

# WiseTraveler

**Navigate with Knowledge,  
Explore with Confidence**

CS 410 Design Presentation

By: Team Yellow  
Old Dominion University





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# Meet The Team



**Robert Martinez**

Robert is a senior undergraduate student pursuing a BS in Computer Science at Old Dominion University. Some of his hobbies include running, soccer, and reading.



**Amonte Edwards**

Amonte is an undergraduate senior at Old Dominion University. He is currently pursuing a Bachelor of Science degree in Computer Science. In his free time he enjoys playing video games and listening to music.



**Ethan Novak**

Ethan is a senior at Old Dominion University. He is currently pursuing his Bachelor of Science degree in computer science with a minor in computer engineering. In his free time, he enjoys spending time with his family and cooking.



**Indumathi Monson**

A senior at Old Dominion University pursuing a Bachelor of Science degree in Computer Science, in her free time she enjoys adventuring outside and spending time with her dog and family.



**Justin Corley**

Justin is a senior at Old Dominion University pursuing a Bachelor of Science degree in Computer Science. In his free time he enjoys spending time with his family and dog, playing basketball, and snowboarding.



**Dylan Montgomery**

Dylan is a senior majoring in Computer Science at Old Dominion University. He currently resides in Arlington, VA where he works in the non-profit sector. After graduation, he hopes to continue his education by pursuing a Master's in Software Engineering.

# Problem Background

When people travel, whether domestically or abroad, their main goals are usually enjoyment, discovering new cultures, and relaxation. In 2023, approximately 48.98 million U.S. residents ventured overseas<sup>(3)</sup>

According to UN Tourism, international tourist arrivals hit 96% of pre-pandemic levels in January-July 2024, 790 million tourists travelled internationally in the first seven months of 2024, about 11% more than in 2023.<sup>(15)</sup>



# What is the Problem



Travelers often have to search multiple sources for information, leaving them with insufficient research on their destination. This lack of knowledge can expose them to law, safety, and health risks, which can diminish their trip enjoyment. They may also encounter challenges like crime, unsafe water, poor sanitation, along with language barriers and cultural differences that make finding help difficult. As a result, many stick to crowded, well-known spots or fall into tourist traps due to uncertainty about where to explore.



# Problem Characteristics

Multiple resources: Travellers currently have to check multiple sources to find complete information relating to their destination

Cultural Understanding: Detailed information about local customs and cultures is often omitted by popular travel guides, yet “75% (of travelers) seek authentic experiences that are representative of the local culture.” <sup>(1)</sup>

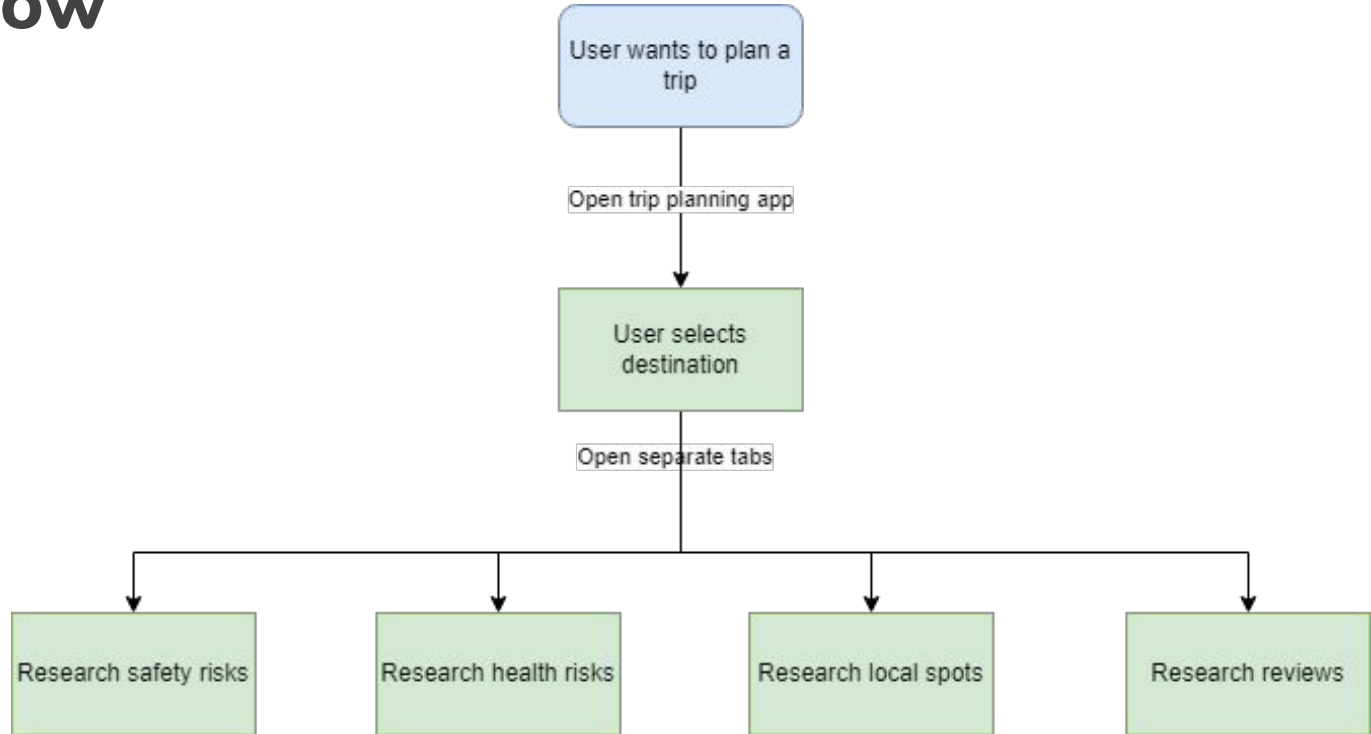
Local Laws: Some countries have unfamiliar laws that travelers may not be aware of. <sup>(14)</sup>

Safety Concerns: Certain travel destinations are prone to having crime targeting tourists and travellers

Personal Health: Travellers are unaware of illness and pest issues

Tourist Trap: About 89% of Americans have visited a tourist trap more than once in the past two years. <sup>(13)</sup>

# Current Process Flow



# Target Audience and Stakeholders

- The primary users of this software will encompass anyone interested in enhancing their travel experiences, learning about new cultures, and better understanding other countries, such as:
  - Tourists
  - Individuals attending business-related trips
  - Students on study abroad programs
- The primary customer base of this software will be travelers
  - Families
  - Business travelers
  - Individual people
- The primary stakeholders of this software are resort companies
  - Local resort companies
  - Business owners
  - Airbnb owners







# WiseTraveler Solution Statement



This Centralized AI Travel Guide provides a hassle-free, comprehensive experience, allowing travelers to focus on the journey itself without the stress of navigating multiple sources for information. It also encourages exploration beyond mainstream tourist spots, offering unique, culturally immersive experiences while keeping travelers informed and safe.

# Solution Characteristics

- **AI Integration:** Assists in the researching and planning for trips
- **Centralized Platform:** Consolidates all essential travel information, so users avoid juggling multiple sources of information
- **Hidden Gems and Local Experiences:** Offers a map feature for discovering lesser-known spots and local events
- **Real-Time Health and Safety Alerts:** Sends alerts for region-specific risks, keeping travelers informed
- **Personalized Recommendations:** Delivers tailored suggestions for destinations, attractions, and activities based on user preferences, making trip planning easier and personalized



# WiseTraveler Characteristics - Safety & Health

- While using WiseTraveler, users can do the following:
  - Access quick, concise guides on local laws and potential health risks for foreign visitors
  - Understand the safety concerns and risks associated with the country they are visiting
  - Read information about local wildlife and any harmful diseases that they might carry
  - See contact information to local medical centers and police stations



# WiseTraveler Characteristics



- While using WiseTraveler, users can do the following:
  - Better understand the customs and traditions of the country they are visiting
  - Share travel experiences and tips with other users
  - Discover local tourist attractions
  - Rate and review various attractions, restaurants, and hotels
  - See hidden gems and lesser-known spots that the destination has to offer
  - Discover local events or activities that are occurring during their visit
  - View user reviews and ratings for attractions, restaurants, and hotels
  - A map highlighting lesser-known spots for a truly unique and authentic travel experience



# Mapping Problem Characteristics to Solution Characteristics

## *Multiple Resources*

**Problem:** Travelers struggle to find complete information by using miscellaneous websites.

**Solution:** WiseTraveler provides a single platform for complete destination information.

## *Local Experiences*

**Problem:** Travelers often miss out on local hidden gems and attractions.

**Solution:** WiseTraveler will feature a map that highlights unique spots for an authentic travel experience.



# Mapping Problem Characteristics to Solution Characteristics

## *Local Laws*

**Problem:** Legal information on local laws is often unknown to tourists.

**Solution:** WiseTraveler will provide easy to understand legal documents explaining the local laws specific to each country.

## *Safety Concerns*

**Problem:** Travelers are often unaware of safety concerns with their travel destinations.

**Solution:** WiseTraveler will automatically send users alerts detailing any diseases, dangerous animal sightings, or safety concerns that tourists need to be aware of.



# Mapping Problem Characteristics to Solution Characteristics

## *Communication Issues*

**Problem:** Tourists often have difficulty in communicating with the locals due to language barriers.

**Solution:** WiseTraveler will provide language translation tools and common phrases for easier communication.

## *Cultural Misunderstanding*

**Problem:** Travel guides usually do not contain detailed information about local customs, traditions, and cultures.

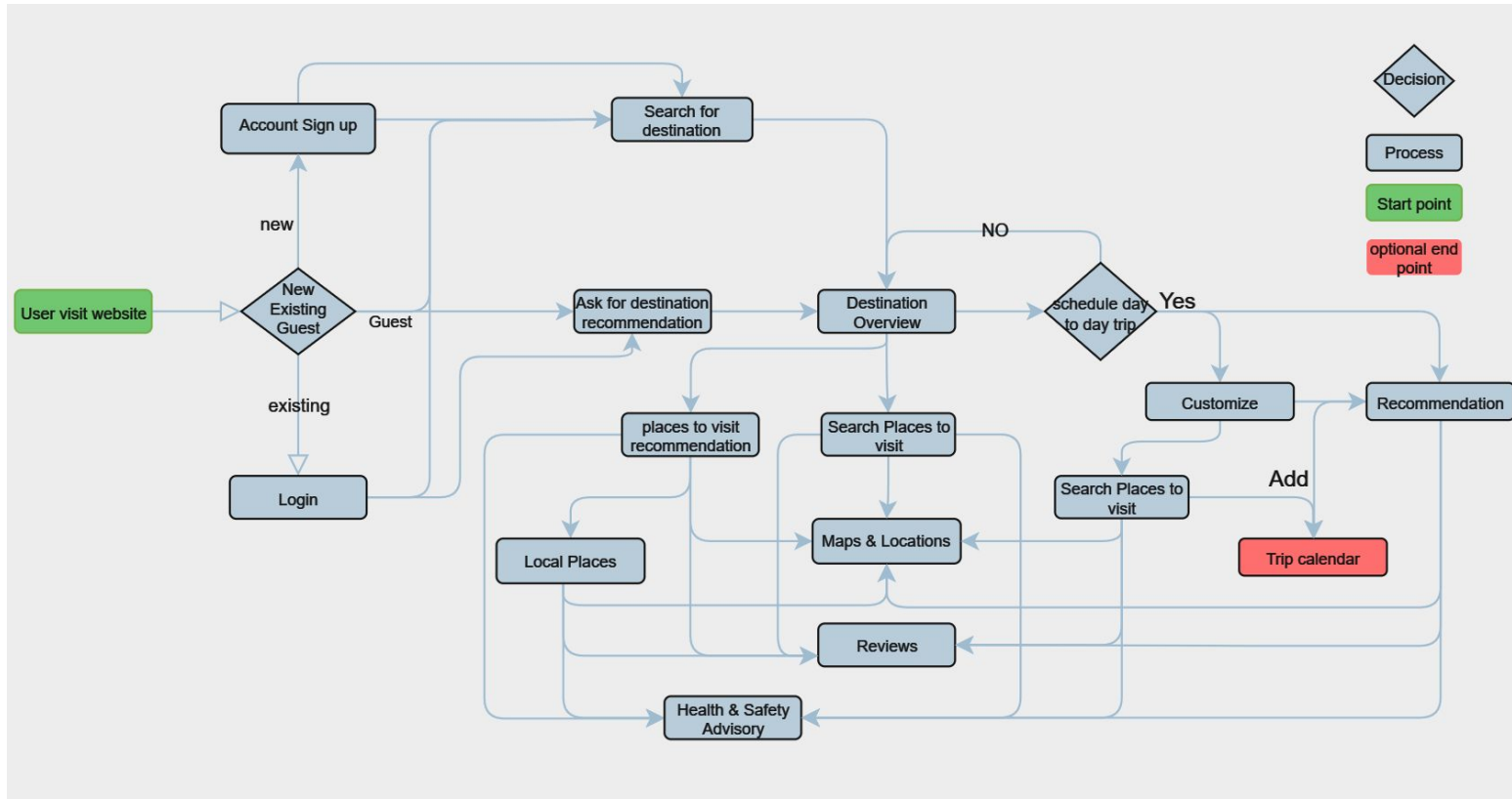
**Solution:** WiseTraveler will offer concise guides on local customs and traditions to help users fully immerse themselves in the culture.

## *Tourist Trap*

**Problem:** Travelers often fall into tourist traps due to a lack of reliable information.

**Solution:** WiseTraveler will provide user reviews to spots where the traveler is, to better understand the place.

# Solution Process Flow







# What it Will Do

A Map to Discover Hidden Spots for a Truly Unique Travel Experience:

- Hidden Travel Gems: Discover underrated and hidden travel destinations for 2024. For example, Bolivia offers unique experiences like the Salar de Uyuni and Lake Titicaca. Other hidden gems include Sardinia in Italy, the Faroe Islands in Denmark, and the Namib Desert in Namibia. Off the beaten path sites and travel destinations.
- Expert Recommendations: Get insights from travel experts on hidden gem destinations like Eleuthera in the Bahamas, the Peloponnese in Greece, and lesser-known spots in Europe such as Villajoyosa and Ares del Maestre.
- User-Generated Content: Leverage a community of travelers who share their experiences and tips on hidden gems, ensuring you get the most authentic and off-the-beaten-path experiences



# What it Will Do

Wildlife: Be aware of local wildlife and avoid contact with animals that may carry diseases like rabies, and cultural differences, for example in Hawaii it is up to a \$100k fine to get close to sea turtles and touch them

Political and Social Unrest: Avoid participating in or being near protest and demonstrations, stay informed about the local political climate

Level 1: Exercise Normal Precautions<sup>(16)</sup>

Level 2: Increased Caution<sup>(16)</sup>

Level 3: Reconsider Travel<sup>(16)</sup>

Level 4 : DO NOT Travel<sup>(16)</sup>

By integrating these features, WiseTraveler aims to provide a comprehensive travel companion that not only enhances your travel experience with insider tips but also ensures your safety and preparedness, making every adventure more enjoyable and secure.

# What it Will Do



- Warnings about crime
  - Users can find out and be aware of high crime areas, and cultural differences for Ex: taking pictures of temples is not allowed and is an arrestable offense in Japan
- In regions with high risk of diseases like malaria or dengue fever, the software will alert the user of this information and provide tips on how to avoid these illnesses, such as:
  - Use insect repellent
  - Sleep under mosquito nets
  - Avoid consuming tap water
  - Be cautious with street food to prevent foodborne illnesses



# What it Will Do

Trip Planning: Develop an overall itinerary for your trip by setting your specific dates and times.

- Selection a location that you want to see and find nearby spots. Add the locations to your itinerary to manage your overall trip.
- Specify lengths of time in every location to make sure you are not overbooking your trip.
- Plan out travel routes and times to ensure you are on time when necessary and not make repeated trips back and forth.  
Increasing overall efficiency of your trip





## What it Will Not Do

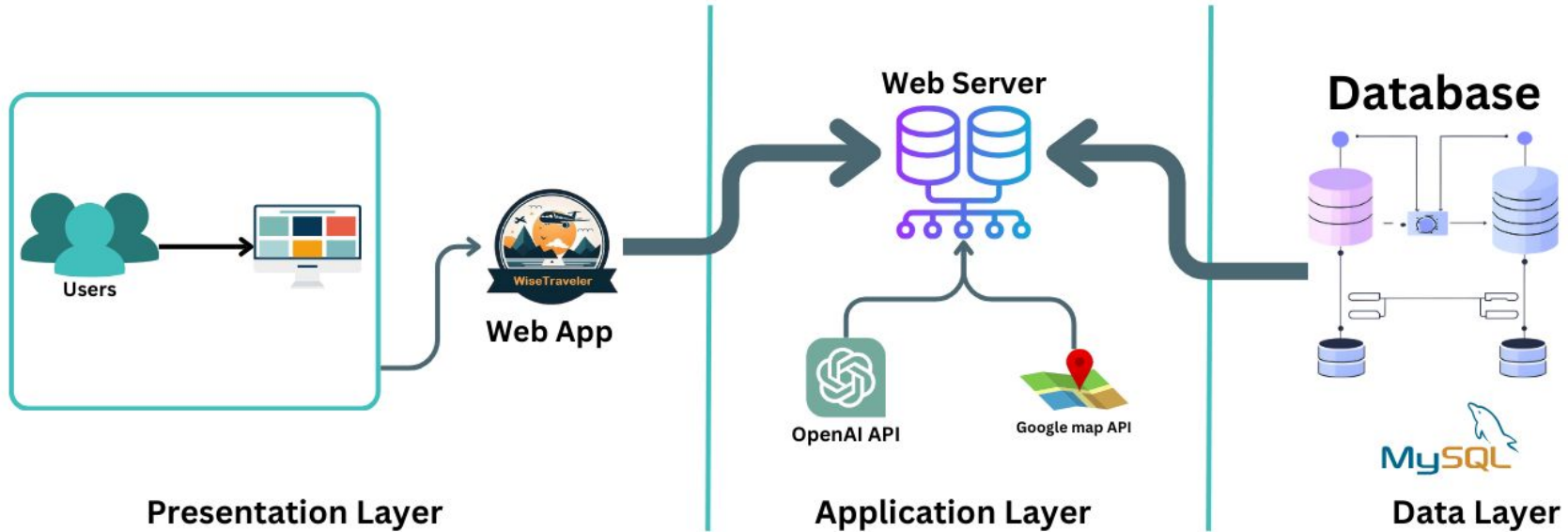
**Real-Time Emergency Assistance :** WiseTraveler will not provide real-time emergency assistance or rescue services; travelers should contact local authorities or their embassy/consulate

**Legal Assistance:** WiseTraveler will not offer legal advice or assistance; travelers should consult with legal professionals or their embassy/consulate for legal matters

**Medical Service:** WiseTraveler will not provide medical services or emergency medical care. Travelers should seek medical attention from local healthcare providers

**Trip planning:** WiseTraveler will not plan the entirety of your stay, including flights, hotel accommodations, and rental accommodations; however, It will guide the traveler by displaying top-rated hotels, local accommodations, and rental accommodations

# Major Functional Components Diagram





# Competition Matrix

	Wise Traveler	TripAdvisor	Lonely Planet	Expedia	YouTube
<b>Safety Concerns</b>	Yes	Limited to user reviews	Details about the most common concerns	N/a	Limited to personal experiences
<b>Health Risks</b>	Yes	N/a	Provides details about the most common concerns	N/a	Rarely covers health risks
<b>Cultural Discovery</b>	Yes	Most popular locations only	Provides details about must see and can skip locations	N/a	Varies by vlogger
<b>Local Customs</b>	Yes	Yes, limited information	Limited information	N/a	Varies by vlogger
<b>User Reviews</b>	Yes	Yes	No	Yes	Yes
<b>Centralized Information</b>	Yes	N/a	N/a	N/a	N/a
<b>Personalized Recommendations</b>	Yes	Yes	N/a	N/a	N/a



# Risks



- Legal Issues
  - If a user gets injured or sick due the advice given on the app, the user might attempt to pursue legal action
- Misinformation
  - Relying on user contributions for hidden gems and famous spots may result in misinformation
  - If information is not constantly updated, this can lead to outdated information
- Cultural Insensitivity
  - If a users provides advice that lacks cultural understanding, this can lead to disrespect towards the locals
- User Retention
  - Continuous updates and new features may be required to keep users engaged long-term





# Technical Risks

		Severity				
		Low				High
Probability	High			R1		
					R2	
		S1				
			S2	R3		
			S3			
	Low					

R1: Features may be inaccessible without an internet connection  
S1: Provide offline capabilities for essential features

R2: Issues with third-party APIs could break features  
S2: Monitor third-party services and implement redundancies as a fallback

R3: The platform may struggle to handle a growing user base  
S3: Use best practices for implementing scalable infrastructure



# Customer Risks

		Severity				
		Low				High
Probability	High					
	Low					

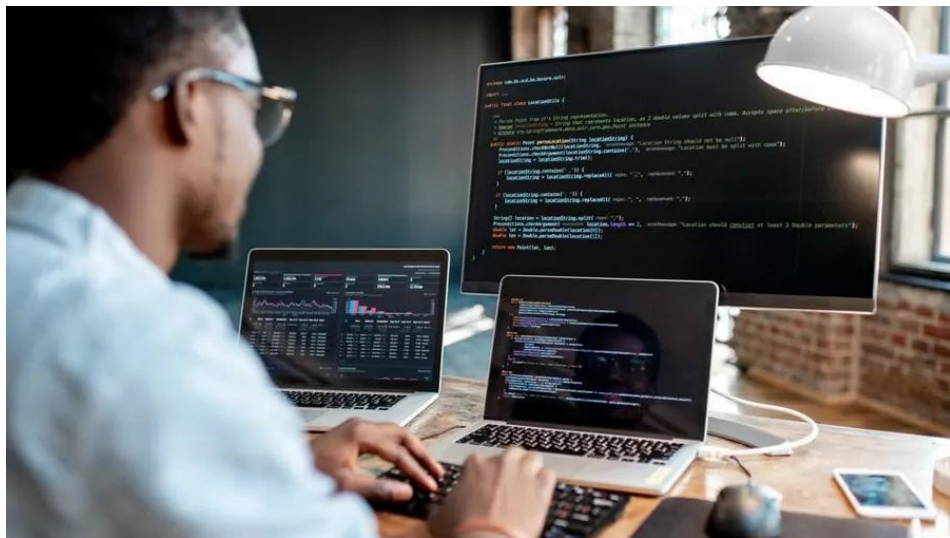
R1: User receives bad recommendations from the app  
S1: Keep content up-to-date by encouraging users provide feedback

R2: User loses interest in using the app  
S2: Provide new features and updates to entice continued use

R3: Users are dissatisfied with the recommendations  
S3: Provide a feedback option for users to give suggestions and critiques

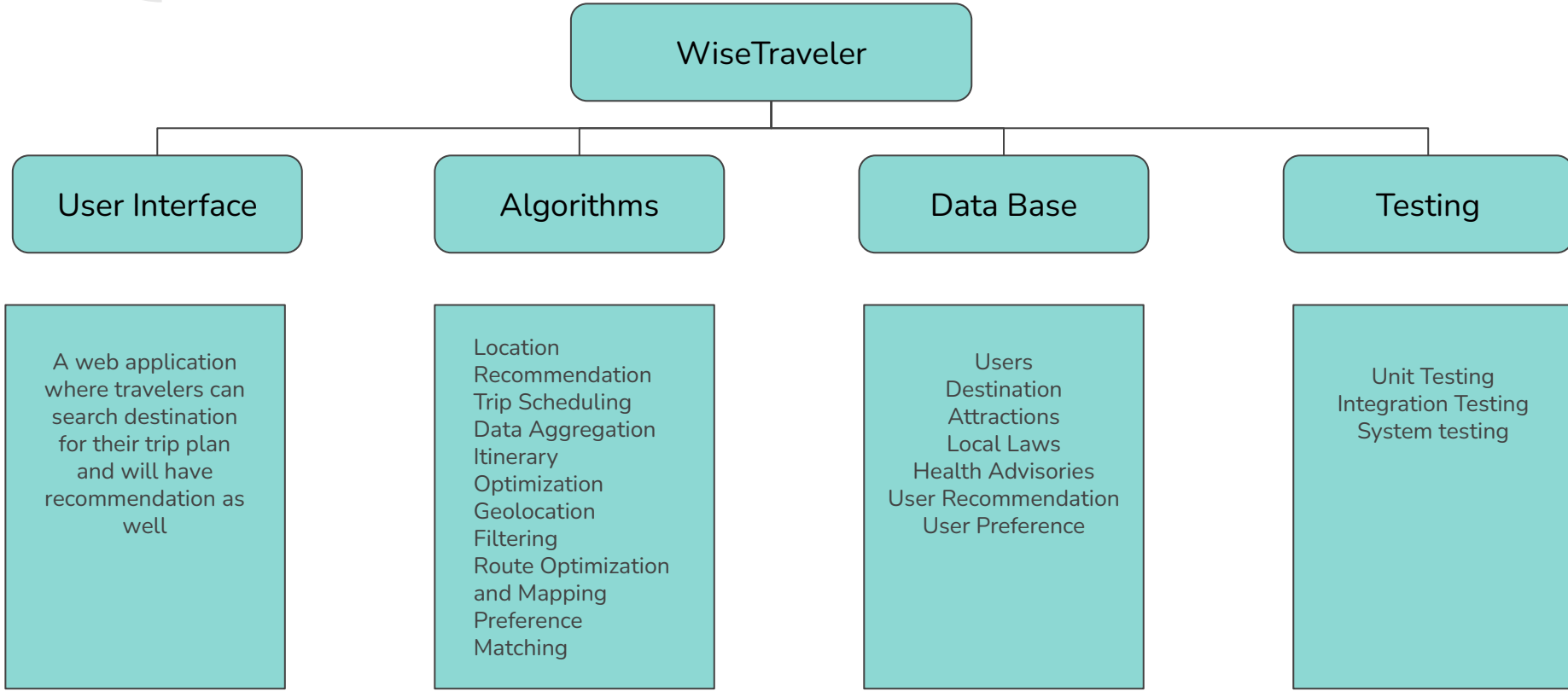


# Development Tools



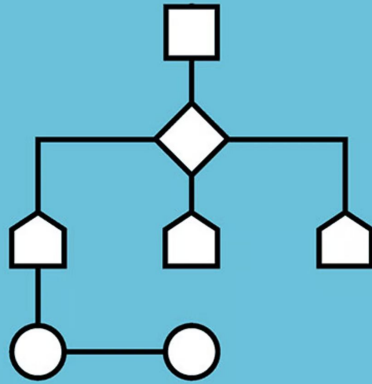
- **Integrated Development Environment (IDE):** VSCode
- **Version Control:** GitHub
- **Continuous Integration (CI) and Continuous Deployment (CD):** GitHub Actions & Workflows
- **Frontend Languages:** HTML, CSS, & JavaScript
- **Backend Language:** Python, or Pearl
- **Database:** SQL
- **Testing Framework:** Jest
- **Documentation Tool:** JSDoc

# Work Breakdown Structure Overview





# Algorithms



Location Recommendation: Algorithm to suggest hot spots, based on user interests or previous selections

Trip Scheduling: Logic to manage and organize travel dates, adding locations to the calendar

Data Aggregation: To pull location details from external APIs

Itinerary Optimization: Organize the locations by travel proximity and schedule them efficiently.

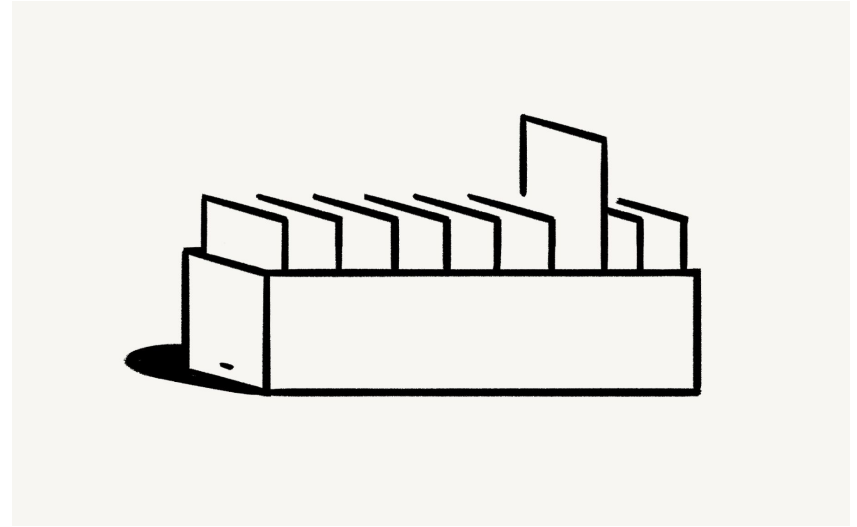
Geolocation Filtering

Route Optimization and Mapping

Preference Matching



# Database Schema



USERS(userID, username, email, password, preferences)

LOCATIONS(locationID, Name, Description, Rating, Coordinates, Category)

TRIPS(tripID, *userID*, tripName, startDate, startTime, endDate, endTime)

EVENTS(eventID, *tripID*, *locationID*, date, time, duration)

REVIEWS(reviewID, *userID*, *locationID*, rating, comments, date)



# Prototype vs Real World Product

	Prototype	Real World Product
User Interface	Basic, Limited Functionality	Full Design and Function
Data	Static Data from Sources	Live Data from API
Calendar	Limited, Manual Entry	Robust and Integrated
Map	Basic Location Points	Location and Travel Time

# Required Libraries, Tools, & Technologies (Dependencies)



**Libraries:** jQuery, Flask, SQLAlchemy

**Languages:** HTML, CSS, JavaScript, Python, SQL, Pearl, PHP

**Frameworks:** LAMP stack, Flask (Python)

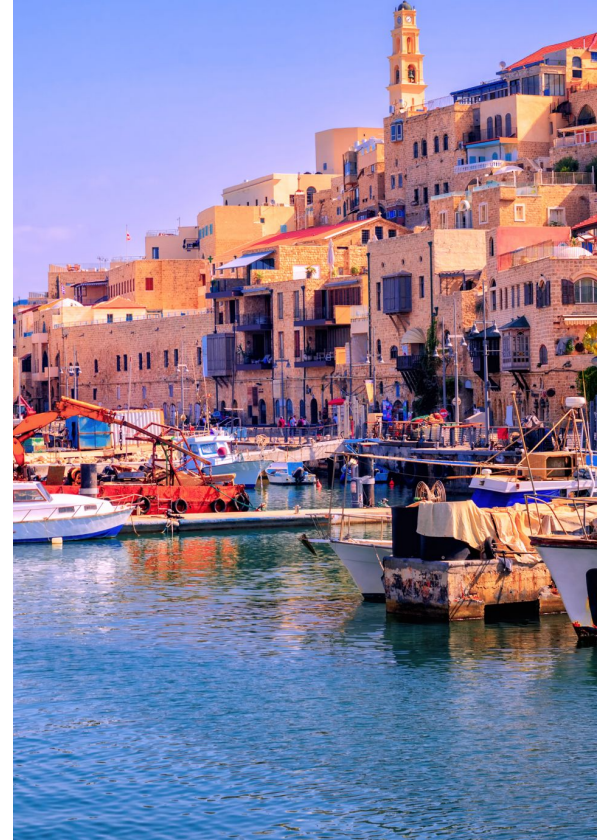
**Other Technologies:** JSDoc, Jest, GitHub, VSCode, Linux, Apache





# Summary

In a world where travel can be overwhelming and risky, WiseTraveler stands out as your ultimate travel companion. While YouTube vlogs, TripAdvisor, and Expedia offer valuable insights, WiseTraveler goes above and beyond these competitors by providing concise, actionable guides on local laws, health risks, and hidden gems. Imagine having a personal travel assistant that not only helps you navigate the unknown but also unveils the authentic, off-the-beaten-path experiences you crave. Whether you are seeking to immerse yourself in local culture or simply want to ensure a safe, well-prepared journey, WiseTraveler is the key to transforming every trip into an unforgettable adventure. Join us in building a vibrant community of informed, confident travelers ready to discover the world's hidden treasures!





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# Thank YOU