**RoadTrip Planner MVP**

**Project Overview:**

The goal of this project is to develop a web-based application that generates and visualizes road trip itineraries using AI. Users will input basic trip details, and the system will leverage ChatGPT to design a day-by-day travel plan, including cities, attractions, and route ordering. The plan will then be visualized on Google Maps with highlighted routes, pins for stops, and a summary itinerary.

The MVP will focus on simple trip planning — creating an itinerary from start to finish and visualizing it — with the ability to add advanced features (filters, hotel booking, cost estimates) in future versions.

**Skills Required:**

* Python (Flask backend)
* OpenAI API (ChatGPT integration)
* Google Maps Platform (JavaScript API, Places API, Routes API)
* Frontend development (HTML/CSS/JavaScript)
* JSON data parsing and validation

**Key Features**

**Milestone 1: Trip Itinerary Generation**

**AI-Based Trip Planning:**

* Generate a day-by-day itinerary based on:
  + Start location, end location
  + Start date/time, end date/time
  + Maximum daily driving hours
* Ensure each day fits within time constraints (e.g., 9:00 AM start, 10:00 PM latest arrival).
* Include cities/towns for overnight stays and optional attractions per stop.
* Return results in a strict JSON format for easy mapping.

**Milestone 2: Map Visualization**

**Google Maps Integration:**

* Geocode stops and attractions using Google Places API.
* Draw the driving route between all stops using Google Routes API v2.
* Display:
  + Map with polyline route
  + Pins for each city and attraction
  + Estimated drive times and distances per leg
* Show a separate itinerary panel summarizing the trip day-by-day.