

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

1. INTRODUCTION

1.1 Project Overview

Explore with AI: Custom Itineraries for Your Next Journey is an AI-powered travel planning solution designed to simplify and personalize trip organization for individuals and travel professionals. Using generative AI (Gemini Pro) and a Streamlit-based interface, the system collects user inputs such as destination, travel duration, and preferences, and transforms them into a detailed, day-wise itinerary. It provides recommendations for attractions, dining, activities, and travel tips in a structured format. The goal is to eliminate time-consuming manual research and enable users to plan efficient, customized trips quickly, making travel planning smarter, faster, and more accessible.

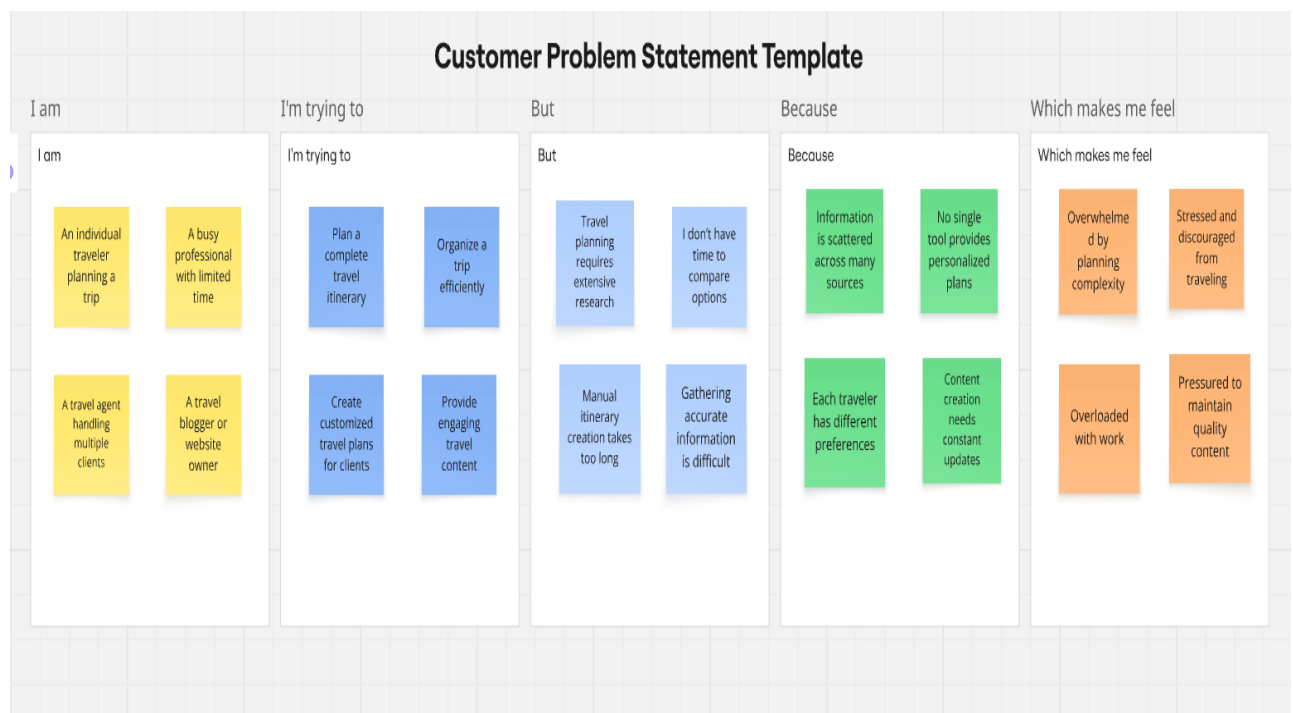
1.2 Purpose

The purpose of this project is to develop an AI-powered system that automatically generates personalized travel itineraries based on user inputs such as destination, duration, and preferences. It aims to simplify travel planning, reduce the time and effort required for research, and provide users with a well-structured plan that enhances their travel experience.

2.IDEATION PHASE

2.1 Problem Statement

Travel planning information is scattered across multiple sources and requires extensive manual research, making it difficult for users to quickly create personalized and efficient itineraries. Existing tools often provide generic recommendations and lack intelligent customization, limiting their usefulness for travelers with specific preferences, time constraints, or unique needs.



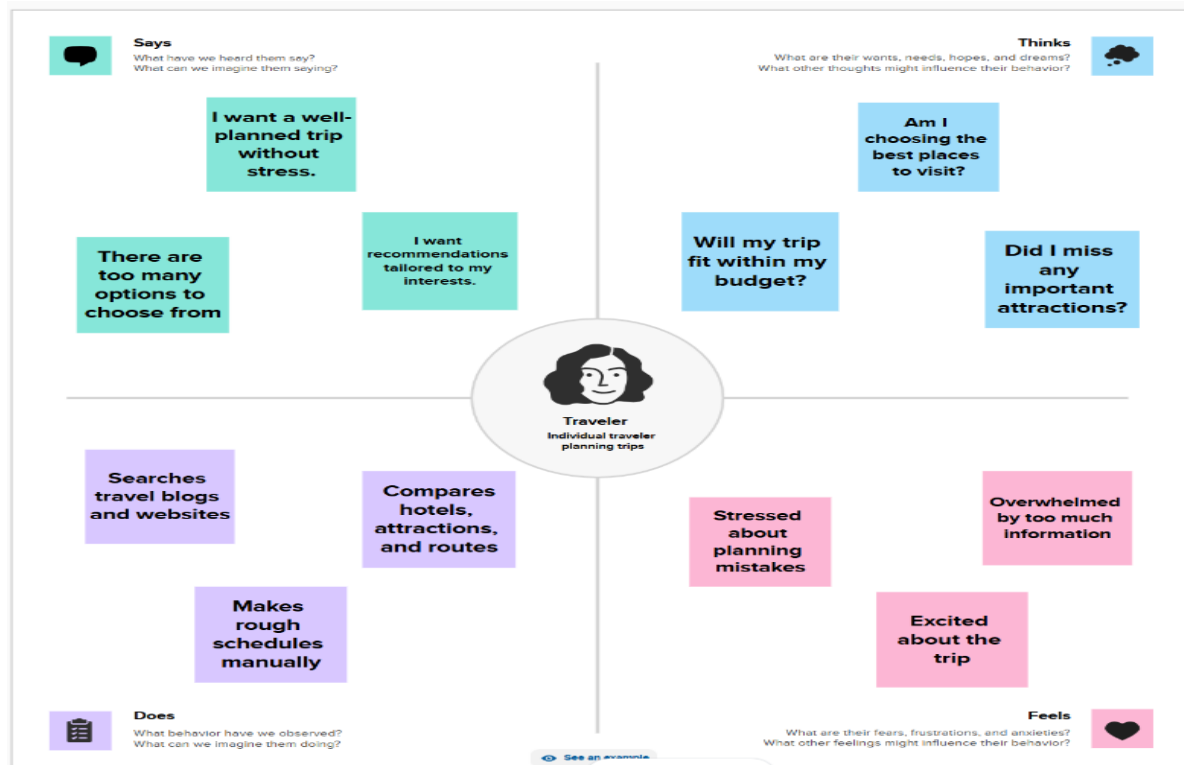
Team: Santhija, Deepika, Snehalatha, Sai Dinesh

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

| Problem Statement (PS) | I am (Customer) | I'm trying to | But | Because | Which makes me feel |
|------------------------|---|---|--|--|---|
| PS-1 | A <u>traveler</u> planning a vacation | Create a detailed travel plan for my trip | Travel planning requires extensive research and is time-consuming | Information is scattered across many websites and not personalized | Overwhelmed and unsure about my travel decisions |
| PS-2 | A working professional with limited time | Plan a short trip efficiently | I don't have time to research destinations, hotels, and activities | Planning requires comparing multiple options and schedules | Stressed and discouraged from traveling |
| PS-3 | A travel agent serving multiple clients | Create customized itineraries quickly | Manual planning takes too long for each client | Every client has different preferences and requirements | Overloaded and less productive |
| PS-4 | A travel content creator or website manager | Provide engaging travel guides regularly | Creating detailed content requires extensive research | Information must be accurate, updated, and appealing | Under pressure to maintain quality content consistently |

2.2 Empathy Map Canvas




Team: Santhija, Deepika, Snehalatha, Sai Dinesh

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

2.3 Brainstorming

Template



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

A

Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B

Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

C

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

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

🕒 5 minutes

PROBLEM

How might we enable travelers and travel agencies to quickly create personalized, detailed travel itineraries using AI based on destination, duration, and user preferences?

Key rules of brainstorming

To run a smooth and productive session

🗣️ Stay in topic.


💡 Encourage wild ideas.

🙊 Defer judgment.

👂 Listen to others.

🗣️ Go for volume.

👁️ If possible, be visual.



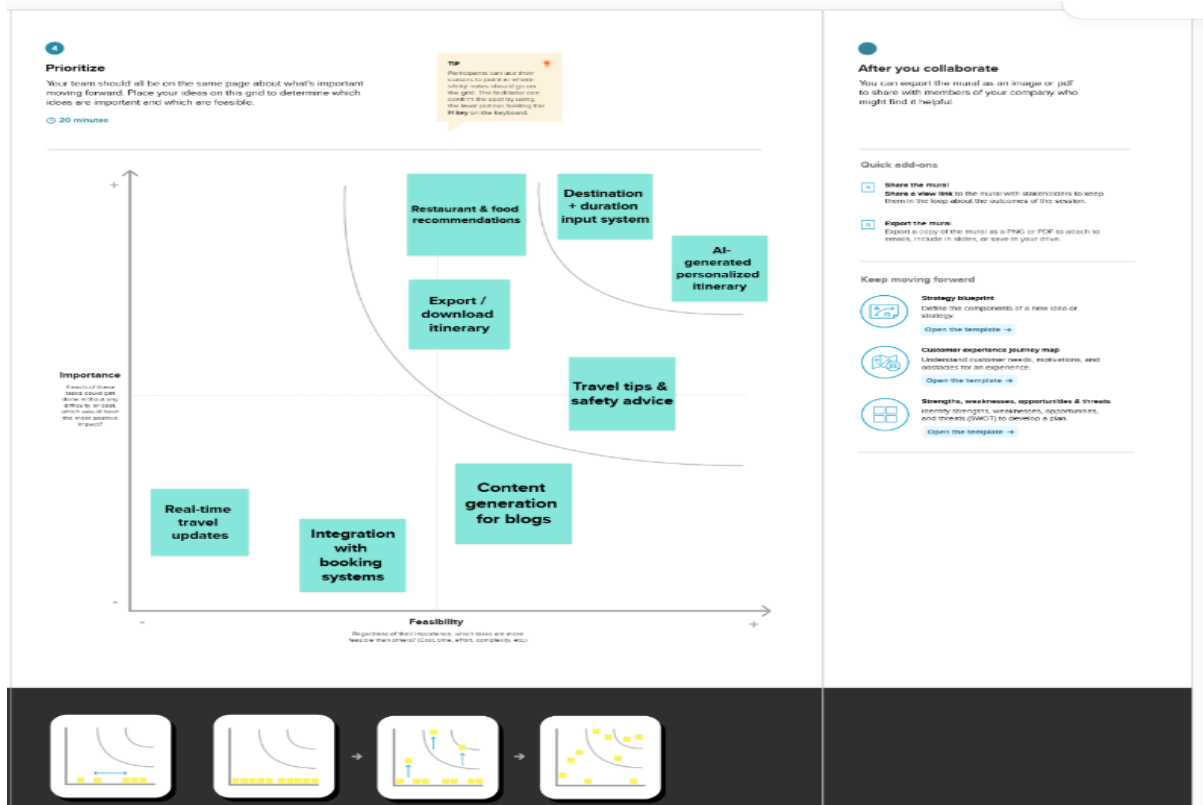
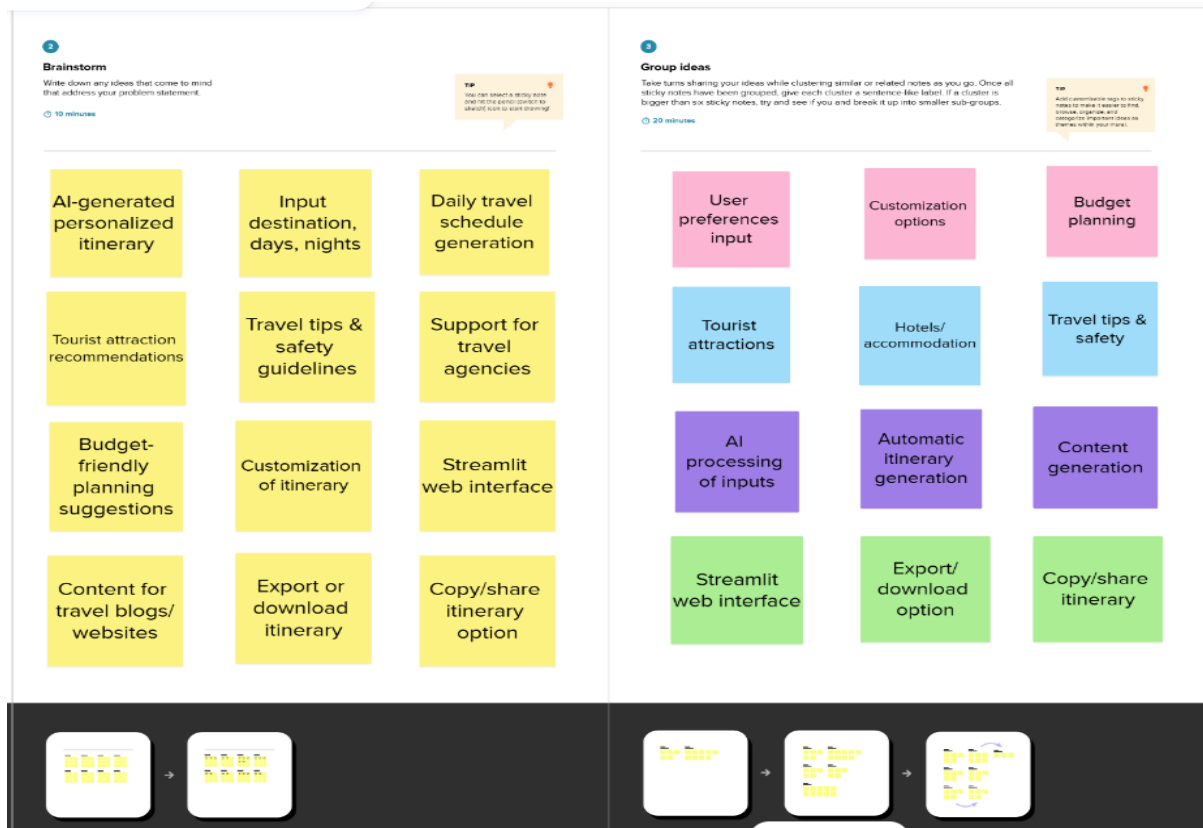
Need some inspiration?

See a filtered version of this template to kickstart your work.

[Open example](#) →

PROJECT REPORT

Team id- LTVIP2026TMIDS52031



Team: Santhija, Deepika, Snehalatha, Sai Dinesh

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

3.REQUIREMENT ANALYSIS

The system requires users to provide travel details such as destination, trip duration, and personal preferences. Based on these inputs, the application must process the information using a generative AI model to produce a personalized itinerary. The system should generate a clear day-wise travel plan that includes recommended attractions, activities, dining options, and travel tips. Additionally, the interface must allow users to review, modify, and regenerate the plan if needed. The application should be easy to use, responsive, and capable of delivering results quickly to support efficient travel planning.

3.1 Customer Journey Map



3.2 Solution Requirement

Functional Requirements:

Following are the functional requirements of the proposed solution.



| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|-------------------------------|--|
| FR-1 | User Input of Travel Details | <ul style="list-style-type: none">• Enter destination• Enter number of days and nights• Provide travel preferences (interests, budget, etc.) |
| FR-2 | AI-Based Itinerary Generation | <ul style="list-style-type: none">• Process user inputs using Gemini Pro AI• Generate personalized travel plan• Create day-wise schedule |
| FR-3 | Recommendations Generation | <ul style="list-style-type: none">• Suggest tourist attractions• Recommend restaurants and local food• Provide travel tips and safety guidelines |
| FR-4 | Itinerary Display | <ul style="list-style-type: none">• Show structured itinerary in Streamlit interface• Display daily activities clearly• Present recommendations in readable format |
| FR-5 | Customization & Export | <ul style="list-style-type: none">• Allow user to modify inputs• Regenerate itinerary• Copy or download itinerary for future use |

Team: Santhija, Deepika, Snehalatha, Sai Dinesh

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

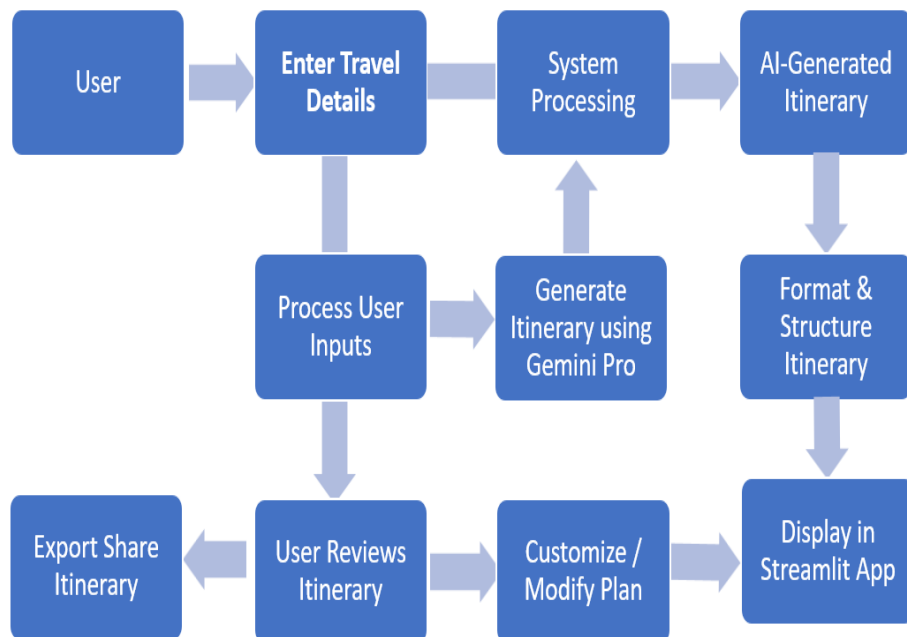
Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|---|
| NFR-1 | Usability | The system should have a simple and intuitive interface so users can easily enter details and understand the itinerary. |
| NFR-2 | Security | User inputs and generated data should be handled securely without unauthorized access. |
| NFR-3 | Availability | The system should consistently generate accurate and complete itineraries without failures. |
| NFR-4 | Performance | The itinerary should be generated within a few seconds after submitting inputs. |
| NFR-5 | Availability | The application should be accessible anytime via the web interface. |

3.3 Data Flow Diagram

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



PROJECT REPORT

Team id- LTVIP2026TMIDS52031

3.4 Technology Stack

Technology Stack for "Explore with AI: Custom Itineraries for Your Next Journey".

| Component | Tool or Technology | Purpose |
|----------------|---|---|
| Data Source | User Input (Destination, Duration, Preferences) | Collect travel details required for itinerary generation |
| AI Model | Gemini Pro (Google Generative AI API) | Generate personalized travel itinerary using A |
| Processing | Python | Process user inputs and interact with AI model |
| User Interface | <u>Streamlit</u> | Provide interactive web interface for users to enter details and view results |
| Storage | Local storage | Store inputs and generated itinerary temporarily |

4. PROJECT DESIGN

4.1 Problem Solution Fit

Template: Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis

| | | | | |
|--|---|--|---|--|
| Define CS, fit into CC | 1. CUSTOMER SEGMENT(S) <small>Who is your customer? i.e. working parents of 0-5 y.o. kids</small> Travelers, busy professionals, travel agencies, and travel content creators who need help planning trips | 6. CUSTOMER CONSTRAINTS <small>What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.</small> They have limited time, budget constraints, and lack personalized guidance. | 5. AVAILABLE SOLUTIONS <small>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking</small> They currently use travel websites, blogs, videos, or travel agents. | Explore AS, differentiate |
| | | | | |
| Focus on J&P, tap into BE, understand RC | 2. JOBS-TO-BE-DONE / PROBLEMS <small>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</small> They need to create a complete travel plan but find it time-consuming and difficult. | 9. PROBLEM ROOT CAUSE <small>What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations.</small> ravel information is scattered and not tailored to individual needs. | 7. BEHAVIOUR <small>What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)</small> They search online, compare options, and manually create rough plans. | Focus on J&P, tap into BE, understand RC |
| | | | | |
| Identify strong TR & EM | 3. TRIGGERS <small>What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.</small> An upcoming trip or client request creates the need for quick planning. | 10. YOUR SOLUTION <small>If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.</small> TravelGuideAI uses AI to automatically generate personalized travel itineraries. | 8. CHANNELS of BEHAVIOUR 8.1 ONLINE <small>What kind of actions do customers take online? Extract online channels from #7</small> They use search engines, travel apps, social media, and booking websites. | Extract online & offline CH of BE |
| | 4. EMOTIONS: BEFORE / AFTER <small>How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design.</small> Before planning they feel stressed and confused. | | 8.2 OFFLINE <small>What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.</small> | |

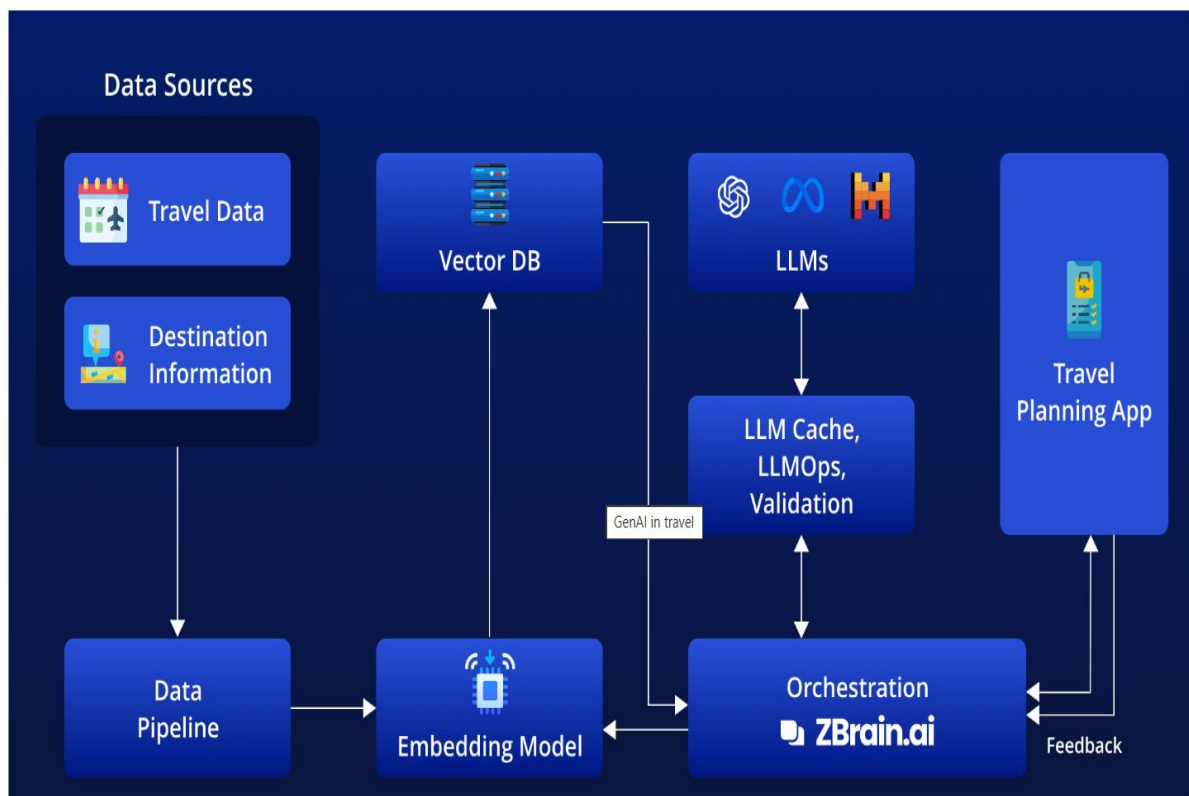
PROJECT REPORT

Team id- LTVIP2026TMIDS52031

4.2 Proposed Solution

| S.No. | Parameter | Description |
|-------|---|--|
| 1. | Problem Statement (Problem to be solved) | Travel planning is time-consuming and difficult because information is scattered and not personalized. |
| 2. | Idea / Solution description | An AI-based system that generates personalized travel itineraries using destination, duration, and user preferences. |
| 3. | Novelty / Uniqueness | The solution uses generative AI to automatically create customized, day-wise travel plans instantly. |
| 4. | Social Impact / Customer Satisfaction | It simplifies travel planning and helps users save time while making better travel decisions. |
| 5. | Business Model (Revenue Model) | Free basic usage with potential premium features for advanced planning or agency use. |
| 6. | Scalability of the Solution | The system can be expanded to support more destinations, features, and users globally. |

4.3 Solution Architecture



PROJECT REPORT

Team id- LTVIP2026TMIDS52031

PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|----------------------------|--------------------------------------|-------------------|---|---|----------|----------|
| Customer (web/Mobile user) | Trip Planning & Itinerary Generation | USN-1 | As a user, I can enter destination, duration, and preferences to plan my trip | I can submit travel details successfully. | High | Sprint-1 |
| | | USN-2 | As a user, I can generate a personalized travel itinerary using AI | The system generates a detailed itinerary. | High | Sprint-1 |
| | | USN-3 | As a user, I can view daily activities, attractions, and recommendations | Itinerary shows day-wise schedule. | High | Sprint-1 |
| | Customization & Interaction | USN-4 | As a user, I can modify or customize the generated itinerary. | Changes update the itinerary. | Medium | Sprint-2 |
| | | USN-5 | As a user, I can regenerate the itinerary with different preferences. | New itinerary is generated based on updated inputs. | Medium | Sprint-2 |
| | Output & Sharing | USN-6 | As a user, I can export or copy the itinerary for future use. | Itinerary can be downloaded or copied. | Medium | Sprint-2 |

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|---------------|-------------------------------|-------------------|--|---|----------|----------|
| | | USN-7 | As a user, I can share the itinerary with others. | Share option works correctly. | Low | Sprint-3 |
| Travel Agency | Client Support | USN-8 | As a travel agent, I can generate itineraries for multiple clients | System handles different inputs for each client | Medium | Sprint-2 |

Project Tracker, Velocity & Burndown Chart: (4 Marks)

| 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 | 01 Feb 2026 | 06 Feb 2026 | 20 | 06 Feb 2026 |
| Sprint-2 | 20 | 6 Days | 08 Feb 2026 | 13 Feb 2026 | 20 | 13 Feb 2026 |
| Sprint-3 | 20 | 6 Days | 15 Feb 2026 | 20 Feb 2026 | 2020 | 20 Feb 2026 |
| Sprint-4 | 20 | 6 Days | 22 Feb 2026 | 27 Feb 2026 | | 27 Feb 2026 |

Team: Santhija, Deepika, Snehalatha, Sai Dinesh

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

Test Scenarios & Results

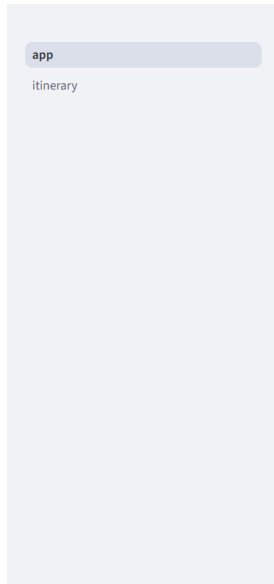
| Test Case ID | Scenario (What to test) | Test Steps (How to test) | Expected Result | Actual Result | Pass/Fail |
|--------------|---|---|---|---|-----------|
| FT-01 | Text Input Validation (Destination & Interests) | Enter valid destination like "Paris" and invalid input like empty field | Valid destination accepted, warning for empty input | Application accepts valid destination and shows warning when field is empty | Pass |
| FT-02 | Number Input Validation (Days & Nights) | Enter valid numbers (3,4) and invalid values (0 or negative) | Accepts valid values, shows warning for invalid range | Valid numbers accepted, warning displayed for invalid values | Pass |
| FT-03 | Itinerary Generation | Enter all inputs and click "Generate Itinerary" | Day-wise itinerary generated based on user input | Personalized itinerary generated correctly | Pass |
| FT-04 | API Connection Check | Check if API key is correct and model responds | API responds and returns generated content | API successfully generated itinerary (when quota available) | Pass |
| PT-01 | Response Time Test | Measure time after clicking generate | Itinerary should generate within 3–5 seconds | Response generated within acceptable time | Pass |
| PT-02 | API Speed Test | Trigger multiple requests quickly | System should handle requests or show proper error | System shows quota message after limit reached | Pass |

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

7. RESULTS

7.1 Output Screenshots



Travel Guide AI

Generate a personalized travel itinerary using AI

Enter your travel destination:

Tirupati

Enter number of days:

1

Enter number of nights:

1

Enter your interests (e.g., adventure, food):

Spirituality

Generate Itinerary



Your Personalized Itinerary

Here's a short 1-day spiritual itinerary for Tirupati:

Day 1: Divine Darshan & Blessings

- **Morning:** Ascend to Tirumala for **Sri Venkateswara Swamy Temple**. Book Darshan tickets online beforehand. Immerse in the divine 'Govinda' chants and serene atmosphere.
- **Afternoon:** Descend to Tirupati and visit **Sri Padmavathi Ammavari Temple** in Tiruchanur, completing the traditional pilgrimage.

Food Recommendations:

- Indulge in the famous **Tirupati Laddu** (prasadam) post-Darshan.
- For lunch, savor an authentic South Indian vegetarian **Thali**.

Travel Tips:

- Adhere to the traditional dress code (modest attire).
- Book Darshan slots well in advance.
- Keep belongings secure.

Cultural Insights: Devotees believe offerings to Lord Venkateswara, including hair tonsuring, fulfill wishes and purify the soul. The pilgrimage reflects profound faith in the 'Lord of Seven Hills' and is a deeply spiritual experience.

[← Back to Home](#)

PROJECT REPORT

Team id- LTVIP2026TMIDS52031

8. ADVANTAGES & DISADVANTAGES

8.1 ADVANTAGES

- Generates personalized travel itineraries instantly.
- Saves time and reduces manual trip planning effort.
- Provides day-wise structured travel plans.
- Simple and user-friendly interface.

8.2 DISADVANTAGES

- Depends on internet connection.
- Limited by API usage quota.
- May not always provide perfectly accurate suggestions.
- Does not include real-time booking or pricing information.

9. CONCLUSION

Explore with AI simplifies travel planning by generating personalized, day-wise itineraries quickly and efficiently. It demonstrates how intelligent systems can enhance user experience and make trip planning easier.

10. FUTURE SCOPE

- Add hotel and flight booking integration.
- Include budget-based itinerary planning.
- Add real-time weather and map integration.
- Support multiple languages for global users.

Github : [link](#)