailor recommendations to users' unique preferences and interests.

3.Complex Interfaces: The user interfaces of some travel planning apps can be overwhelming, contributing to user frustration and reduced efficiency.

2.3 Mini Project Contribution

In this mini-project, we will develop a proof-of-concept for a critical component of the Travel Planner App. Our focus will be on creating a user-friendly Android front-end interface that allows travellers to access essential travel information, explore destinations, and manage their itineraries seamlessly. By achieving this milestone, we will demonstrate the viability of our project and set the foundation for further development and integration with the back-end server. This mini-project contribution represents a significant step toward realising the vision of making travel planning more efficient and enjoyable for users.

3 Proposed System (eg New Approach of Data Summarization)

3.1 Introduction -

The Travel Planner App is a mobile application designed to simplify and enhance the travel planning experience for users. This app aims to provide a user-friendly platform for creating, organising, and managing travel itineraries. Users can easily discover flights, hotels, and activities while receiving real-time weather updates.Users can plan their trip using AI Itinerary according to their budget.Also,they can take help from the predictive ML model for prediction of budget of accommodation based on any city and no of stay days.

3.2 Architecture/ Framework -

The Travel Planner App adopts a client-server architecture, with Android Studio and Node.js as the core technologies.

- **Client Side (Android Studio):**The mobile app is developed using Android Studio, utilising Java for Android app development. It provides a visually appealing and user-friendly interface, ensuring a seamless experience for travellers.
- **Server Side (Node.js,Express.js,Mongodb):** The backend logic and APIs are built using Node.js, a versatile and efficient runtime environment. Node.js facilitates real-time communication and data processing, allowing for secure user authentication, database interaction, and integration with external travel-related APIs.
- **API Integration:**We have created our custom APIs using flask for reducing the dependency of app on third party platforms.

FrameWork:
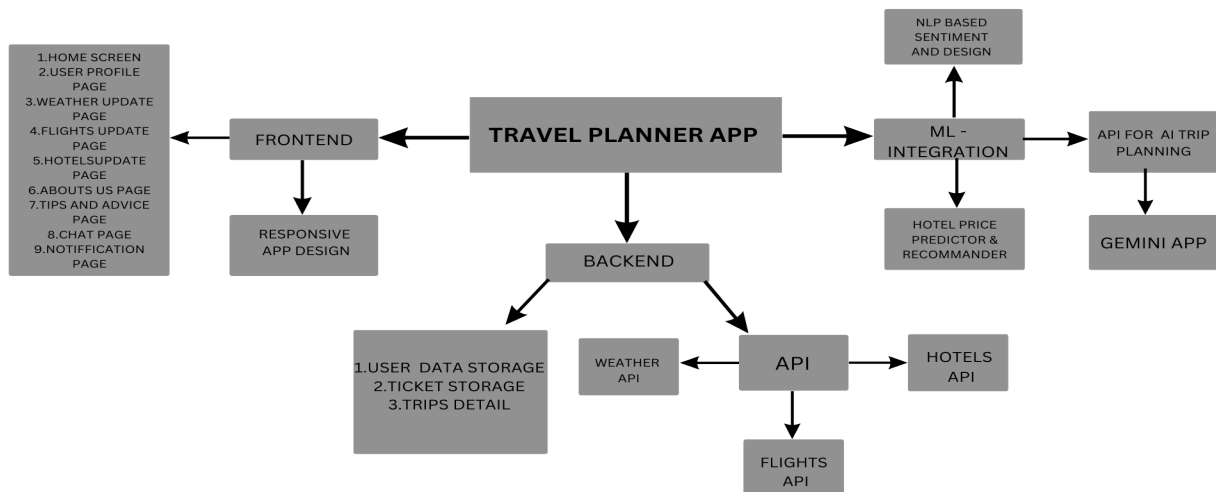
3.3 Algorithm and Process Design -

1. App Initialization

- Initialise the Android app and set up the main activity.
- Define the layout and design elements for the user interface.

2. User Authentication (Login and Signup):

- Create the login and signup pages for user authentication.
- Implement user registration functionality with validation.
- Store user data securely in a database.
- Implement user login functionality with authentication.
- Use secure tokens or sessions to manage user sessions.

3. Home Screen:

- Develop the app's home screen with an attractive theme.
- Provide navigation options for users.

4. Trips Page:

- Create a Trips page for users to check their upcoming trips.
- Integrate with a weather API (e.g., OpenWeatherMap) to fetch weather data.
- Display the weather information for the selected location and date.
- Display the trip mates for the trip

5. Travel Planning

- Implement travel planning features.
- Allow users to create trips and add trip mates.

- Include options for creating AI generated travel itineraries within the budget.
- Enable users to receive the AI generated trip plan on their email..

6.Community Interaction:

- Integrating websockets for community interaction so that users in the same trip can be added in the group for chatting purposes.
- Implement functionality for users to send media in the chat.

7.NLP-Based Sentiment Analyzer:

- Create suggestion page for the users who want to add their suggestion regarding any relevant tag of any city or location(E.g Health of Mumbai)
- Analysing the sentiments of the suggestion posted by the user.

8.Accomodation Budget Prediction Model:

- Scrap the dataset for accommodation containing the information such as city_name,price and no_of_staying days.
- Creating a ML model for price prediction purposes.
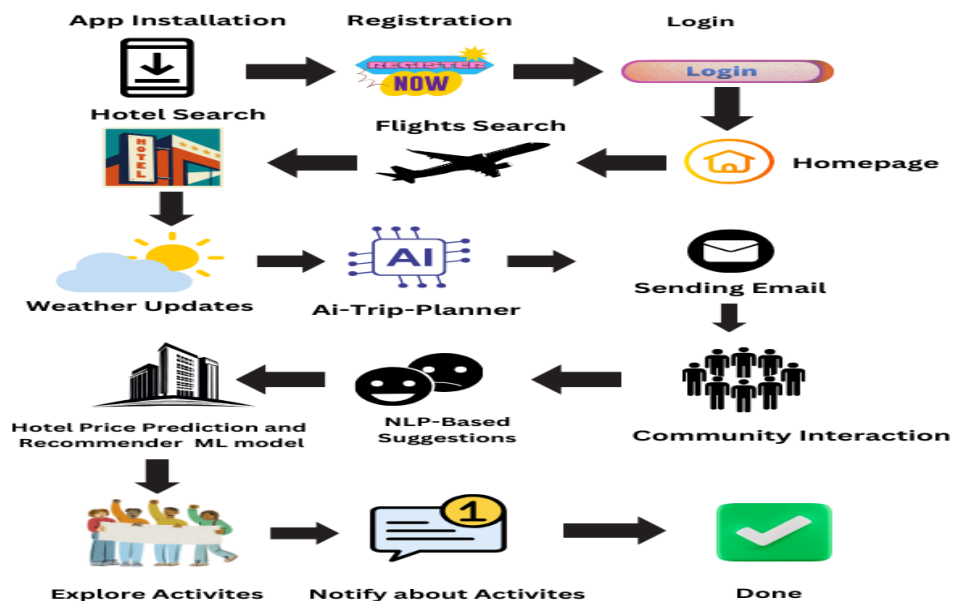
3.4   Details of Hardware & Software -

- **Hardware Requirements:** A variety of Android smartphones and tablets for testing the app on different screen sizes and resolutions, ensuring optimal performance and compatibility across various devices.USB cables for connecting the development server to testing devices, facilitating the deployment of app builds and debugging processes directly on physical devices.

- **Software Requirements**: Key software components include Android Studio for app development, Node.js,Express.js for server logic, and database system like

MongoDB for data storage. It also includes use of Flask for integration of custom API and python for creating a ML and NLP model.
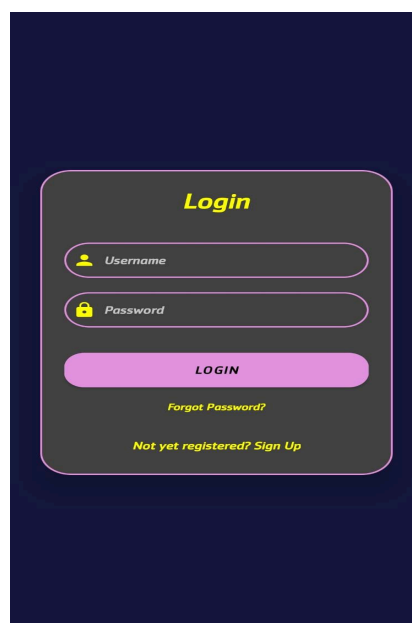
3.5   Experiment and Results :

- Working of custom API,flight and hotel API is tested thoroughly.
- ML and NLP models are tested to avoid the condition of overfitting the data.
- The app's performance, usability, and security are thoroughly tested.
- User feedback and testing results are collected to refine the app.
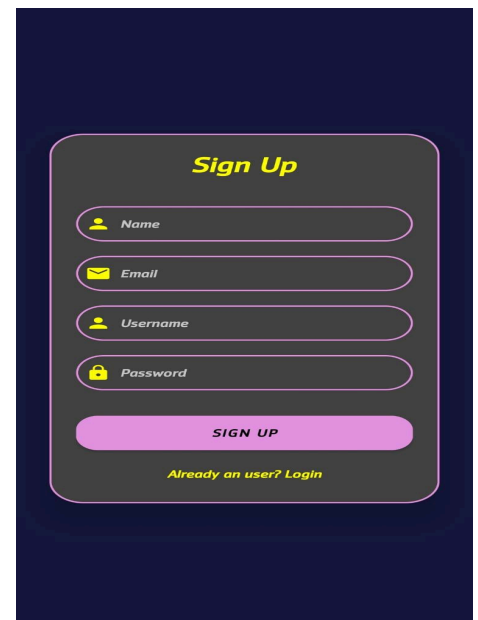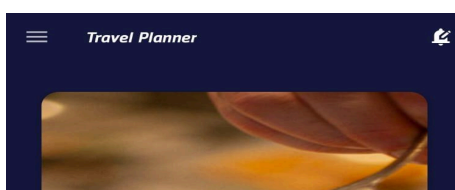
- **RESULTS -**
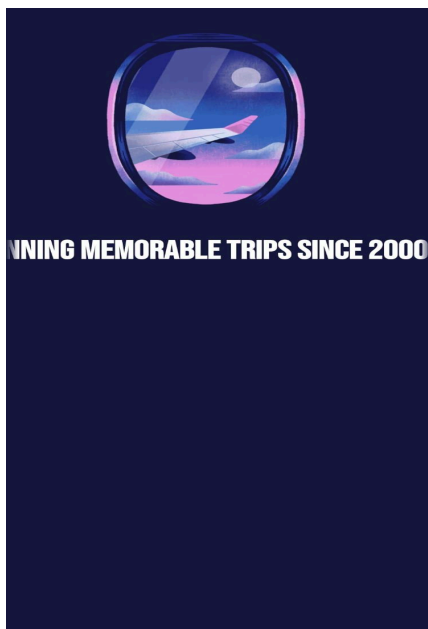
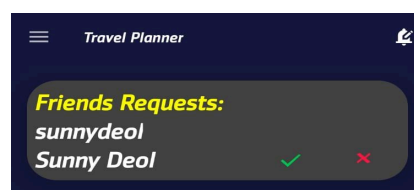**Landing Page:**   **Login Page:**   **Signup Page:**

Home Page: **Notifications Page:**   **MyTrips Page:**
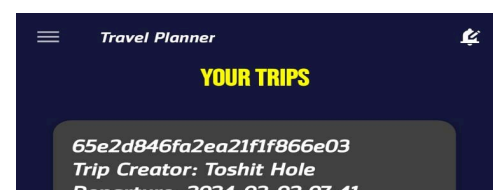
Add a Trip Page:

Departure Date: YYYY-MM-DD
Return Date: YYYY-MM-DD
Departure Time: HH:MM
Arrival City:

Arrival City

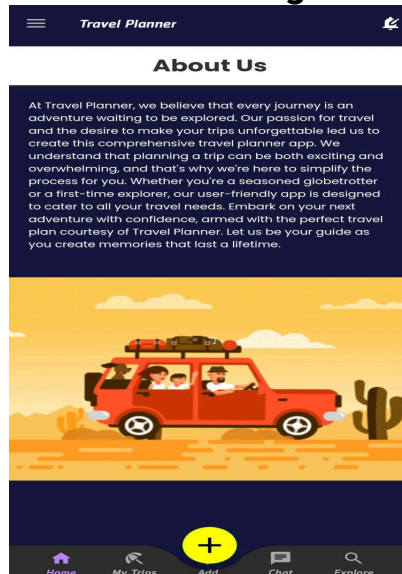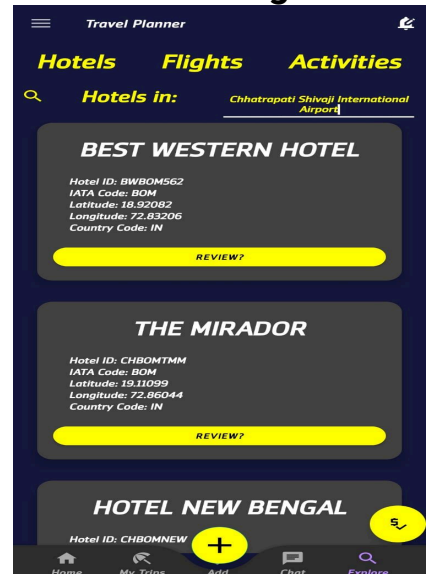**Trip Mates**

Add Friends

PICK A TICKET

🏠 Home | 🧭 My Trips | ➕ Add | 💬 Chat | 🔍 Explore

About Us Page:

About Us

At Travel Planner, we believe that every journey is an adventure waiting to be explored. Our passion for travel and the desire to make your trips unforgettable led us to create this comprehensive travel planner app. We understand that planning a trip can be both exciting and overwhelming, and that's why we're here to simplify the process for you. Whether you're a seasoned globetrotter or a first-time explorer, our user-friendly app is designed to cater to all your travel needs. Embark on your next adventure with confidence, armed with the perfect travel plan courtesy of Travel Planner. Let us be your guide as you create memories that last a lifetime.

🏠 Home | 🧭 My Trips | ➕ Add | 💬 Chat | 🔍 Explore

Activities Page:

Hotels   **Flights**   **Activities**

🔍   **Hotels in:**   Chhatrapati Shivaji International Airport

BEST WESTERN HOTEL

Hotel ID: BWBOM562
IATA Code: BOM
Latitude: 18.92082
Longitude: 72.83206
Country Code: IN

REVIEW?

THE MIRADOR

Hotel ID: CHBOMTMM
IATA Code: BOM
Latitude: 19.11099
Longitude: 72.86044
Country Code: IN

REVIEW?

HOTEL NEW BENGAL

Hotel ID: CHBOMNEW

🏠 Home | 🧭 My Trips | ➕ Add | 💬 Chat | 🔍 Explore

Find a Friend Page:

🔍   Search for users

Friends   🔍 Search for friends

👤   Jatin Hargunani
jatihh

👤   Shreyas Bagwe
shreyasb

Trips   🔍 Search for trips

🧭   65e2d846fa2ea21f1f866e03
Mumbai   👤 Toshit Hole

Suggestion Page:

🔍   Health and Safety Information   pune

Health and Safety Information   **Pune**   **India**

Pune hotels are very dirty. The customer service is unresponsive. On that the food served in worst. I recommend to go to only 5 stars hotels near airport.
Sentiment: Negative
2024-03-06   ~Toshit   ♡ 0

Chat Page:

🧭 65e2d846fa2ea21f1f866e03
Mumbai   👤 Toshit Hole

You
Ok

You
Nice

You
Ok

🖼 You
Images...+2

🖼 You
Images...+2

You
Okay

🖼 You
Images...+1

🖼 You
Images...+1

You
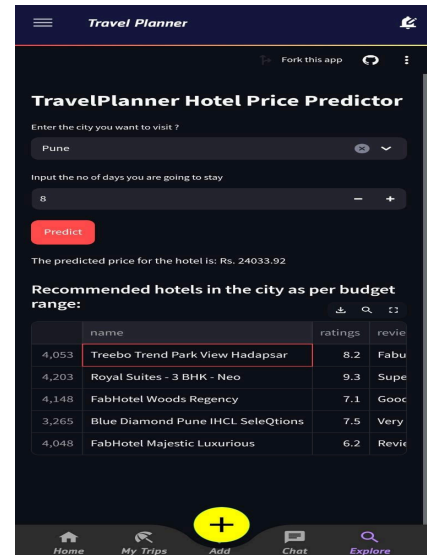
FlightsPage: **AI Trip Planner:**   **Hotel-price-predictor**

3.6   Conclusion and Future work -

Conclusion:

- The TravelPlanner app represents a solution for modern travellers, offering a range of features and functionalities to enhance their travel experiences. By integrating cutting-edge technologies and prioritising user convenience and security, this app aims to revolutionise the way people plan and manage their trips.
- In conclusion, the Travel Planner App offers a comprehensive solution for travellers to plan and manage their trips conveniently.It's attractive UI and robust backend service works efficiently.It mostly solves all the problems faced by the travellers all over the world while planning a trip.
- It even uses ML ,NLP and AI models for efficient functionalities so that users can plan their trips with minimal effort.
- Hence,we can conclude that this app can help the travellers to overcome the problems faced during the planning of trips.TravelPlanner is set to redefine the way people explore and experience the world.

Future Scope:

- Future work involves continuous app improvement, fixing any identified issues, expanding its feature set, and possibly trying to deploy this app on any platform.
- For the future ,we aim to develop a strong and robust architecture for our app,so as to handle a large number of users at the same time.
- We aim to implement a robust system for constant monitoring of the app's performance and user feedback to identify areas for enhancement and optimization.
- Integrating the functionality of booking tickets via TravelPlannerApp .

References

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