

Safe Route AI Travel Assistant

ABSTRACT

The Safe RouteAI Travel Assistant is a web-based application developed to help travelers plan safe and personalized trips within Kerala. It utilizes artificial intelligence and machine learning to detect safety risks and provide smart destination suggestions based on user preferences like budget and interests. This system is helpful for tourists, local travelers, and trip planners who want support in choosing safe and smart travel options. The application is built using HTML and CSS for the frontend, Python with Flask for the backend, and stores data in SQLite or CSV files. The system features a rule-based chatbot that interacts with users through predefined questions and responses to collect inputs, receive filtered destination options based on safety levels, and view recommended travel plans tailored to their needs. For safety evaluation, the system uses a Random Forest classification algorithm, a supervised ML technique well-suited for multi-feature classification problems. It analyzes recent weather updates, historical disasters, and health-related concerns to help avoid unsafe routes. The assistant also enables users to mark favourite destinations and leverages previous travel history to generate personalized recommendations. These features enhance user experience by offering more relevant suggestions based on individual preferences and past behavior. By integrating AI, ML, chatbot technology, and personalized recommendation mechanisms, the system offers a practical, safety-aware travel planner that supports informed and confident decision-making for modern travelers.