TravelCoPilot – AI Travel Planner

Final Project Presentation

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2. **Product Overview**

Travel Co-Pilot is an AI-powered mobile app that helps users effortlessly plan personalized travel itineraries, manage bookings, and receive real-time travel insights.

3. Vision Goals

Vision: To become the go-to AI assistant for modern travelers who want personalized, stress-free, and budget-conscious trip planning.

Goals:
- Reduce trip planning time by 80%
- Provide itineraries tailored to group type, budget, and local conditions
- Build a trusted, community-driven experience exchange platform

4. Problem Statement

Users face information overload, scattered booking platforms, and lack of personalization when planning trips.

5. Target Users / Personas

Based on surveys and interviews, we identified diverse traveler types like Shreeja (developer), Varman (CISF), Sahana (teacher), and others with unique planning needs.

6. Customer Journey Map (CJM)

We mapped the traveler's journey from inspiration to post-trip reflection.

🔗 **CJM Figma Link:**
https://www.figma.com/make/4G4qxoQCHS00LBAUXTSqNF/Customer-Journey-Map?node-id=0-4

7. Solution Summary

Travel Co-Pilot uses OpenAI GPT to auto-generate itineraries based on budget, interests, and group type.

8. Core Features

- AI-generated itineraries
- Smart travel checklist
- Real-time alerts
- Tiered pricing
- E-vault
- Community sharing

9. Success Metrics

- 10K downloads in 3 months
- 70% itinerary completion
- 60% AI planner usage
- 4.5+ app rating

10. Technical Architecture & AI Justification

Stack: Flutter, Firebase, Python APIs, Colab (GPT-4)
Colab Link:
https://colab.research.google.com/drive/1YfgGe104lsVrRUh-BrOkz5wYcYEb-Fos

11. UX & Wireframes

Low-Fidelity Wireframe:
https://stitch.withgoogle.com/projects/10943748558287587382

High-Fidelity Wireframe (Base 44 App Preview):
https://travel-co-pilot-2e2eb83a.base44.app

High-Fidelity Wireframe (Figma):
https://www.figma.com/make/kEr6UfQbMuCeFsiUOHiEm1/TravelCoPilot-App-Wireframe?node-id=0-4&t=ETQAPPVB7zknd0es-1

12. Responsible AI & Ethics

- No user PII stored
- Bias checks on prompts
- Real-time safety alerts

13. Data Sources

- City.csv: Cities and travel info
- Places.csv: Attractions and details
- Kaggle API used securely

Link: https://www.kaggle.com/

14. Limitations & Risks

- GPT output needs review
- Internet required
- E-vault trust considerations

15. Future Scope

- Voice assistant
- In-app booking
- Multi-user planning

16. Appendix

- Colab link
- CJM Figma link
- Dataset licenses
- Prompt examples

Full PRD Explanation

Product Overview

- **Travel Co-Pilot** is an AI-powered mobile application designed to simplify and personalize the end-to-end travel planning experience for users. It enables travelers to effortlessly generate itineraries based on their interests, group type, and budget, while also offering smart checklists, real-time price breakdowns, safety tips, and local insights.
- The app integrates flights, hotels, activities, transport, and food expenses into a single view, ensuring transparency and budget control. With a sleek UI and intuitive navigation, it caters to solo travelers, families, and adventure seekers alike—bringing convenience, personalization, and planning efficiency into one powerful travel assistant.

Vision & Mission

- Our Vision: Redefining Travel Planning with Intelligence & Ease
- We envision a world where planning a trip is as easy as chatting with a trusted companion. **Travel Co-Pilot** aims to become the go-to AI assistant for every traveler — blending intelligent recommendations, real-time budgeting, local insights, and safety all in one beautifully designed app.
- By 2027, we aim to empower **10M+ users globally** to plan stress-free, personalized, and meaningful travel experiences with zero hassle and full confidence.

Problem Statement

- What Problem Are We Solving?
- Today's travelers face **information overload**, **decision fatigue**, and **fragmented tools** across the travel planning journey. From browsing hundreds of blogs to switching between multiple apps for bookings, budget tracking, and safety tips — the process becomes overwhelming, especially for those with limited time or travel experience.
- There is a growing need for a **single, intelligent assistant** that simplifies travel planning while offering **real-time personalization**, **cost transparency**, and **safety guidance**.
- **Key Pain Points:**
- Too many sources and platforms to plan a trip.
- Lack of personalized recommendations based on group type, interests, or season.
- No single place to view itinerary, costs, and bookings.
- Safety, checklists, and local guidance are often ignored until the last moment.

User persona

- 👩‍💻 **Shreeja – Application Developer, Age 28**
- Travels: 2–3 times a year | Mixed solo/group
- Values: Culture, adventure, and sustainability
- Pain Point: Lack of deep local insights
- Needs: Budget itineraries, personalized activities, cultural tips
- Feature Ask: Real-time recos, packing list, smart itinerary builder

- 🛡 **Varman – CISF Officer, Age 30**
- Travels: 2–3 times a year | With friends
- Values: Reliability and security
- Pain Point: Manual coordination and info overload
- Needs: Group trip planner, alternate backup plans
- Feature Ask: Emergency checklists, quick trip suggestions

- 👔 **Kishore – Businessman, Age 26**
- Travels: 3+ times a year
- Values: Convenience, time-saving, and data security
- Needs: All-in-one app for planning, storage & alerts
- Feature Ask:
  - Community sharing (itineraries, hotels, videos)
  - E-vault for IDs & tickets
  - News/weather alerts pre-trip
  - Travel reminders, local warnings (e.g., oil spill alerts)

- 👨‍💼 **Sanjay – Junior Consultant, Age 25**
- Travels: Occasionally | Prefers curated trips
- Pain Point: Overwhelmed by too much online info
- Needs: Safe, AI-suggested trips with local recos
- Feature Ask: Personalized suggestions, trustworthy safety alerts

- 👱‍♂️🏋️‍♂️ **Madhav Krishna – Trainer, Age 22**
- Travels: Occasionally with friends
- Values: Clear comparisons and value-for-money
- Pain Point: Unclear pricing and overload of choices
- Needs: Itineraries with **Low / Medium / High** package options
- Feature Ask: Price filters, transparent breakdown, experience tiers

- 👩‍🏫 **Sahana – Teacher, Age 24**
- Travels: >3 times a year | Solo traveler
- Values: Budget travel & underrated spots
- Pain Point: What to carry, where to stay
- Needs: Smart checklists, safety tips, cultural experiences
- Feature Ask: Personalized itineraries, packing reminders, solo tips

Customer Journey Map

- A detailed **Customer Journey Map** was created in Figma to understand how different user personas (e.g., solo travelers, family planners, adventure seekers) engage with the product across five key phases:
- **Inspiration**
- **Planning**
- **Booking**
- **During Travel**
- **Post-Trip Sharing**
- This map guided key decisions in our **feature prioritization**, **UX flow**, and **AI touchpoints**.
  🔗 View full CJM here:
  Customer Journey Map – Travel Co-Pilot (Figma)

Core Features That Solve Real Problems

- **The Travel Co-Pilot app is designed with intelligence and simplicity at its core, offering solutions to the key pain points shared by our real users.**
- **AI-Powered Itinerary Builder**
- Personalized suggestions based on interests, group type, season, and budget
- Dynamically adjusts based on user inputs
- **Budget Tier Breakdown (Low / Medium / High)**
- Complete cost transparency across categories
- Helps users like Madhav compare and choose confidently
- **Safety, Weather & Alerts**
- Pre-travel local news and warnings
- Real-time advisories (e.g., weather bans, events)

Core Features That Solve Real Problems (Contd)

- **Community Sharing**
- View others' trips, tips, videos, and hotel suggestions
- Engage with solo travelers and frequent flyers
- **Secure E-Vault**
- Store ID cards, tickets, and personal notes
- Get automated reminders
- **Real-Time Suggestions During Trip**
- Nearby experiences, safety tips, and rerouting if needed
- Personalized "Plan B" generation

Success Metrics

- How Will We Measure Success?

To ensure the product delivers real value, we've defined clear success metrics tied to **user adoption**, **engagement**, and **feature impact**:

- 🚀 **Launch & Adoption Goals**
- 📈 10,000 app downloads within 3 months post-MVP launch
- 🌟 Achieve an average app rating of 4.5+ on app stores
- 👥 70% of users complete their first itinerary within the first session

Success Metrics (Contd)

- 🧠 **Feature Engagement**
- 📌 60% of users use the **AI Itinerary Generator** at least once per trip
- 🧳 50% of users interact with the **Smart Checklist & Reminders**
- 📄 40% upload documents to **E-Vault** for at least 1 trip
- 💬 30% view or share a community post (itinerary, tip, or review)
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- 🔁 **Retention & Feedback**
- 🔄 40% of users return to plan a second trip within 90 days
- 📝 Minimum of 50 qualitative feedback entries from early users
- 🛠️ Bug report turnaround time: <48 hours (post-MVP)

Success Metric (Contd)

- 📈 **Optional (Business Metric – Stakeholder Friendly)**
- Achieve **15% MoM user growth** in the first 6 months
- Reach **100+ unique user-shared itineraries** within 3 months

Technical Stack & AI Justification

- **Our Tech Stack & Responsible AI Approach**
- **Model & Runtime:** GPT-4 via OpenAI API, orchestrated in **Google Colab (Python)**
  - *Colab Notebook:* https://colab.research.google.com/drive/1YfgGe104lsVrRUh-BrOkz5wYcYEb-Fos

Technical Stack & AI Justification Contd

- **Why LLM (vs rule-based):** Faster iteration, natural language itineraries, adaptable to diverse personas.
- **Data Sources:** Public travel datasets via **Kaggle API** (token-based access).
- **Architecture:**
  - Frontend (prototype): Figma → Flutter (planned)
  - Backend (MVP): Python APIs + Firebase
  - Data: Firestore + encrypted storage for E-Vault (IDs, tickets)

Technical Stack & AI Justification Contd

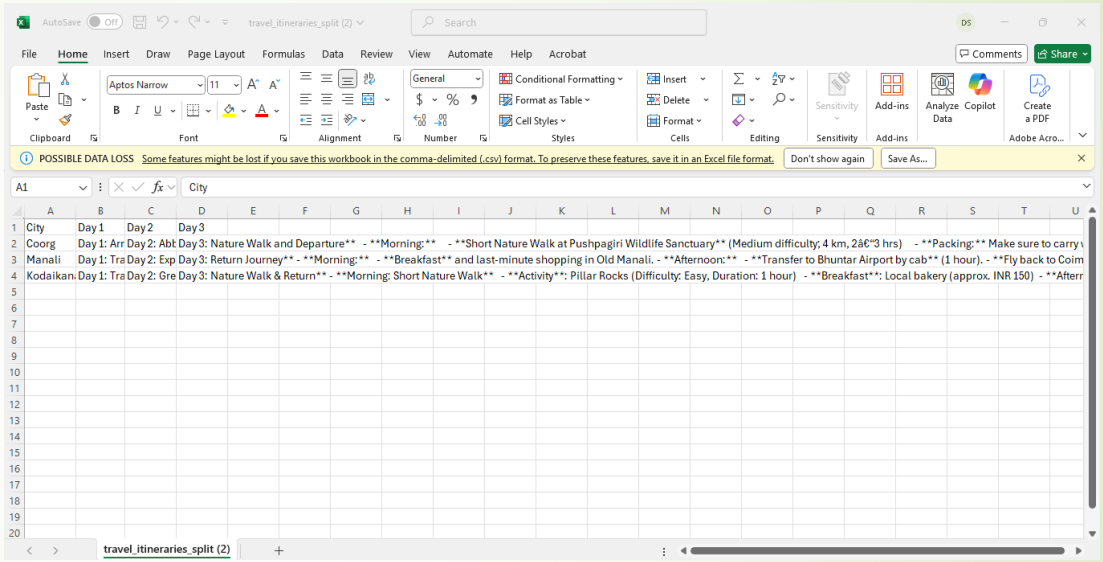
- **Improvement Loop:** In-app feedback (👍 / 👎) → prompt refinements; future fine-tuning on anonymized preference data.
- **Responsible AI:** PII never logged; rate-limits & safety filters; bias checks on recommendations.

Google Colab Output

- Generated Itineraries via AI (Colab Output)
- The TravelCoPilot system leverages OpenAI's GPT-4o-mini to dynamically generate 3-day travel itineraries based on user inputs such as origin city, preferences, and group type.

Google colab Output

- Below is a snippet of the AI-generated itinerary output for three popular destinations — Coorg, Manali, and Kodaikanal — exported in structured CSV format via Colab.



Prompting Strategy & Evaluation

- **Prompting, Guardrails & Quality Checks**
- **Prompting:** System prompts define tone/scope; user prompts capture destination, budget tier (Low/Med/High), group type; tool hints enforce budget caps and safety notes.
- **Guardrails:** Disallow unsafe/off-season activities; surface local advisories (e.g., beach closures).
- **Quality Checks:** Spot SxS tests on itinerary quality; track SxS Win Rate and Hallucination Rate against baseline prompts.
- **Reproducibility:** All experiments logged in the Colab notebook above.

Data Sources & Access

- Data Sources (Kaggle) & Access Controls
- **Kaggle Datasets:** Public, non-PII travel datasets accessed via Kaggle Open API for research/prototyping.
- **Access:** Token stored as kaggle.json in Colab's secure path; not committed to code.
- **Licensing:** Each dataset used under its Kaggle license; attribution retained in PRD Appendix.
- **Privacy:** No end-user PII in model training or logs.

Model Choice

- Model Used: GPT-4o (OpenAI API)
- Why: Better performance for multi-turn and planning tasks.
- No finetuning required – all behavior guided via prompt only (Prompt Engineering).

Prompt Design Strategy

- System prompt: Defines assistant behavior clearly.
- Includes safety, costs in INR, day-by-day format, packing list.
- Handles solo/family/friends/mixed groups differently.
- Community sharing, E-vault, and news alerts included.

Prompt Excerpt

- ‘You are TravelCoPilot, a personalized travel assistant...’
- – Generates day-wise itinerary with costs, meals, stay.
- – Adds safety tips and alternatives.
- – Asks clarifying questions if details are missing.

User Query Example

- Prompt: ‘Plan a 3-day budget trip from Erode for 2 solo travelers with food and trek preferences’
- Automatically identifies nearest airport, suggests travel modes.
- Adds seasonal/weather guidance for December.
- Outputs itinerary in ~10 seconds.

Code Architecture

- 1. Python + OpenAI API integration in Colab.
- 2. Dataset loaded and passed to prompt.
- 3. Outputs cleaned and saved in CSV with split Days 1/2/3.
- 4. Supports multiple cities in batch.
- 5. Outputs available in both text and CSV formats.

Output Format

- CSV columns: City, Day 1, Day 2, Day 3.
- Includes food/stay/transport/activities for each day.
- Exports clean file: travel_itineraries_split.csv.
- Supports download for sharing.

Colab Link

- Code notebook used for execution and validation:
- https://colab.research.google.com/drive/1YfgGe104lsVrRUh-BrOkz5wYcYEb-Fos?usp=sharing

Low-Fidelity Wireframe

- Created using Google Stitch AI tool.
- 5 Key Screens:
- 1. Home: Input preferences
- 2. Itinerary Output
- 3. Safety and Alerts
- 4. Community Feed
- 5. Profile & E-vault
- Link: https://stitch.withgoogle.com/projects/10943748558287587382

High-Fidelity Wireframe

- Created using Figma → imported Stitch screens → made clickable.
- Prototyped full flow including Home → Result → Community → Profile.
- Interactive elements: CTA buttons, navbar tabs, download buttons.
- Link base 44: https://travel-co-pilot-2e2eb83a.base44.app
  Link - https://www.figma.com/make/kEr6UfQbMuCeFsiUOHiEm1/TravelCoPilot-App-Wireframe?node-id=0-4&t=ETQAPPVB7zknd0es-1

Home Screen Design

- • Inputs: Budget, Dates, Group Type, Interests.
- • Sliders/toggles for Adventure, Culture, Relaxation.
- • CTA: Generate Itinerary.
- • Bottom nav: Itineraries | Bookings | Safety | Profile

Itinerary Screen Features

- • Destination name + trip duration.
- • Day-wise trip cards: Activities, Stay, Meals.
- • Map View: Risk Level, Highlights.
- • Buttons: Download CSV / TXT.

Price Breakdown Screen

- • INR rows: Flights, Food, Hotels, Transport.
- • Checklist of Inclusions: WiFi, Museum, etc.
- • Tagline: Real-time Price Updates

Community Feed Screen

- • Feed with itineraries, videos, hotel reviews.
- • Buttons: Like, Comment, Share.
- • Share My Trip: Upload user trip to help others.

Profile / E-Vault

- • Store IDs, Tickets, PDFs securely.
- • Referrals & Gift Cards section.
- • Set reminders, access past plans.
- • Safety Center and Contact Support available.

Guardrails & Constraints

- • No live booking links or personal data.
- • Cost = INR range only (low/mid/high).
- • No medical/legal/real-time info.
- • Live weather only if user asks.

Post-launch Goals

- • Track city-wise popularity.
- • Feature usage: Itinerary / E-Vault / Community.
- • Add user feedback rating.
- • Build Finetuning dataset (thumbs up/down).

Future Plans

- • Integrate live booking APIs (Hotels, Buses, Events).
- • Offline mode for rural travel.
- • Real-time weather + news alerts.
- • Add social login and trip history sync.

Impact

- Solo travelers get safer suggestions.
- Community makes it feel trustworthy.
- Students can afford short breaks with clarity.
- Scales across any city in India.

Final Thoughts

- • Custom GPT-based assistant tailored for Gen Z travel.
- • Solves real user needs with clear value.
- • Fully functional code, UI, and persona alignment.
- • Ready to demo or pitch!

Stake Holder Presentation

Goals & Success Metrics

- 🎯 **Goals:**
- - Make travel planning effortless for Gen Z and millennial users
- - Enable personalized, AI-powered itineraries in under 5 minutes
- - Drive adoption through community features and budget tools

- 📊 **Key Success Metrics:**
- - 10K downloads in first 3 months
- - 70% itinerary completion rate on first session
- - 4.5+ app store rating
- - 60% feature adoption for AI planner
- - 50% checklist & E-vault usage

- 🧠 **AI Metrics:**
- - Side-by-Side (SxS) Win Rate: 75% against baseline
- - Hallucination Rate: <5% via prompt refinements

Responsible AI & Safety Guardrails

- 🔐 **Data Ethics:**
- - No PII stored or used in model fine-tuning
- - Datasets sourced from Kaggle with clear licenses

- ⚠️ **Safety Guardrails:**
- - Filtered prompt templates to avoid unsafe suggestions (e.g., seasonal bans)
- - Location-based travel warnings (e.g., oil spill alerts in Varkala)
- - Validated suggestions with Google Places API

- 🤝 **Bias Mitigation:**
- - Promoted diverse travel experiences beyond top tourist spots
- - Gender-neutral and inclusive activity suggestions
- - Used structured, non-biased datasets for cities & activities

User Experience (UX) – Delightful Travel Planning

- 📱 **Prototypes & Wireframes built in Figma & Base44:**
- - Low-fidelity wireframe (Google Stitch)
- - High-fidelity clickable app (Base44)
- - Visual itinerary planner, price breakdown, checklist, E-vault

- 🔄 **Journey Mapping:**
- - Personas used: solo traveler, family planner, adventure seeker
- - Full customer journey from inspiration to post-trip sharing

- 👩‍🎤 **Gen Z Focus:**
- - Mobile-first design with smart filters and modern UI
- - Community features: share itineraries, comment on trips
- - In-app reminders, alerts, and seasonal suggestions