Title: *Travel Planner with Itinerary Generator — Full Stack Project Development Guide (Pavakie Round)*

📜 Context:

I've been shortlisted for the next round of recruitment at **Pavakie**.
The task is to **build and deploy a Travel Planner web app** with an **automatic itinerary generator** using APIs.
I must **deploy** the frontend on **Vercel** and the backend on **Render**, and submit the hosted link before **Sunday 8:00 PM**.

🎯 Goal:

Help me **develop a complete working project** step-by-step — including **frontend (React)**, **backend (Node + Express)**, **database (MongoDB)**, and **API integration (Google Places + OpenWeather)**.
Provide explanations, best practices, and optimized code where needed.

🧩 Project Overview:

Name: Travel Planner with Itinerary Generator
Purpose: Automatically generate 3–5 day travel itineraries for users based on selected destination, dates, and interests.

⚙️ Tech Stack:

- **Frontend:** React (with Tailwind or Material UI)
- **Backend:** Node.js + Express
- **Database:** MongoDB (Mongoose)
- **APIs:** Google Places API, OpenWeather API
- **Map Integration:** Google Maps Embed API
- **Deployment:**
    - Frontend → Vercel

- Backend → Render

🔧 Core Features:

1. **User Authentication**
    - Sign up / Login / Logout
    - JWT-based authentication
    - Store user itineraries
2. **Trip Setup Form**
    - Input: destination, travel dates, and interests (e.g., adventure, nature, food, culture)
    - Validate inputs
3. **Automatic Itinerary Generation**
    - Use **Google Places API** to get top-rated attractions based on destination & interest
    - Use **OpenWeather API** to fetch 3–5 day forecasts
    - Combine both to generate an itinerary per day
4. **Map Integration**
    - Display all selected locations using Google Maps Embed API
    - Optional: “View on Map” button for each place
5. **Save & Share Itinerary**
    - Save generated itineraries in MongoDB
    - Generate shareable links for each itinerary

📁 Suggested Folder Structure

Frontend (React):

```
src/
 ├── components/
 │    ├── Login.jsx
 │    ├── Signup.jsx
 │    ├── ItineraryForm.jsx
 │    ├── ItineraryCard.jsx
 │    └── MapView.jsx
 ├── pages/
 │    ├── Home.jsx
 │    ├── Dashboard.jsx
 │    └── SavedTrips.jsx
 ├── api/
 │    └── api.js
 └── App.jsx
```

Backend (Node + Express):

```
src/
 ├── routes/
 │    ├── auth.js
 │    └── itinerary.js
 ├── controllers/
 │    ├── authController.js
 │    └── itineraryController.js
 ├── models/
 │    ├── User.js
 │    └── Itinerary.js
 ├── utils/
 │    ├── googleApi.js
 │    └── weatherApi.js
 └── server.js
```

🧱 Backend API Endpoints

Method	Endpoint	Description
`POST`	`/api/auth/register`	Register new user
`POST`	`/api/auth/login`	Login and get JWT token

`POST`	`/api/itinerary/generate`	Generate itinerary using APIs
`GET`	`/api/itinerary/user/:id`	Fetch saved itineraries
`GET`	`/api/itinerary/:id`	Fetch one itinerary (for sharing)

🌦️ API Integration Guide

1. **Google Places API**
    - Use “Text Search” or “Nearby Search” endpoints to get locations.
    - Filter by place type or keyword from user’s interest.
    - API:

      ```
      https://maps.googleapis.com/maps/api/place/textsearch/json?query=${interest}+in+${destination}&key=API_KEY
      ```

2. **OpenWeather API**
    - Get 5-day forecast:

      ```
      https://api.openweathermap.org/data/2.5/forecast?q=${city}&appid=${API_KEY}&units=metric
      ```

    - Extract relevant weather per date.
3. **Combine Data**
    - For each day, select places and assign based on weather (e.g., avoid outdoor spots on rainy days).

🧠 Claude’s Task:

Act as a **senior full-stack mentor** and help me:

1. Build the **backend** step-by-step (Express setup, Mongoose schema, controllers, routes).

2. Then guide through **frontend** (React components, forms, API calls, map integration).
3. Help integrate **Google Places** and **OpenWeather** APIs.
4. Finally, assist in **deploying** backend to Render and frontend to Vercel.
5. Make sure the app works end-to-end (login → itinerary → map → save/share).

🗒️ Deliverables Expected:

1. Fully functional hosted app (React + Node + MongoDB)
2. Google Map + weather integration demo
3. User login + itinerary persistence
4. Polished UI (responsive)
5. README.md (for documentation)

🕐 Deadline:

Submit hosted app link (Vercel + Render) **before Sunday, 8:00 PM (IST)**.