

1. Project Overview

The AI-Powered Travel & Food Guide is a system designed to assist travelers in planning their trips by providing recommendations for destinations, accommodations, and food choices. The project leverages AI and data-driven techniques to personalize travel experiences based on user preferences.

2. Objectives

- Develop an AI-based travel assistant that provides personalized recommendations.
- Suggest accommodations and food options based on budget, preferences, and duration of stay.
- Provide users with estimated budgets for their trips.

3. Methodology

The project follows a structured workflow:

1. **User Input Handling:** Collects user preferences such as destination, budget, duration, and food preferences.
2. **Data Processing:** Cleans and structures data related to travel and food options.
3. **Recommendation System:** Uses AI algorithms to suggest travel destinations, accommodations, and dining options.
4. **Budget Estimation:** Computes estimated costs for accommodation, food, and transportation.
5. **Integration with External APIs:** Connects to data sources (e.g., OpenAI API, travel databases) for dynamic suggestions.
6. **User Interaction:** Allows users to refine their choices through feedback loops.

4. Implementation Details

- **Technology Stack:**
 - Datasets from Kaggle
 - Python (Pandas, OpenAI API, JSON handling)
 - Data classes for structured input handling
 - Google Colab integration for cloud-based execution
- **Key Components:**
 - **TravelPreferences Dataclass:** Stores user inputs such as budget, duration, and destination.

- **BudgetEstimate Data class:** Computes cost breakdown for the trip.
- **Recommendation Engine:** Generates personalized suggestions for destinations and food.
- **Google Drive Integration:** Stores and retrieves travel-related data.

5. Results & Insights

- The system successfully provides travel and food recommendations based on user preferences.
- Estimated budgets help users make informed decisions.
- Integration with OpenAI API allows dynamic suggestions, improving user experience.
- The model can adapt based on feedback, refining recommendations over time.

6. Future Enhancements

- Introduce a chatbot interface for conversational interaction.
- Optimize AI algorithms for better accuracy in predicting user preferences.