

Lab 2 - WiseTraveler Product Specification

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1 Introduction

When people travel domestically or abroad, their main goals are enjoyment, discovering new cultures, and relaxation. In 2023, approximately 48.98 million U.S. residents ventured overseas (3). According to UN Tourism, international tourist arrivals hit 96% of pre-pandemic levels in January-July 2024; 790 million tourists traveled internationally in the first seven months of 2024, about 11% more than in 2023 (15). The customers' lack of knowledge on where they are traveling can expose them to law, safety, and health risks, diminishing their trip enjoyment. They may also encounter challenges like crime, unsafe water, poor sanitation, language barriers, and cultural differences, making finding help difficult.

1.1 Purpose

WiseTraveler, is a Centralized AI Travel Guide that provides a hassle-free, comprehensive experience, allowing travelers to focus on the journey without the stress of navigating multiple sources of information. It also encourages exploration beyond mainstream tourist spots, offering unique, culturally immersive experiences while keeping travelers informed and safe. WiseTraveler consolidates all essential travel information so users can avoid juggling multiple sources of information, provides a map feature for discovering lesser-known spots and local events, and sends alerts for region-specific risks.

1.2 Scope

WiseTraveler keeps travelers informed and delivers tailored suggestions for destinations, attractions, and activities based on user preferences, making trip planning more straightforward and personalized. The user interface will show safety concerns about the customer's destination. Examples are dangerous animal sightings and criminal activity that the customers want to travel.

Health risks such as certain sickness circulating in the area will be shown. Cultural discovery is a feature that tells the user about places they may want to explore. A rating system will be available and the customer can make decisions based on the reviews. Language translation will be a feature to help customers understand the language of their destination.

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1.3 Definitions, Acronyms, and Abbreviations

Centralized Platform: A single location within WiseTraveler where all essential travel information is consolidated, minimizing the need to access multiple sources.

Cultural Understanding: Information on local customs, traditions, and etiquette to foster respectful and immersive travel experiences.

Local Laws: Rules and regulations specific to a destination that may differ from those in travelers' home countries. WiseTraveler includes quick guides on local laws to help travelers avoid legal issues abroad.

Safety Concerns: Information about potential safety issues, such as high-crime areas or specific risks that travelers should be aware of when visiting new destinations.

Personal Health: Alerts and guidelines on health risks such as prevalent diseases or pests in specific regions, along with tips for staying healthy during travel. .

Hidden Gems: Lesser-known attractions, destinations, and experiences that provide an authentic and unique insight into the culture and environment of a location.

Tourist Trap: An attraction that may be overly commercialized or lack authenticity, often with higher prices. WiseTraveler aims to help users avoid these in favor of more genuine experiences.

Real-Time Health and Safety Alerts: Notifications about region-specific health risks or other immediate dangers, helping travelers stay informed and safe.

Personalized Recommendations: Travel suggestions tailored to users' preferences and past selections, allowing for a more personalized and enjoyable trip.

User-Generated Content: Reviews, tips, and experiences shared by WiseTraveler users, enabling travelers to access authentic, community-based insights.

Itinerary Optimization: WiseTraveler's feature for organizing and scheduling destinations efficiently based on proximity and travel times, enhancing trip convenience.

Database Schema: The structured framework of data organization within WiseTraveler, including tables for users, locations, trips, events, and reviews, facilitating efficient data management.

Location Recommendation Algorithm: A feature to suggest destinations or spots based on user interests and travel history. **Trip Scheduling Algorithm:** Logic that manages travel dates, allowing users to add locations to their itinerary.

Data Aggregation Algorithm: Collects and integrates travel data from multiple sources, including third-party APIs.

Itinerary Optimization Algorithm: Arranges locations by travel proximity and schedules them efficiently.

Legal Issues: Potential liability risks WiseTraveler may face if users rely on the app's advice and encounter problems such as illness or injury.

Misinformation: Incorrect or outdated information, which WiseTraveler aims to mitigate by regularly updating content and verifying user contributions.

Cultural Insensitivity: Risks of disrespectful behavior due to unfamiliarity with local customs; WiseTraveler includes guidance to ensure culturally sensitive travel experiences.

User Retention: The process of maintaining active users on WiseTraveler, involving regular updates and new feature releases.

Real-Time Emergency Assistance: WiseTraveler does not provide real-time emergency help; users are advised to contact local authorities in emergencies.

Legal Assistance: WiseTraveler does not offer legal advice or representation; travelers are encouraged to seek professional legal help if needed..

Medical Service: WiseTraveler does not provide medical care or advice; travelers are directed to local healthcare providers for medical issues.

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1.5 Overview

The hardware and software configuration, interfaces, and features of WiseTraveler are included in this product specification. Also, the constraints, user characteristics, assumptions, and dependencies are included as well.

2 Overall Description

The WiseTraveler prototype is going to be an application developed using Visual Studio Code. The interface will be designed for computers. Some of the functionalities are fully implemented in the prototype. Most are partially functional and will be different in the real world product.

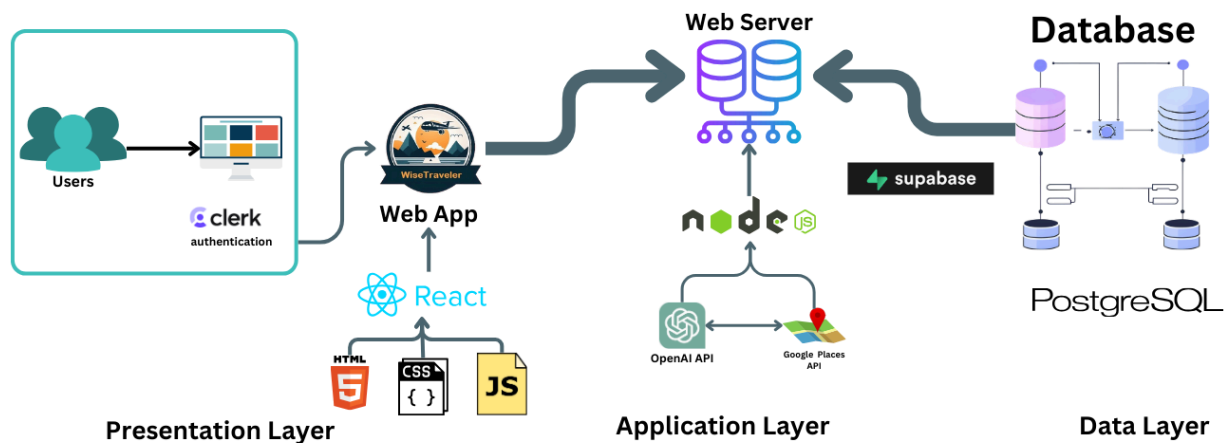
2.1 Product Perspective

The application will use a database named Supabase. OpenAI and Google Places will be implemented as a way for the team to gather names and other information about the places that are included in WiseTraveler. The hardware that is needed for the prototype will be a computer with an internet connection. The operating systems will have to be Mac or Windows.

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Figure 1

WiseTraveler Prototype Major Functional Component Diagram



The presentation layer is where frontend development will be done using React. The languages are HTML, CSS, and JavaScript. Users will create and log into their accounts on the application. WiseTraveler will be connected to a server. The application layer shows how backend development will be done. OpenAI API and Google Places API will be run through Node.js. Data about the locations that are recommended to users as well as their chosen destinations will be gathered for the web app. The data layer shows the integrated database will be Supabase using PostgreSQL. Data such as personal information about the user such as a user's name, date of birth, email, username, and password will be stored in the database.

2.2 Product Functions

Most features that are in the prototype will be partially functional. AI assistance, Centralized Information, and Personalized Travel Recommendations are the only features that

will be fully implemented. The prototype will use AI for assistance in planning and research.

Centralized information about any selected location will be fully functional. Personalized travel recommendations will be given after users have taken the destination quiz or used the app previously. The rating system will be available as well. Customers will be able to use it to rate the places that they have visited.

Table 1

WiseTraveler Feature Description and Prototype Implementation

	WiseTraveler	Prototype	RWP
User Interface	AI assistance for planning and research	Fully functional	Fully Functional
	Safety Concerns (dangerous animal sightings, criminal activity, etc.)	Partially functional	Fully Functional
	Health Risks	Partially functional	Fully Functional
	Cultural Discovery	Partially functional	Fully Functional
	Local Customs	Partially functional	Fully Functional
	User Reviews	Partially functional	Fully Functional
	Centralized Information	Fully functional	Fully Functional
	Language translation tools	Not functional	Fully Functional
	Personalized Travel Recommendations	Fully Functional	Fully Functional
	Calendar	Partially Functional	Fully Functional

Most of the features of the prototype will be partially functional. Safety Concerns will warn people of dangerous animal sightings and criminal activity in the area of a selected location. Health risks will describe any harmful diseases that are in the area. Cultural Discovery will describe places such as restaurants that are exclusive to certain locations. Local Customs will be about the laws and regulations as well as describing what is a custom in a location. User reviews is a rating system used for giving locations a score and recommending them to users. A calendar showing the month, day, and year as well as any holidays in a location will be present. The only feature not included at all in the prototype will be language translation tools. These are used to help translate one language to another for customers.

2.3 User Characteristics

The user will be able to rate any location that they have visited. They will be able to browse itineraries for different destinations. The application can help in better understanding the customs and traditions of the places that are visited. Users can share travel experiences and tips with other users. Discovering local attractions and rating them is another user role. They will be able to discover local events. Hidden gems and lesser-known spots will be shown to the user and can be viewed using a map. Users are expected to know how to follow maps.

2.4 Constraints

N/A

2.5 Assumptions and Dependencies

WiseTraveler will use OpenAI API and Google Places API in order to create features such as listing locations for traveling and maps. The application will require the user to have a data connection such as mobile data or a Wi-Fi connection.