PROJECT IDEA

TravelBrain

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Received: October 8, 2025
Submitted: October 13, 2025

Universidad de las Fuerzas Armadas ESPE

2025

Problem

Travelers today spend significant time and effort planning their trips — searching for destinations, checking weather forecasts, calculating costs, reviewing routes, and organizing itineraries. The information required to make these decisions is often scattered across multiple platforms such as weather sites, mapping tools, transportation apps, and currency converters.

There is a need for an integrated web application that gathers all this data from external APIs and helps users generate a complete, personalized, and dynamic travel plan with minimal input such as destination, dates, and budget.

Overview

The web application is an intelligent travel planner designed to simplify and automate the trip-planning process. Modern travelers often face the challenge of collecting scattered information from multiple sources — such as weather websites, mapping tools, currency converters, and travel guides — just to organize a single trip. This fragmented process consumes valuable time, requires constant comparison, and often results in incomplete or inefficient travel plans.

To address this issue, the web application integrates data from several external APIs, including weather, maps, currency exchange, and image services, to generate a complete, personalized, and dynamic travel plan with minimal user input. By simply entering a destination, travel dates, and budget, users can instantly receive tailored itineraries that include optimal routes, estimated travel times, real-time weather forecasts, and cost conversions.

Background

In recent years, technological advancements have significantly transformed how people plan and experience travel. However, despite the abundance of online tools and resources, trip planning remains a time-consuming and fragmented process. Travelers must often visit multiple platforms such as weather forecast sites, navigation tools, flight and accommodation search engines, and currency converters to gather the information needed to make informed decisions. This manual and repetitive process can lead to inefficiencies, errors, and a less enjoyable travel experience.

At the same time, the rapid growth of public APIs has created new opportunities for developing smarter, data-driven applications capable of integrating diverse information sources. By connecting to weather, mapping, and financial data services, developers can provide users with real-time insights and dynamic travel recommendations.

In this context, the web application aims to address the challenges of traditional trip planning by offering an intelligent and unified platform. It consolidates data from multiple APIs to automatically generate personalized itineraries that consider factors such as destination, travel dates, budget, routes, and local conditions. Through this integration, the web application not only saves time but also enhances decision-making, offering travelers a more efficient, reliable, and engaging way to plan their journeys.

Analyst Comparison

The proposed web application is an intelligent travel planning system that integrates multiple external data sources to create a seamless and automated trip-planning experience. Unlike traditional travel websites that focus on only one aspect of a trip — such as booking flights, checking weather, or locating destinations— this web application combines all these functionalities into a single, user-friendly platform.

Currently, travelers rely on a combination of tools like Google Maps for navigation, OpenWeather for climate information, Booking.com or Airbnb for accommodations, and XE Currency for exchange rates. While each of these tools is useful individually, switching between multiple platforms can be time-consuming and confusing, especially when planning complex or multi-destination trips.

The web application differentiates itself by centralizing this scattered information and presenting it in a unified interface. Through the integration of APIs, it can automatically generate personalized travel itineraries based on user input such as destination, travel dates, and budget. The system dynamically analyzes weather forecasts, calculates route distances and durations, estimates expenses using real-time currency exchange data, and even suggests points of interest or activities.

Compared to existing applications, this web solution focuses on **automation, personalization, and integration.** It eliminates the need for users to manually gather and compare data from different platforms, offering instead a smart assistant that

plans the trip comprehensively. As a result, it enhances efficiency, reduces cognitive effort, and improves overall user experience in travel planning.