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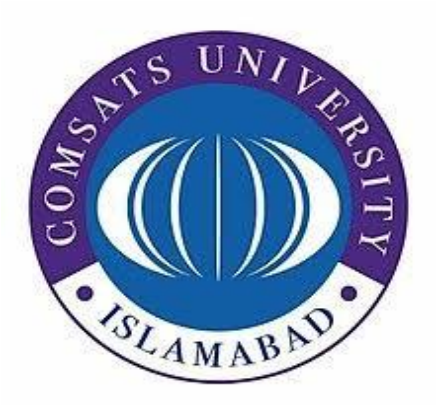

Academic Year 22-26

Department: CS

Project Title:

AI Travel Planner

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Subject:

Human Computer Interaction

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Background

In today's fast-moving digital world, travelers rely heavily on online tools to plan and book their trips. However, most existing travel applications only provide basic services, such as ticket booking or hotel searching, without offering personalized recommendations or AI-based assistance. Users often need to visit multiple websites to check flight schedules, compare destinations, and calculate budgets manually.

The idea of the AI Travel Planner App was developed to solve these common issues. By using Artificial Intelligence and Machine Learning, the app can understand user preferences, interests, and budget to automatically suggest suitable travel plans. It combines image recognition, AI chat assistance, and real-time data integration to deliver a complete and intelligent travel experience.

This project not only focuses on travel convenience but also demonstrates how AI can simplify complex decision-making processes and create a more efficient travel ecosystem for modern users.

Introduction

The AI Travel Planner App is an innovative mobile application that uses Artificial Intelligence (AI) to transform the way people plan and organize their trips. Traditional travel planning often requires hours of searching for destinations, comparing flights, calculating budgets, and arranging schedules. This process can be confusing and time-consuming, especially for users who are not familiar with travel research or booking systems. The AI Travel Planner aims to solve these problems by offering a smart, automated, and personalized travel planning experience — all in one platform.

With this app, users simply provide a few key details such as budget, travel duration, and personal interests, and the system intelligently generates a complete travel itinerary including destination suggestions, activities, and estimated costs. The application also includes an AI Assistant that interacts with users through chat to answer queries, suggest destinations, and help them make better travel decisions. This conversational AI ensures a more engaging and natural user experience.

Another advanced feature of the app is the Image Destination Finder, which allows users to upload a photo of a place they like — for example, a mountain, beach, or landmark — and the app uses AI image recognition to identify and suggest similar travel destinations around the world. This visual discovery makes exploring new places more fun and exciting.

In addition, the app integrates real-time flight information, so users can easily view available flights, schedules, and prices directly from the app. For convenience and safety, it also supports secure payment gateways for booking tickets or packages and fingerprint login authentication to protect user data.

By combining all these technologies, the AI Travel Planner App acts as a complete travel companion, offering personalized recommendations, smart automation, and secure services — making travel planning easier, faster, and more enjoyable. The app is especially useful for travelers who value time, personalization, and technology in their journey planning.

Purpose

The purpose of this project is to develop a smart and user-friendly travel planning app that uses AI to analyze users' preferences, budget, available days, and interests to create personalized travel itineraries. It also provides real-time flight information and secure payment options, ensuring an end-to-end travel solution for users.

Objectives

- To design an AI-powered system that automates travel planning.
- To offer personalized recommendations based on user interests and budgets.
- To integrate real-time flight and booking data.
- To enable secure and convenient payment and login systems.
- To enhance user experience using an AI assistant and image-based destination search.

Problem Statement

Planning a trip can be stressful and time-consuming due to the following reasons:

- Travelers must visit several platforms to collect information about destinations, flights, and costs.
- There is no single platform that provides AI-based personalized trip planning considering user preferences, budget, and travel days.
- Manual planning often leads to confusion, wrong selections, or budget mismanagement.
- Existing travel apps lack interactive AI assistants and visual destination finding features.
- Security and ease of payment are also major concerns for users during online bookings.

Therefore, there is a strong need for a smart, unified travel planning system that can automatically plan trips using AI, provide real-time data, and ensure secure payments — all within one mobile application.

Claims and Assumptions

Claims

- The AI Travel Planner will reduce the time required for trip planning by more than 50%.
- The system will deliver personalized and accurate travel recommendations using AI-based algorithms.
- The app will provide secure user authentication using fingerprint login and encrypted payment gateways.
- The AI assistant will be capable of handling user queries effectively and offering intelligent suggestions.
- The image destination finder will correctly identify similar destinations with at least 80% accuracy (depending on dataset's quality)

Assumptions

- Users will have access to an internet connection while using the app.
- Third-party APIs (for flights, images, and payments) will work reliably.
- Users will provide correct data such as budget, dates, and interests.
- AI models used for recommendation and image detection will perform within acceptable accuracy limits.
- The mobile device will support fingerprint authentication and updated Android/iOS versions.

Key Features

Feature	Description
AI Assistant	A chatbot-style assistant that helps users plan trips, answer queries, and suggest destinations.
Image Destination Finder	Allows users to upload an image; the system identifies similar travel destinations using AI image recognition.
AI Travel Planner	Generates personalized travel plans based on days, budget, and user interests (e.g., nature, adventure, culture).
Real-Time Flights	Integrates APIs to display live flight data, timings, and ticket availability.
Payment Gateway	Provides secure in-app payment for bookings using popular gateways.
User Authentication	Includes login/signup via email and fingerprint for enhanced security.
User Profile & History	Saves user preferences, previous trips, and favorite destinations.

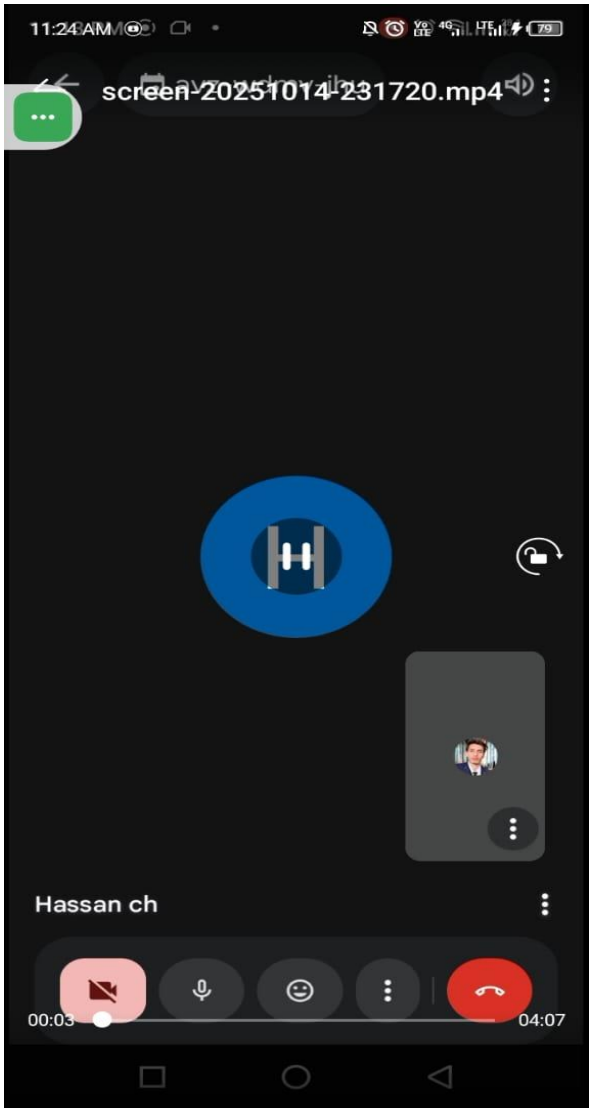
Target Users

- Frequent travelers
- Students and professionals planning vacations
- Families or individuals looking for personalized trip planning
- Travel enthusiasts who prefer AI-based suggestions

Data Gathering Methods

To design and develop the AI Travel Planner App, data will be gathered using multiple sources and methods:

Method	Description
User Surveys & Questionnaires	Collect user preferences, travel habits, and expectations from potential users (students, travelers, professionals).
Interviews	Conduct short interviews with travelers to understand their planning difficulties and desired features.
Online Research	Study existing travel apps (e.g., TripIt, Expedia, Hopper) to identify their strengths and weaknesses.
APIs & Public Datasets	Use open data sources and APIs (like Skyscanner, Amadeus, Google Vision) to gather real-time flight and image data.
AI Training Data	Use sample travel images, destinations, and category datasets to train the AI destination finder.
Feedback Collection	Gather user feedback during prototype testing to improve accuracy and user experience.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