

PROJECT DOCUMENTATION

TRAVEL GURU: A Personalized Travel Planning and Tracking App

Team-591074

1. INTRODUCTION:

1.1 Project Overview

Travel Guru is a user-friendly travel app with Firebase-based login and sign-up. It offers destinations, hotels, and flight bookings, complete with search, filtering, and a personalized user profile. Users can book and manage reservations, receive notifications, and future plans include reviews and in-app messaging. The app's technical stack includes native mobile development, Firebase, and a payment gateway. Monetization may involve ads, premium features, and partnerships. A dedicated team is crucial for the app's success, with ongoing maintenance and updates to ensure a great travel planning experience.

1.2 Purpose

The purpose is to provide users with a convenient and comprehensive platform for all their travel needs. It aims to simplify the travel planning process and enhance the overall travel experience by offering features such as destination exploration, hotel and flight bookings, personalized recommendations, and user-friendly tools for managing bookings and notifications. Ultimately, the app's purpose is to make travel planning and booking more accessible, efficient, and enjoyable for travelers, thus encouraging more people to explore and experience the world.

2. LITERATURE SURVEY

2.1 Existing problem

Travelers often face information overload, booking hassles, security concerns, a lack of personalization, and notification overload. This app streamlines the process by offering a consolidated platform with user-friendly features, reliable information, and personalized recommendations, making travel planning, and booking more accessible and enjoyable for users.

2.2 References

<https://medium.com/degoo/jetpack-compose-an-easy-way-to-recyclerview-part-i-2e2b41d7ab2e>

<https://proandroiddev.com/creating-a-form-using-jetpack-compose-and-material-design-6e18bc63b3d1>

<https://www.youtube.com/watch?v=X09ai6vqqIg>

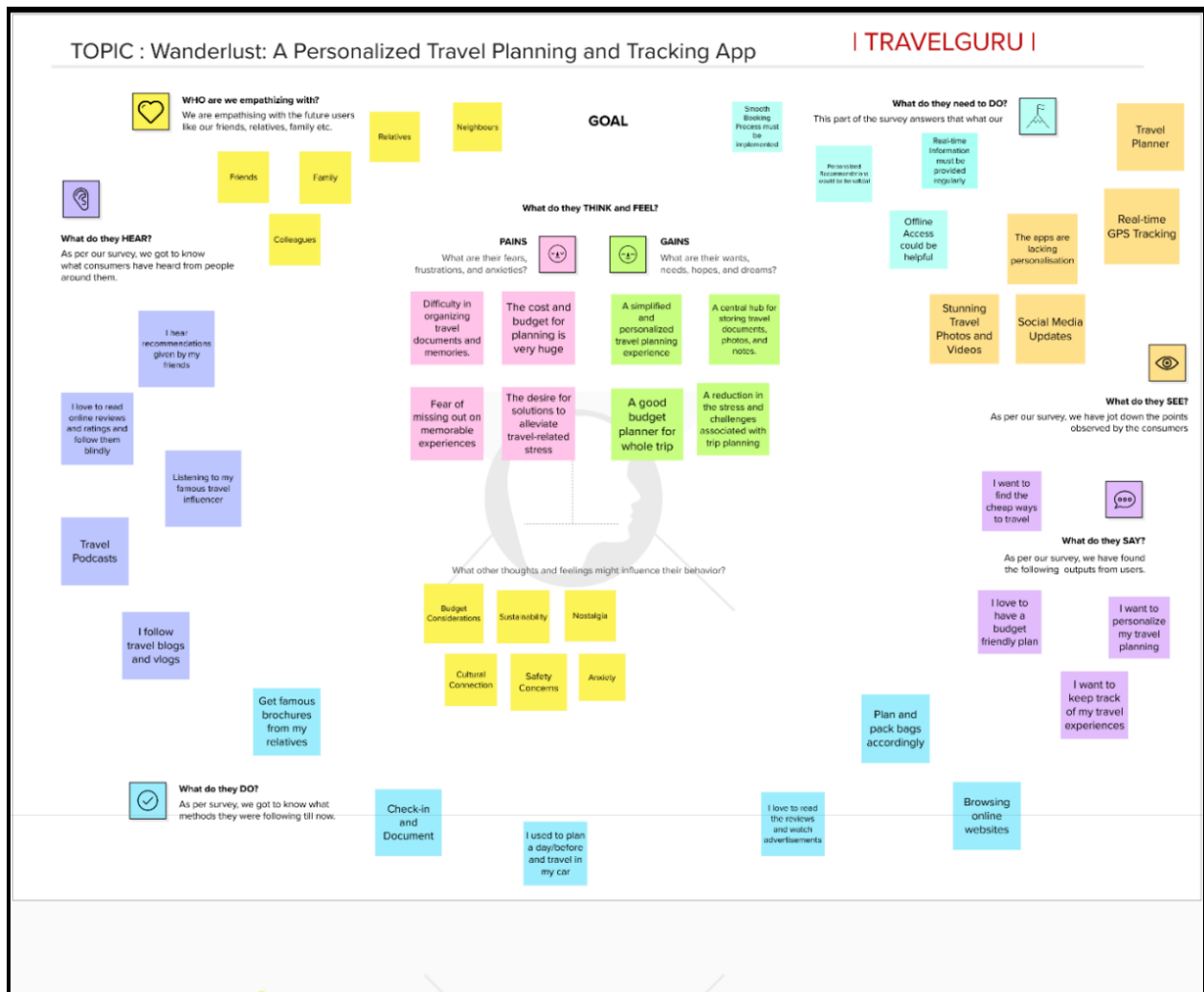
2.3 Problem Statement Definition

Despite the growing passion for travel and exploration, many travelers still face significant challenges in efficiently planning and tracking their journeys. The core problem is the absence of a user-centric travel planning and tracking app that seamlessly combines itinerary creation, document management, and memory preservation. TRAVEL GURU aims to fill this gap by offering a user-friendly, all-in-one platform that transforms the travel experience into a well-organized, unforgettable journey.

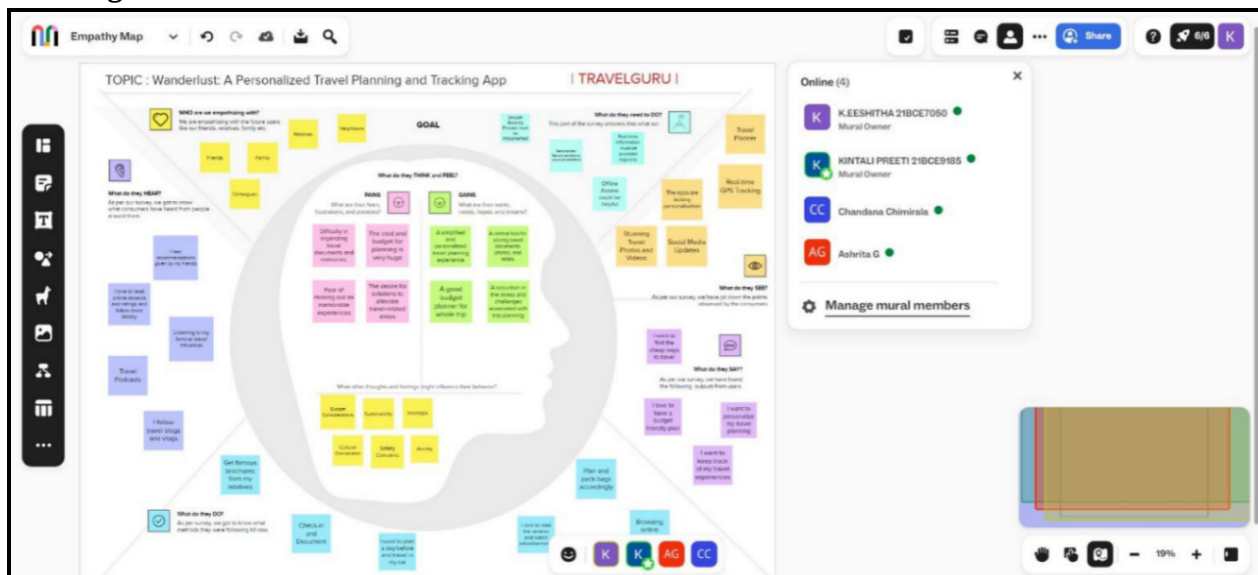
3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

Travel guru empathy map :




Working with teammates:



3.2 Ideation & Brainstorming

Team Gathering, Collaboration and Select the Problem Statement



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

⌚ 10 minutes to prepare
👥 1 hour to collaborate
👤 2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⌚ 10 minutes

- Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.
- Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.
- Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) →

1 Define your problem statement

Despite the growing passion for travel and exploration, many travelers still face significant challenges in efficiently planning and tracking their journeys. The core problem is the absence of a user-centric travel planning and tracking app that seamlessly combines itinerary creation, document management, and memory preservation. TRAVEL GURU aims to fill this gap by offering a user-friendly, all-in-one platform that transforms the travel experience into a well-organized, unforgettable journey.

Brainstorm, Idea Listing and Grouping

2 Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

TIP You can select a sticky note and hit the pencil (edit) icon to start drawing!

3 Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 30 minutes

TIP Add customizable tags to sticky notes to make it easier to find, organize, and categorize important ideas as themes within your board.

Preeti

- Language translator in app for easy communication while travelling
- Packing List Generator could help users prepare efficiently for their trips.
- Using ML algorithms in app to recommend the travel places according to the user's history
- Prediction of whether and type of clothes for the place the user is going to visit

Eeshitha

- We should partner with airlines and hotels to provide exclusive discounts and deals to our users
- Let's include a real-time weather forecast feature for the destinations users are planning to visit
- Incorporating augmented reality (AR) for virtual tour guides at landmarks could be a unique selling point
- a travel budget tracker to help users manage their expenses during trips

Ashrita

- Let's include a 'Travel Bucket List' feature where users can set goals for future trips
- What if we had a section for users to save their favorite travel articles, blogs, and videos for inspiration?
- An offline mode for maps and essential travel information would be invaluable for users in areas with limited connectivity
- A recommender for places would be really exciting for the people

Chandana

- A travel budget tracker would be helpful
- Gamification feature like earning points for travelling can enhance the app even more
- Partnership with local tour guides can improve the experience
- A 'Packing List Generator' could help users prepare efficiently for their trips

Personalization and Recommendations

- Let's include a real-time weather forecast feature for the destinations users are planning to visit - Eeshitha
- Packing List Generator could help users prepare efficiently for their trips. - Preeti

Travel Planning and Budgeting

- a travel budget tracker to help users manage their expenses during trips - Eeshitha
- A travel budget tracker would be helpful - Chandana

Innovative Features

- Let's include a 'Travel Bucket List' feature where users can set goals for future trips - Eeshitha
- Language translator in app for easy communication while travelling - Preeti

Deals and Partnerships

- Partnership with local tour guides can improve the experience - Chandana
- We should partner with airlines and hotels to provide exclusive discounts and deals to our users - Eeshitha

Community and Sharing

- What if we had a section for users to save their favorite travel articles, blogs, and videos for inspiration? - Ashrita
- Partnership with local tour guides can improve the experience - Chandana

Offline Functionality

- Using ML algorithms in app to recommend the travel places according to the user's history - Preeti
- A recommender for places would be really exciting for the people - Ashrita
- An offline mode for maps and essential travel information would be invaluable for users in areas with limited connectivity - Ashrita
- A 'Packing List Generator' could help users prepare efficiently for their trips

Idea Prioritization

4

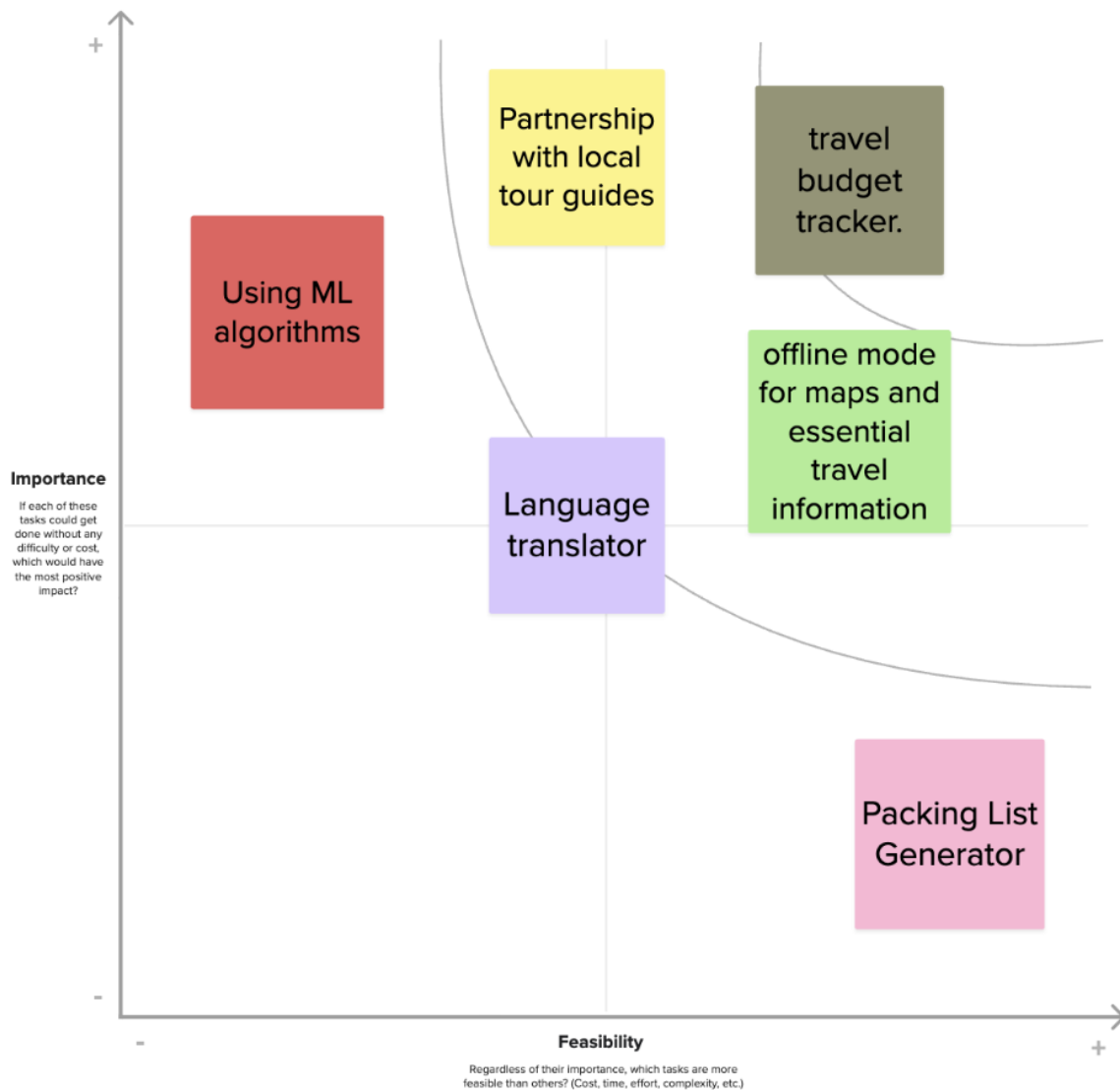
Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕒 20 minutes

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H** key on the keyboard.



4. REQUIREMENT ANALYSIS

4.1 Functional requirements

The functional requirements for the "Travel Guru" app include:

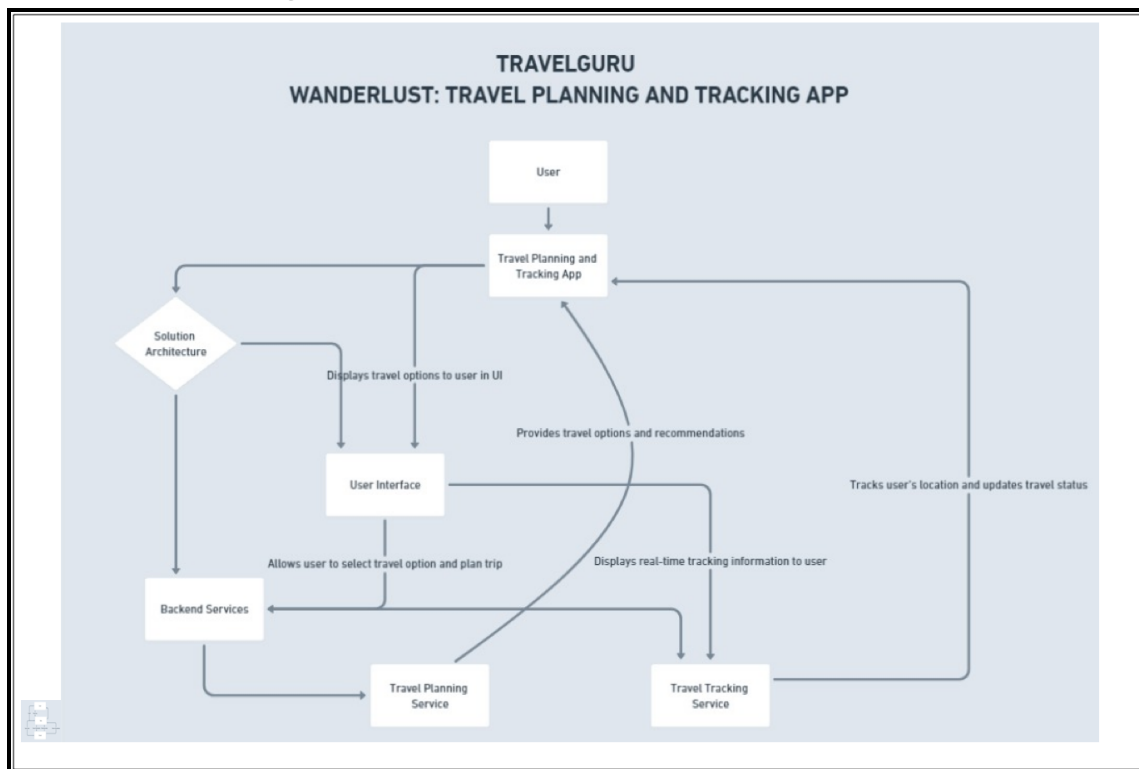
1. User Authentication: Users should be able to create accounts, log in securely, and recover forgotten passwords using Firebase authentication.
2. Destination Search and Display: The app should allow users to search and view detailed information about various travel destinations, including photos, descriptions, and user reviews.
3. Hotel Booking: Users should be able to search for hotels at their chosen destinations, view details, and book accommodations, including filtering options by price, rating, and availability.
4. Flight Booking: The app should provide a flight booking system, allowing users to search for and book flights based on travel plans and preferences.
5. Search and Filters: Users must have the ability to search for destinations, hotels, and flights based on location, dates, and budget, with filtering options to refine search results.
6. User Profile Management: Users should be able to manage their profiles, update personal information, and view their booking history.
7. Booking and Reservation Management: The app should support booking and reservation management for both hotels and flights, including payment processing and confirmation.
8. Notifications: Users should receive push notifications to stay informed about booking confirmations, flight updates, and special offers.
9. User Reviews and Ratings: The app may include a feature for users to leave reviews and ratings for destinations, hotels, and flights.
10. In-App Messaging: An optional feature for users to communicate with customer support or other users within the app.
13. Admin Panel: A backend admin panel to manage and update destination, hotel, and flight information.

4.2 Non-Functional requirements

1. Performance: The app should provide a responsive user experience with quick response times and efficient use of system resources.
2. Security: User data, including login credentials and payment information, should be securely stored and transmitted, with robust authentication and authorization mechanisms in place.
3. Usability: The app should have an intuitive and user-friendly interface, accessible to a diverse user base, and support multiple languages.
4. Reliability: The app should handle errors gracefully, ensuring minimal downtime and data integrity.
5. Maintainability: The codebase should be well-structured and easy to maintain, with regular updates and bug fixes to keep the app running smoothly.

5. PROJECT DESIGN

5.1 Data Flow Diagrams & User Stories

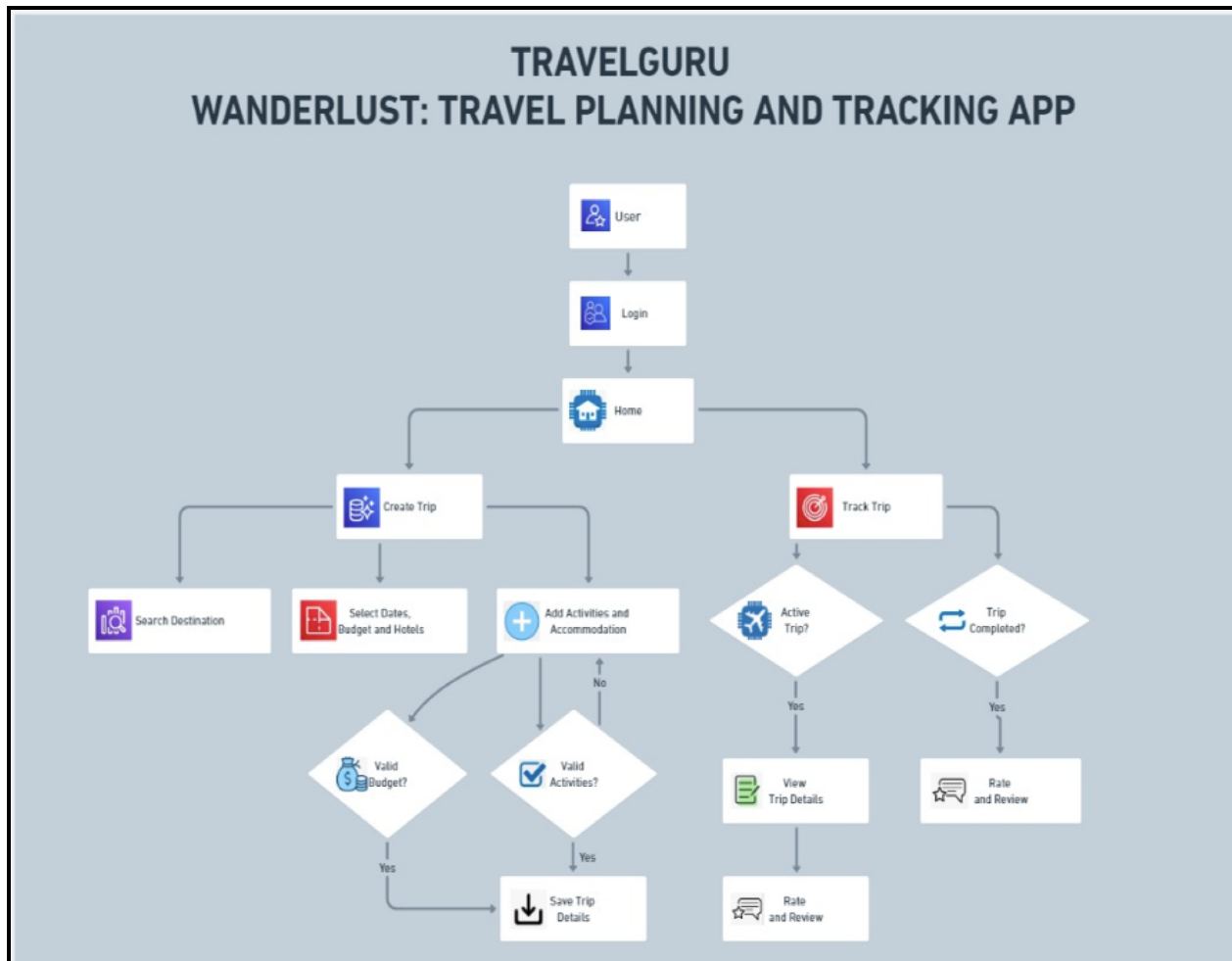


User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by providing my email, creating a password, and confirming the password to set up my account. Upon successful registration, I receive a confirmation email to verify my account	successfully registered my account by entering my email address , a password (), and confirming the password (). I received an email with a confirmation link to verify my account."	High	Sprint-1
	Login	USN-2	As a registered user, I can log in to my account by entering my email and password. Once logged in, I have access to my personalized dashboard and can start planning my	logged in to my account by entering my registered email (user@example.com) and the correct password. After logging in, I was directed to my personalized dashboard.	High	Sprint-1
	Dashboard		After logging in, I can access my personalized dashboard, where I can view my saved itineraries, explore new travel destinations, and track my past and upcoming journeys. The dashboard provides a central hub for managing my travel experiences.	Upon logging in, I accessed my personalized dashboard, where I could view my saved itineraries, explore new travel destinations, and track my past and upcoming journeys."	medium	sprint -2
Customer (Web user)	Selecting Places and Hotels:		While planning a trip, I can select destinations and hotels from a curated list of recommendations or search for specific places. I can view detailed information about each location, including user reviews, pricing, and availability, and add them to my itinerary for further	While planning my trip, I could easily select travel destinations and hotels from the provided recommendations or search for specific places. I viewed detailed information, such as user reviews, pricing, and availability, and successfully added them to my itinerary for further plannin	medium	

Customer Care Executive			Customer Care Executives at Wanderlust app play a pivotal role in enhancing user satisfaction by assessing various aspects of the app. They focus on user support, app accessibility, data privacy, performance, and the incorporation of user feedback, ensuring a seamless and secure travel planning experience while promoting innovation and inclusivity.	The performance of Customer Care Executives is measured by their ability to respond promptly, resolve issues accurately, and maintain a user-friendly and empathetic approach when addressing user concerns. They proactively offer assistance, keep records of interactions, and handle feedback and feature requests while adhering to data privacy regulations and ethical standards, ultimately ensuring high levels of user satisfaction and a positive support experience.	High	Sprint-1a
Administrator			Administrators for the Wanderlust app are responsible for managing user accounts, overseeing data integrity and security, maintaining content accuracy, and ensuring the app's smooth operation. They also play a crucial role in addressing escalated user issues, handling compliance with data protection regulations, and maintaining the overall health and security of the app.	Acceptance criteria for administrators include the ability to efficiently manage user accounts, maintain data integrity and security, regularly update and validate travel content, ensure smooth app operation, effectively handle escalated user issues, demonstrate compliance with data protection regulations, and proactively address and mitigate security risks, ultimately ensuring a secure and well-functioning app.	medium	Sprint-1

5.2 Solution Architecture



6.PROJECT PLANNING & SCHEDULING

6.1 Technical Architecture

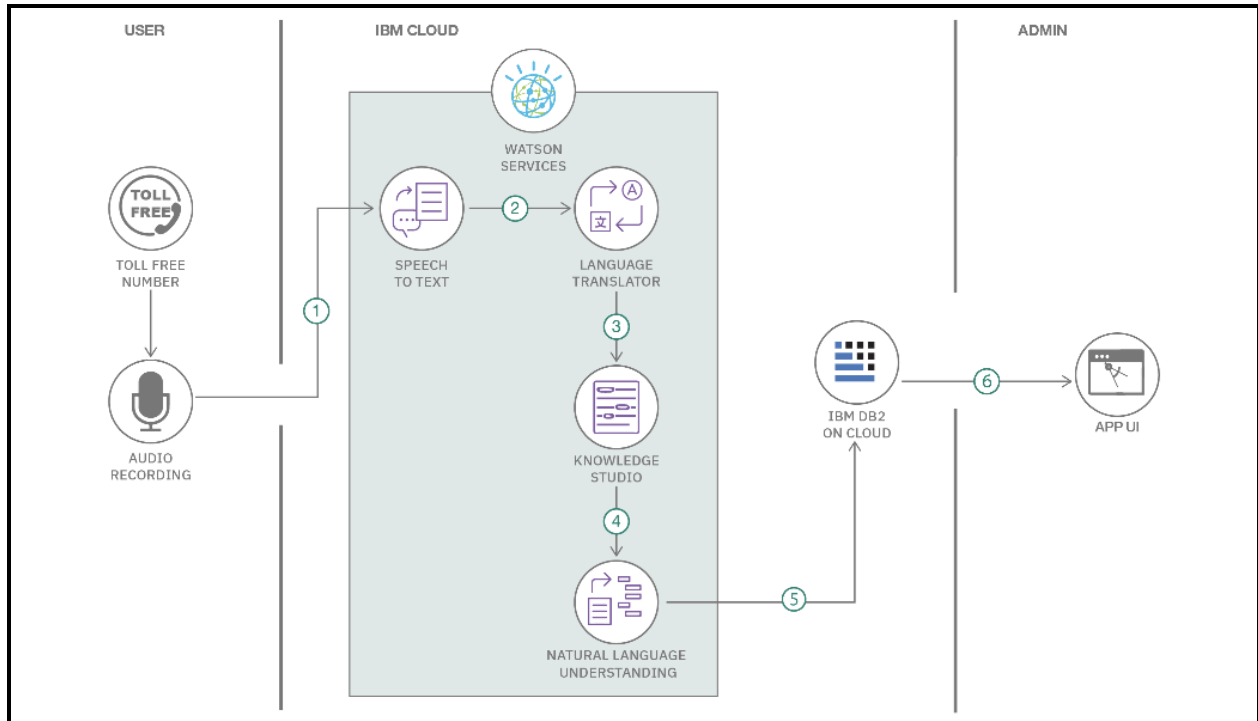


Table-1: Components & Technologies:Table-2: Application Characteristics:

S. No	Component	Description	Technology
1	User Interface	User interacts with the app through the amazing and user-friendly UI. Icons are there for better user experience.	Jetpack Compose, Canva, Magic Studio (ai tool)
2	Application Logic-1	First user logs to the app if he has an account, if he/she doesn't have the account then he is sent to the sign-up page. Regular expression logic is used to verify passwords and usernames.	Kotlin
3	Application Logic-2	Navigation between pages, from login to home page. And many other pages using a back button or clickable events.	Kotlin
4	Application Logic-3	Data retrieving from previous page while displaying the details of travel plan.	Kotlin
5	Database	We used various datatypes like varchar, number for data storage.	SQLite, Room
6	Cloud Database	Our database can be extended to cloud when the user wants to store the travel plans.	Google Drive

7	File Storage	File storage requirement is to store the files of the travel plan which includes all the details of the members, travel medium etc along with the details of his all the plans and interests.	Local Filesystem
8	External API-1	The API is useful for the user to understand the weather situation in the place he/she is going to travel in the app itself.	IBM Weather API
9	External API-2	The API is useful to verify the DOB the user along with identity and for various other purposes.	Aadhar API
10	Infrastructure (Server / Cloud)	To improve availability, backup, recovery of data. For further scalability etc this cloud infrastructure is used.	AWS

S. No	Characteristics	Description	Technology
1	Open-Source Frameworks	The android studio is used to build the good UI using the language Kotlin along with jetpack compose to build the app. Then, the app is committed on the GitHub.	Kotlin, Android Studio, GitHub
2	Security Implementations	The user sets the password, which is useful in controlling their own data.	Kotlin
3	Scalable Architecture	Data, application, and presentation is well done using the Android studio	Android Studio
4	Availability	Using load balancers along with autoscaling to improve the availability of the app to reduce the unavailability when demand increases.	AWS EC2
5	Performance	Number of requests per sec is the availability of the app and the response time can be reduced using the cloud services which ensure the maximum availability for a good cost.	AWS

6.2 Sprint Planning & Estimation

Release	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Team Members	Priority
Sprint-1	Registration	USN-1	As a user, I can register for the application by providing my email, creating a password, and confirming the password to set up my account. Upon successful registration, I receive a confirmation email to verify my account.	Successfully registered my account by entering my email address, a password (), and confirming the password (). I received an email with a confirmation link to verify my account."	1	High
Sprint-1	Welcome Page	USN-2	As a user, I have to build a welcome page which is useful for the user to know that the app is for travel and to give an initial expression to the user for its fantastic ui and ux.	Successfully open the app and display the welcome page to the user.	2	High
Sprint-1	Login	USN-3	As a registered user, I can log in to my account by entering my email and password. Once logged in, I have access to my personalized dashboard and can start planning my trip.	Logged in to my account by entering my registered email (user@example.com) and the correct password. After logging in, I was directed to my personalized dashboard.	1	High
Sprint -2	Dashboard	USN-4	After logging in, I can access my personalized dashboard, where I can view my saved itineraries, explore new travel destinations, and track my past and upcoming journeys. The dashboard provides a central hub for managing my travel experiences.	Upon logging in, I accessed my personalized dashboard, where I could view my saved itineraries, explore new travel destinations, and track my past and upcoming journeys.	2	Medium
Sprint -2	Home Page	USN-5	As a user, I must develop a good home page so that the user can explore various options which can be visible to him for	This is helpful for the user to explore various options the app is providing, along with personalised dashboard.	2	High

			travel destinations to profile etc.			
Sprint- 3	Selecting Places and Hotels:	USN-6	While planning a trip, I can select destinations and hotels from a curated list of recommendations or search for specific places. I can view detailed information about each location, including user reviews, pricing, and availability, and add them to my itinerary for further	While planning my trip, I could easily select travel destinations and hotels from the provided recommendations or search for specific places. I viewed detailed information, such as user reviews, pricing, and availability, and successfully added them to my itinerary for further planning.	2	Medium
Sprint-3	Add travel guides	USN-7	As a user, I need to provide the travel guides for the destinations the user selects to completely explain the travel plan about places, travel medium, place of stay etc.	This travel guides are helpful for the user to understand the complete journey of the travel place and how he/she is going to travel.	2	High
Sprint-4	Customer satisfaction and Security	USN-8	Customer Care Executives at Wanderlust app play a pivotal role in enhancing user satisfaction by assessing various aspects of the app. They focus on user support, app accessibility, data privacy, performance, and the incorporation of user feedback, ensuring a seamless and secure travel planning experience while promoting innovation and inclusivity.	The performance of Customer Care Executives is measured by their ability to respond promptly, resolve issues accurately, and maintain a user-friendly and empathetic approach when addressing user concerns. They proactively help, keep records of interactions, and handle feedback and feature requests while adhering to data privacy regulations and ethical standards, ultimately ensuring high levels of user satisfaction and a positive support experience.	2	High

Sprint-4	Administration and Access control		Administrators for the Wanderlust app is responsible for managing user accounts, overseeing data integrity and security, maintaining content accuracy, and ensuring the app's smooth operation. They also play a crucial role in addressing escalated user issues, handling compliance with data protection regulations, and maintaining the overall health and security of the app.	Acceptance criteria for administrators include the ability to efficiently manage user accounts, maintain data integrity and security, regularly update, and validate travel content, ensure smooth app operation, effectively handle escalated user issues, demonstrate compliance with data protection regulations, and proactively address and mitigate security risks, ultimately ensuring a secure and well-functioning app.	4	Medium
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6.3 Sprint Delivery Schedule

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	10 Oct 2023	16 Oct 2023	20	09 Oct 2023
Sprint-2	30	6 Days	17 Oct 2023	23 Oct 2023	30	16 Oct 2023
Sprint-3	20	6 Days	24 Oct 2023	30 Oct 2023	10	23 Oct 2023
Sprint-4	20	6 Days	31 Oct 2023	06 Nov 2023	0	30 Oct 2023

7. CODING & SOLUTIONING (Explain the features added in the project along with code)

7.1 Feature 1

The "Travel Guru" app prides itself on being exceptionally user-friendly. With a seamless and intuitive interface, it simplifies the travel planning process, allowing users to effortlessly explore destinations, browse hotels, and search for flights. Whether you're a seasoned traveler or new to the journey, our app ensures that you have a smooth and enjoyable experience from the moment you log in.

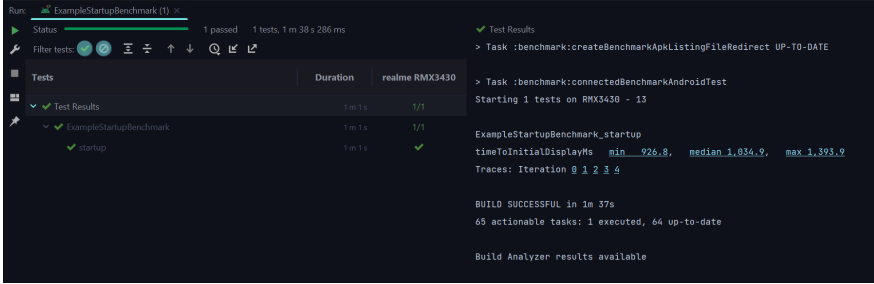
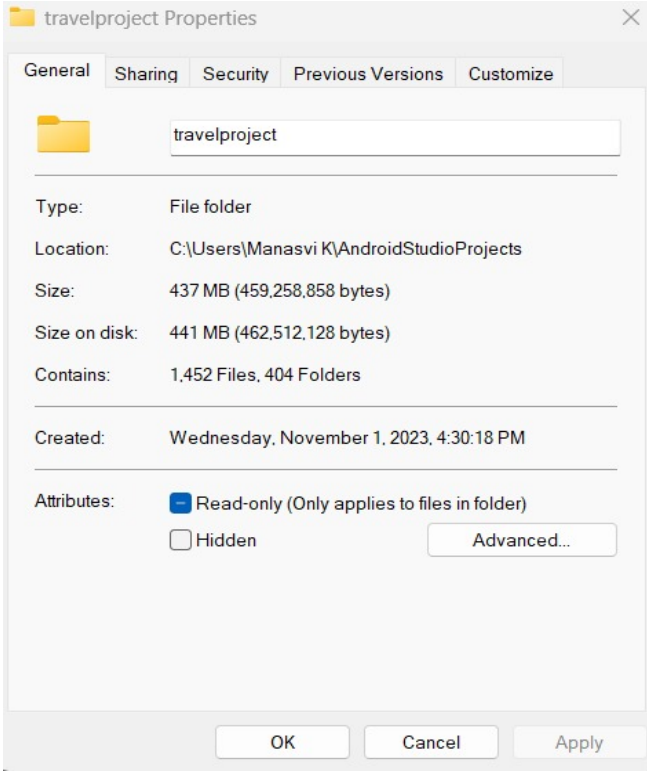
7.2 Feature 2

The "Travel Guru" app goes a step further by offering day-wise planning to enhance your travel experience. With our innovative feature, you can create detailed itineraries for your trips, ensuring that every day of your journey is well-organized and filled with exciting activities. Whether you're exploring a new city or embarking on an adventure, our day-wise planning feature is your key to making the most of your travel, all conveniently within the app.

8. PERFORMANCE TESTING

8.1 Performance Metrics

Model Performance Testing:

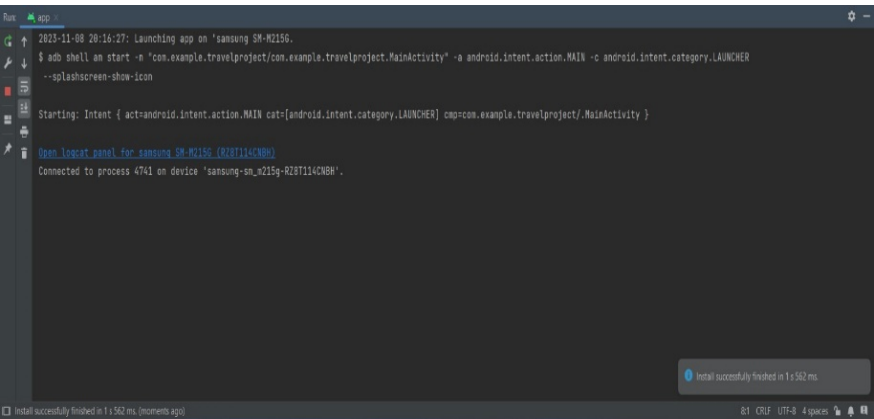
S. No	Parameter	Values	Screenshot
1.	Metrics	App Launch Time- 1m 37s Screen Render Time- 1 min 1s Code Quality- Good	
2.	Usage	App Size-437 MB Customer Experience	 <p>Where here Customer searches for flights, hotels, exclusive deals and prices. It helps to search the most suitable and best option for travelers giving the customers a fantastic experience.</p>

3.

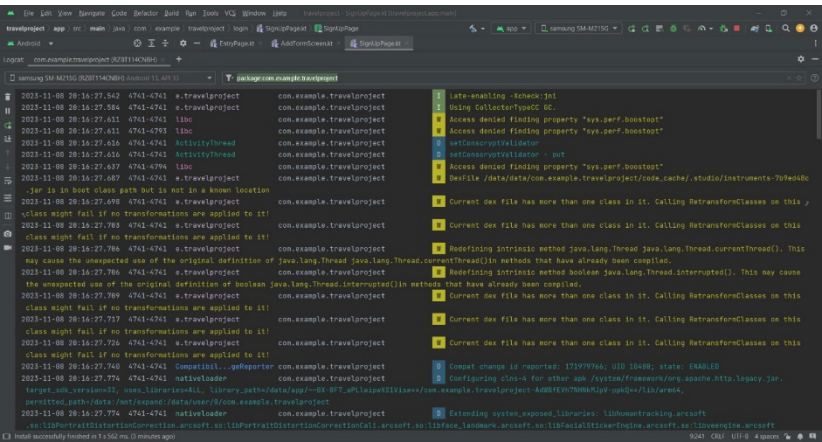
Performance

Error and Crash Rates- 0

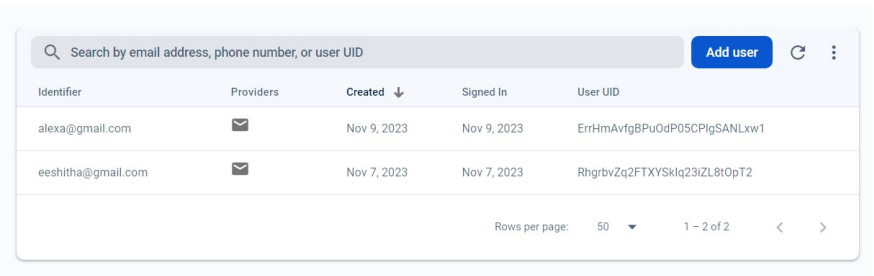
Here the app was **successfully installed and launched** and no error was reported.



There was no error inside the logcat no error reported.



Database Query Performance- is quite good as we connected to the firebase. The below picture also shows the number of active users and logins in the app.



Daily Active Users

Current billing period
Nov 1 - Dec 1 (PST)



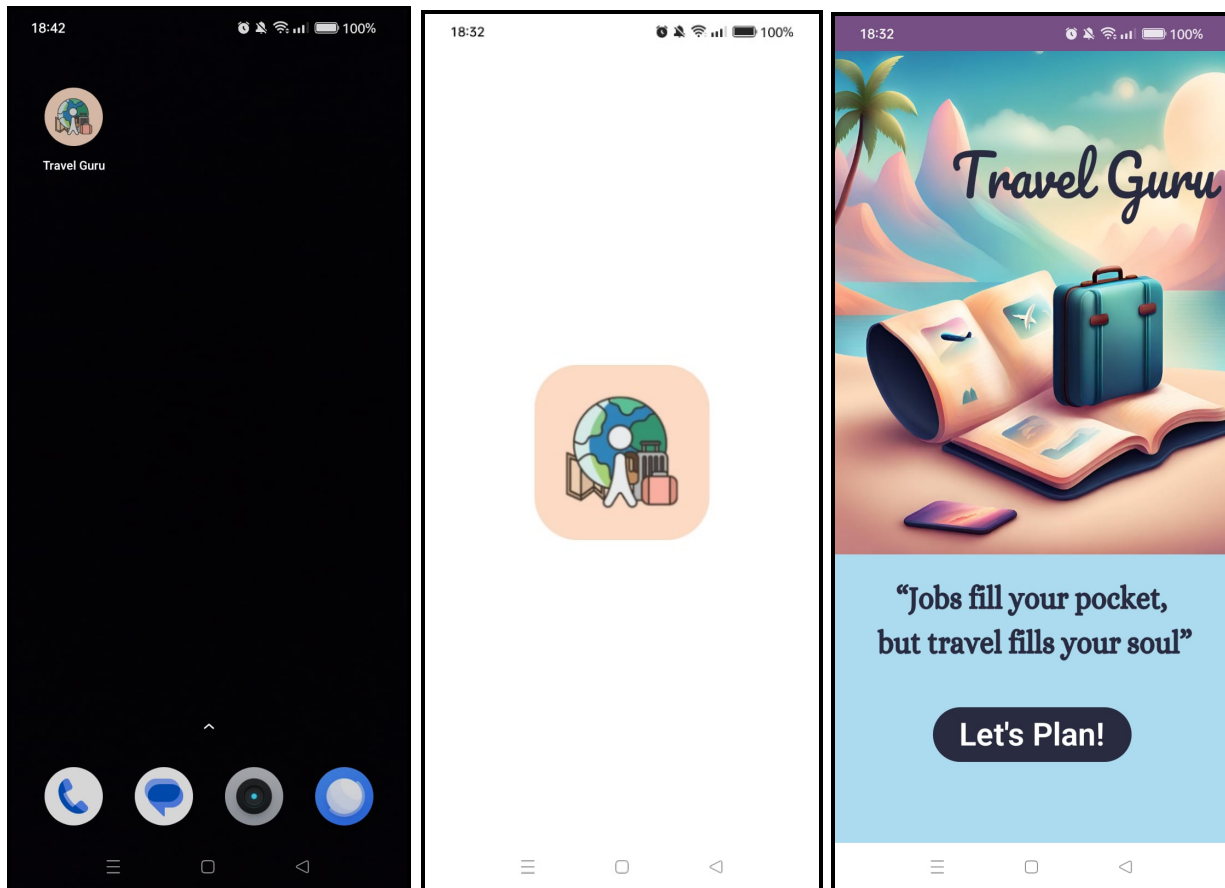
Monthly Active Users

Current billing period
Nov 1 - Dec 1 (PST)




9. RESULTS

9.1 Output Screenshots



18:32

100%



Enter Your Mail Id

Enter Your Password


Login

Forgot Password?

Don't Have an Account? Sign Up

18:34

100%



Create An Account

First Name

Alexa

Last Name

Xyz

Email Address

alex@gmail.com

Password

.....

Confirm Password

Abc@321


Confirm Password must be same as password

Sign Up

Already Have an Account? Sign In

18:34

100%



Enter Your Mail Id

alex@gmail.com

Enter Your Password


Login

Forgot Password?

Don't Have an Account? Sign Up

18:34

100%



Forgot Password

Email Address


Password

Confirm Password

Set Password

18:34

100%



Enter Your Mail Id

alex@gmail.com

Enter Your Password

Abc@3210

Login

Forgot Password?

Don't Have an Account? Sign Up

18:34

100%

Customize your Experience

Total Number Of Persons

1

Number Of Adults

1

Number Of Children

1

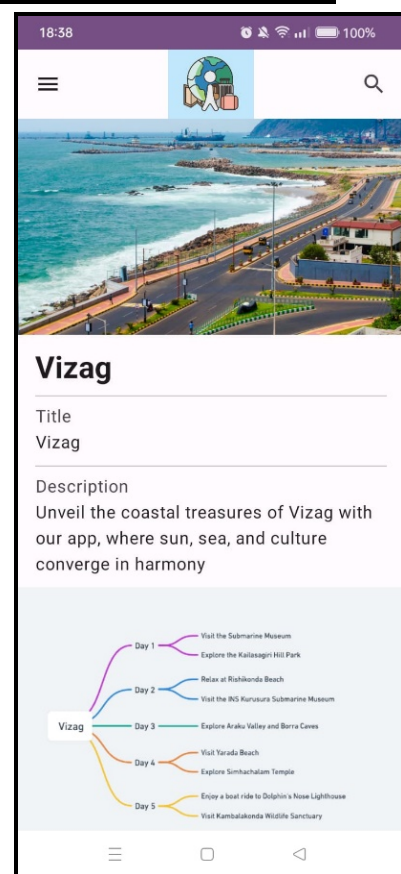
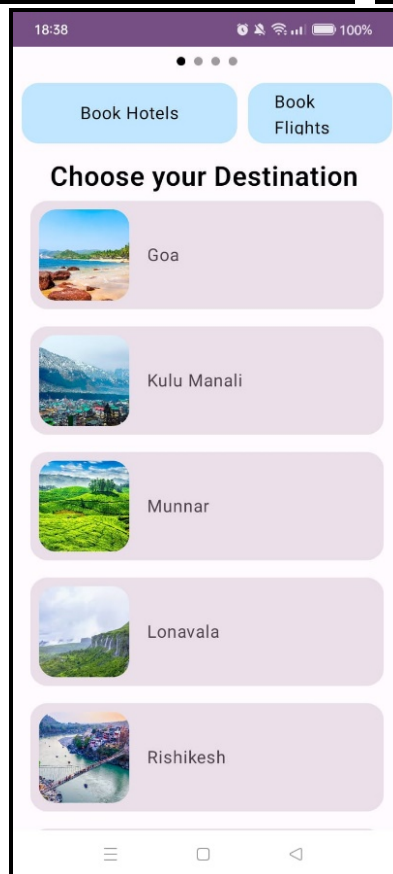
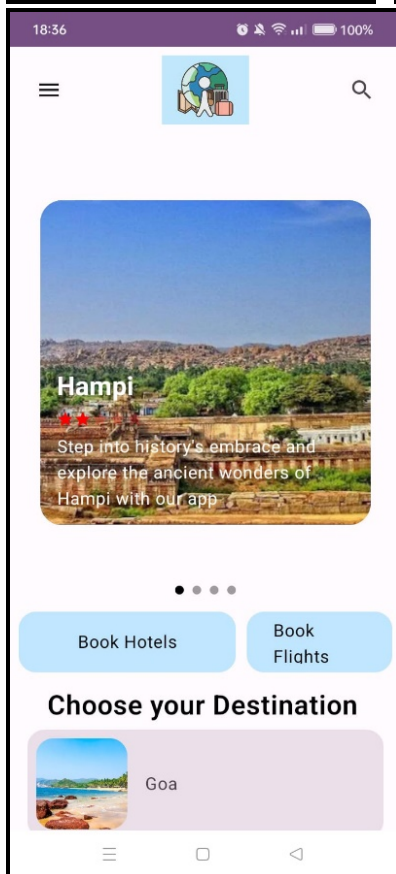
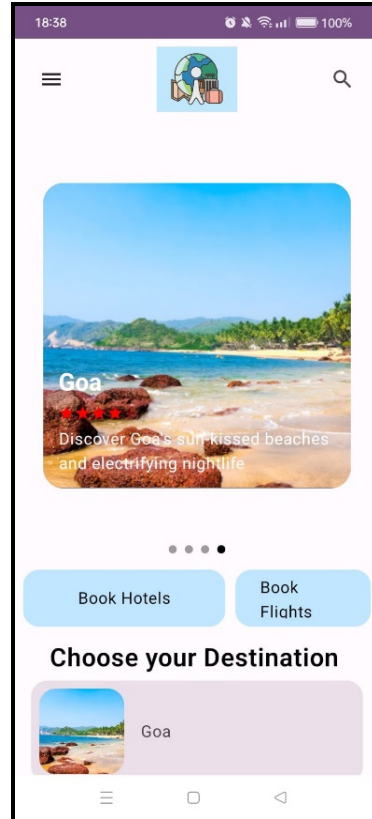
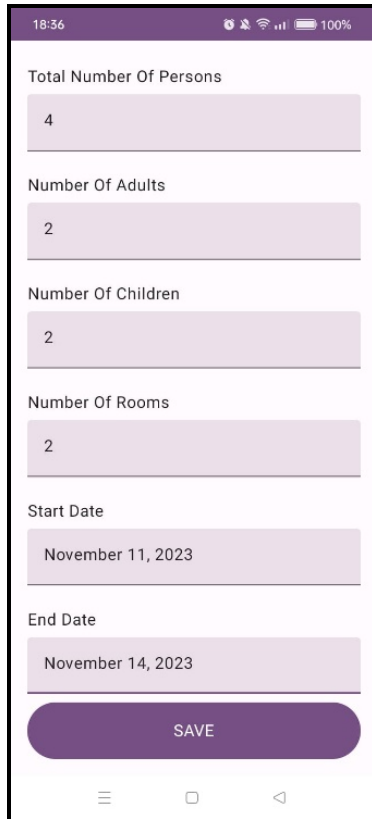
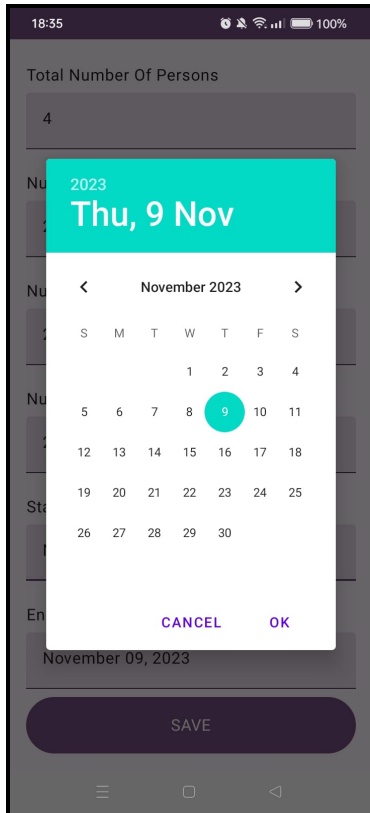
Number Of Rooms

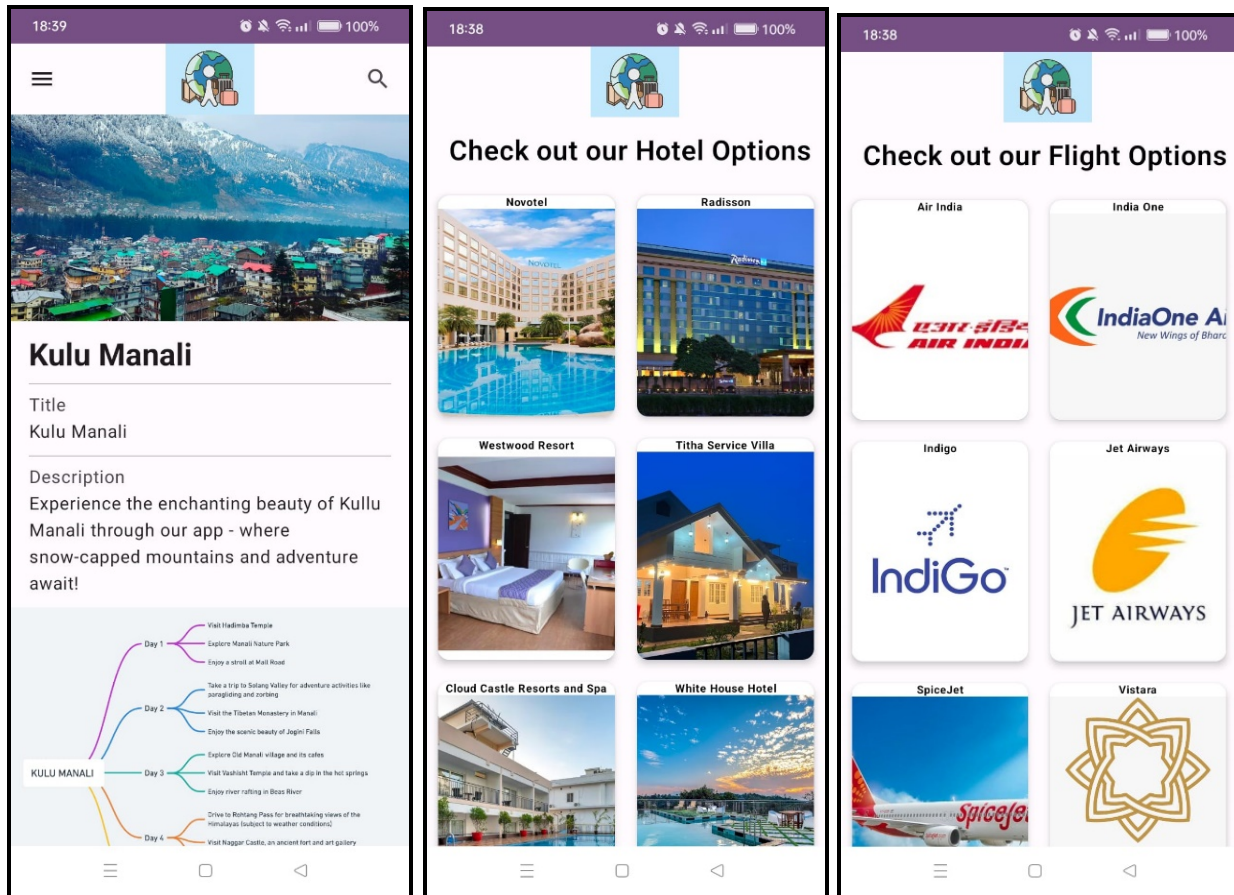
1

Start Date

November 09, 2023

End Date





10. ADVANTAGES & DISADVANTAGES

Advantages:

1. **User-Friendly Interface:** The app offers a user-friendly and intuitive interface, making it easy for users to explore and plan their travel seamlessly.
2. **Comprehensive Travel Options:** "Travel Guru" provides a wide range of travel options, including destinations, hotels, and flights, allowing users to plan their entire trip within a single platform.
3. **Secure Authentication:** The integration with Firebase ensures secure user authentication, protecting user accounts and data.
4. **Personalized Recommendations:** The app uses user data to offer personalized travel recommendations, enhancing the overall travel planning experience.
5. **Convenient Day-Wise Planning:** The day-wise planning feature simplifies itinerary creation, ensuring well-organized and enjoyable travel experiences.

Disadvantages:

1. Limited Features: The app's current version may lack certain advanced features like in-app messaging, user reviews, or real-time flight tracking that are available in other travel apps.
2. Dependence on Internet Connection: Users must have a reliable internet connection to access the app, which could be a limitation when traveling to areas with poor connectivity.
3. Competitive Market: The travel app market is highly competitive, and gaining a significant user base may require substantial marketing efforts and unique selling points.

11. CONCLUSION

The Travel Guru app stands as a user-friendly and convenient travel planning tool, offering a wide array of destinations, hotels, and flights for users to explore and book. With secure Firebase authentication, personalized recommendations, and day-wise planning, it aims to simplify the travel experience. However, it's important to acknowledge that the app faces competition and may need to continually evolve and expand its feature set to stay competitive in the dynamic travel app market. Overall, this has the potential to provide travelers with a valuable tool for hassle-free trip planning and booking.

12. FUTURE SCOPE

with a focus on expanding and enhancing its capabilities to become a fully functional travel companion. Here are key areas for future development:

1. International Expansion of our app aims to broaden its horizons by including foreign destinations, allowing users to plan and book international trips seamlessly. This expansion will offer travelers a broader spectrum of choices and a more comprehensive travel planning experience.
2. Extended Hotel Portfolio The app envisions increasing its hotel database to include a wider variety of accommodations across different price ranges, ensuring that users have more choices to fit their preferences and budget.
3. Additional Features The roadmap for app includes the potential integration of features such as user reviews and ratings for destinations, hotels, and flights, real-time flight tracking, weather forecasts, and interactive travel itineraries.

13. APPENDIX

Source Code in GitHub:

<https://github.com/smartinternz02/SI-GuidedProject-587257-1696856851>

Project Demo Link:

<https://drive.google.com/file/d/1YcThgzD4ODcjbdzMonRcz0k2O1SBQrKC/view?usp=sharing>