

WiseTraveler

Navigate with Knowledge
Explore with Confidence

CS 411 Spring 2025
Team Yellow
Old Dominion University





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Meet The Team



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Meet The Team



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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⁽³⁾

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.⁽¹⁵⁾



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.”⁽¹⁾

Lack of Personalization : Most travel advice is one size fits all. It doesn't adapt to individual interests, needs, or travel styles, which can make planning feel irrelevant or overwhelming

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.⁽¹³⁾



Solution Statement



WiseTraveler is a centralized AI travel guide that simplifies trip planning, offering personalized experiences so travelers can focus on the journey, not the stress. It encourages exploration beyond mainstream spots, providing unique, culturally immersive adventures while keeping travelers informed about health and safety risks.

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



- 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



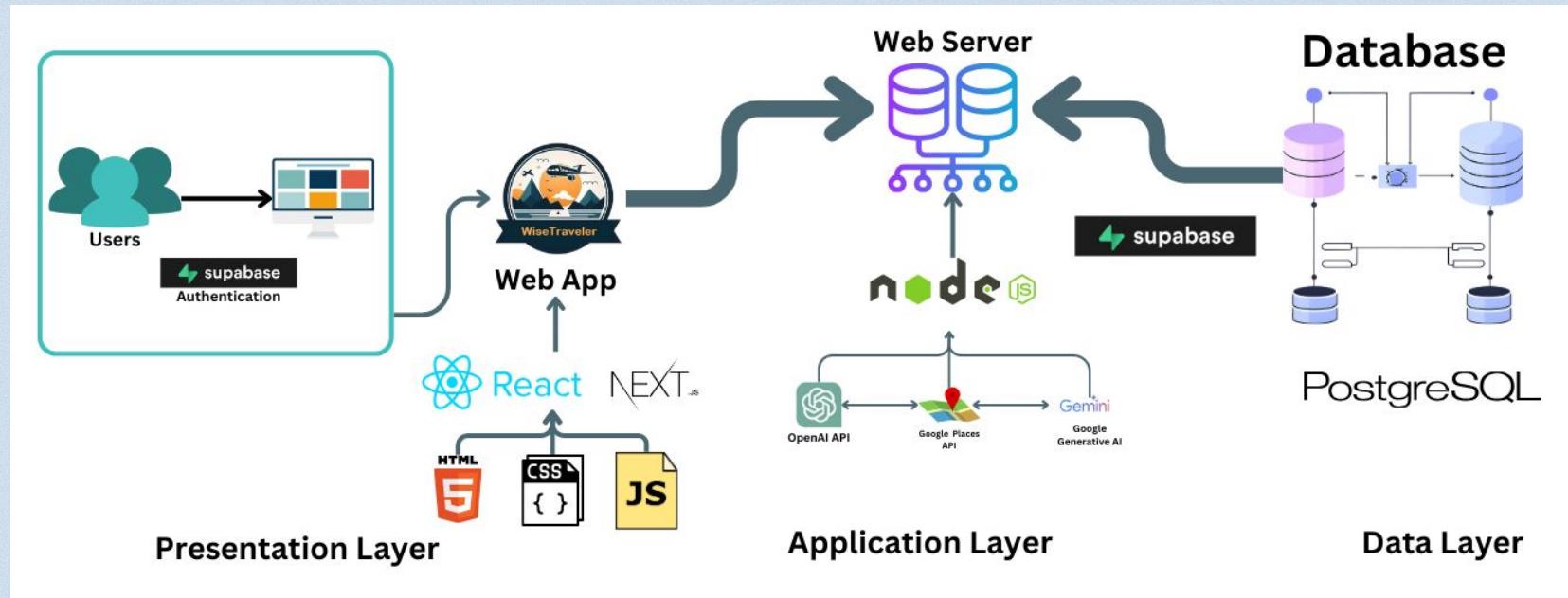
WiseTraveler Characteristics



- **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



Major Functional Components Diagram



Risks



- Security
 - If proper security measures are not taken, customer information can be leaked from the database, such as names, birthdates, phone numbers, etc.
 - Payment information can be leaked if hacking occurs.
- 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



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

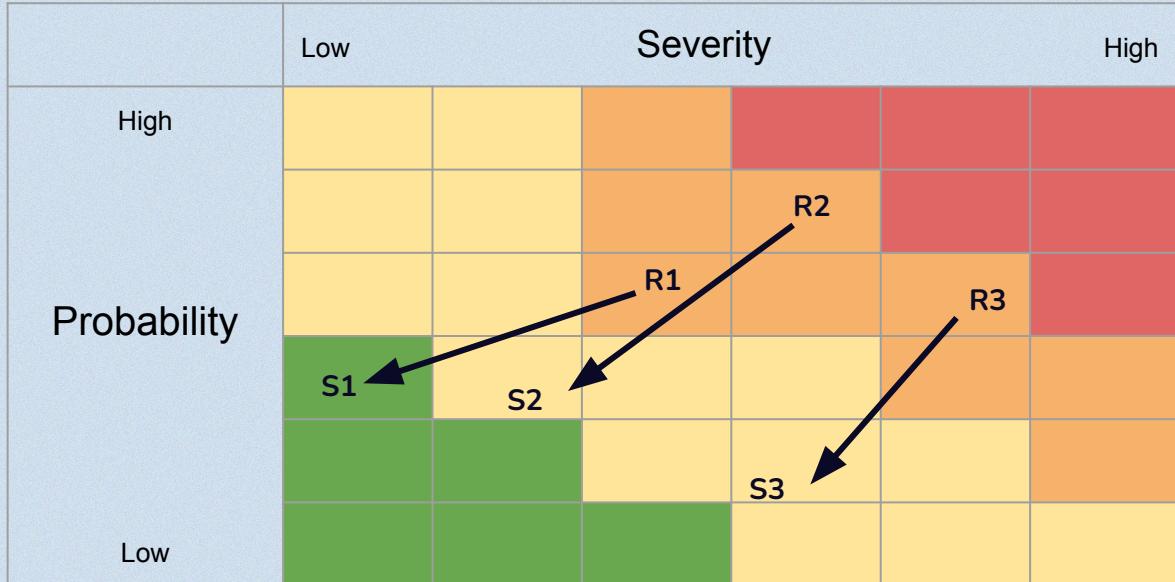
S2: Monitor third-party services and implement redundancies as a fallback

R3: The platform may struggle to handle a growing user base

S3: Use best practices for implementing scalable infrastructure



Customer Risks



R1: User receives bad information from the app

S1: Maintain quality service by ensuring that the information WiseTraveler provides is accurate and clear.

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 way for users to submit feedback about their experiences



Security Risks



R1: Attempts may be made to hack or hijack users' accounts.

S1: Implement multi-factor authentication and require strong, unique passwords

R2: User data could be compromised

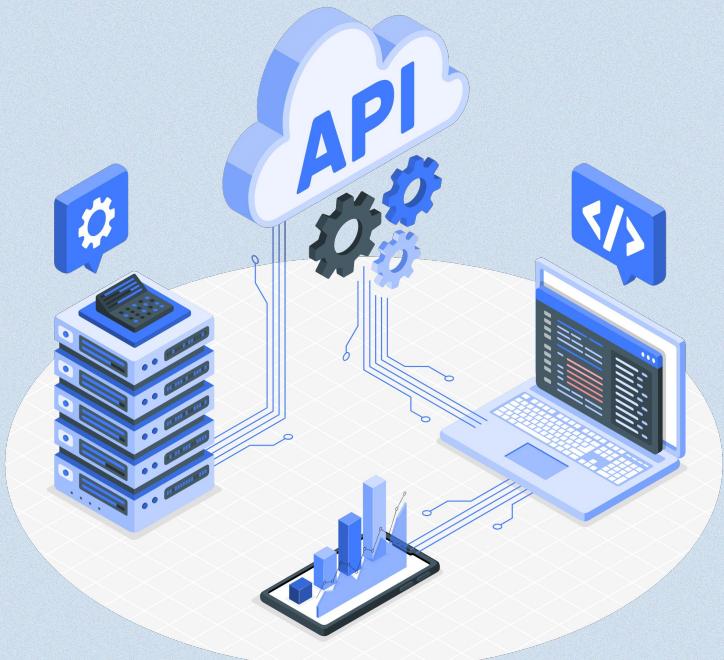
S2: Encrypt data in transit via HTTPS and conduct thorough security assessments, such as penetration testing

R3: Users may encounter malicious links or files that could lead to security breaches.

S3: Display security warnings when users attempt to click on links redirecting away from WiseTraveler content.



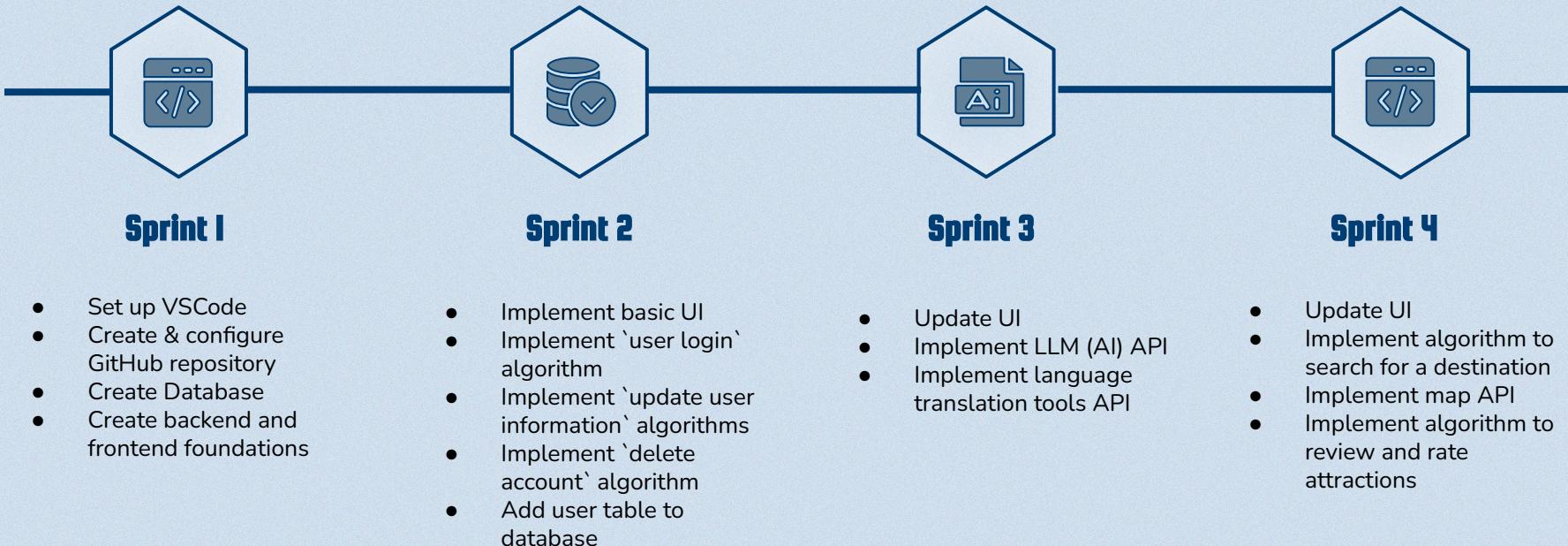
Development Tools



- **Integrated Development Environment (IDE):** VSCode
- **Version Control:** GitHub
- **Continuous Integration (CI) and Continuous Deployment (CD):** GitHub Actions & Workflows
- **Frontend :** HTML, CSS, JavaScript, React
- **Backend :** Node.js
- **Database:** PostgreSQL (Supabase)
- **User Authentication:** Supabase Auth
- **Testing Framework:** Jest
- **Documentation Tool:** JSDoc
- **Formatters & Linters:** Prettier, ESLint



Sprints



Sprints



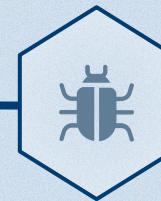
Sprint 5

- Update UI
- Add functionality to access health and safety information
- Add functionality to view local law enforcement contact information
- Implement notifications algorithm



Sprint 6

- Finish UI
- Add mobile responsive design
- Implement security features, i.e., password hashing, database security, HTTPS



Sprint 7

- Debug
- Perform testing
- Publish application

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
Map	Basic Location Points	Location and Travel Time



Features

	WiseTraveler	Prototype	RWP
User Interface	1. AI assistance for planning and research	Fully functional	Fully Functional
	2. Safety Concerns (dangerous animal sightings, criminal activity, etc.)	Partially functional	Fully Functional
	3. Health Risks	Partially functional	Fully Functional
	4. Cultural Discovery	Partially functional	Fully Functional
	5. Local Customs	Partially functional	Fully Functional
	6. User Reviews	Not implemented	Fully Functional
	7. Centralized Information	Fully functional	Fully Functional
	8. Language translation tools	Not functional	Fully Functional
	9. Personalized Travel Recommendations	Fully Functional	Fully Functional
	10. Interactive Map	Fully Functional	Fully Functional



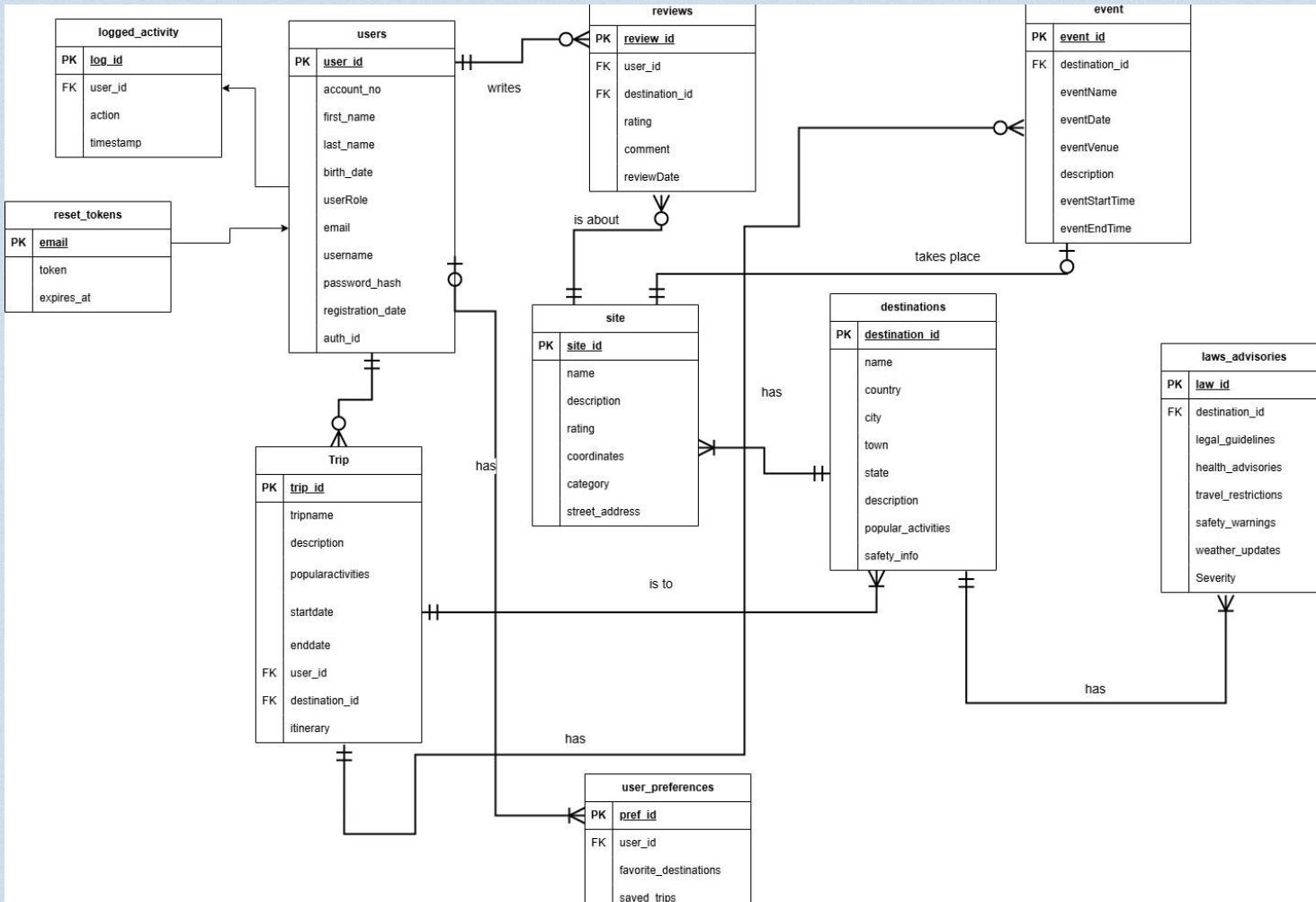
Features

	WiseTraveler	Prototype	RWP
Testing	Unit Testing	Fully Functional	Fully Functional
	System Testing	Fully Functional	Fully Functional
	Integration Testing	Fully Functional	Fully Functional
Account Manager	Web Application	Partially Functional	Fully Functional
	Account Creation	Fully Functional	Fully Functional
	Login	Fully Functional	Fully Functional



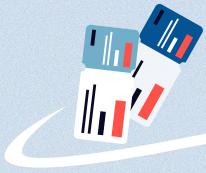


Database Schema: ERD



Challenges

- Language and tool familiarity
- Costly APIs
- Work breakdown
- Feature implementation
- Political climate



Demo



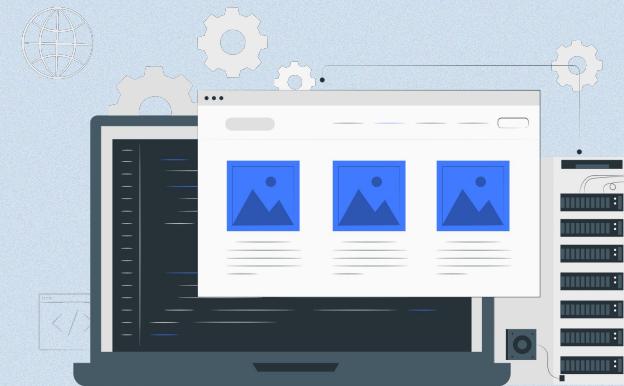
Next Step...

- Keep building on what we have so far
- Add features

Conclusion



- **Centralized AI Travel Guide:** WiseTraveler Offers a hassle-free, all-in-one platform for travel planning.
- **Stress-Free Experience:** Eliminates the need to navigate multiple sources for information.
- **Beyond Mainstream Tourism:** Encourages exploration of unique, culturally immersive destinations.
- **Traveler Safety and Information:** Keeps users informed and ensures safe, well-prepared journeys.
- **Focus on the Journey:** Allows travelers to concentrate on enjoying their adventures.
- **Personal Travel Assistant:** Helps you navigate unfamiliar destinations while uncovering authentic, off-the-beaten-path experiences.
- **Cultural Immersion and Safety:** Ensures a safe, well-prepared journey and facilitates deep engagement with local culture.
- **Unforgettable Adventures:** Transforms trips into extraordinary experiences filled with unique discoveries.



Questions?



References

"Best Practices for Traveler Safety". Travel.State.Gov. Feb 29, 2024.

<https://travel.state.gov/content/travel/en/international-travel/before-you-go/about-our-new-products/Best-Practices-for-Traveler-Safety.html>.

Booking.Com 2023 Sustainable Travel Report, Booking.com, 14 June 2023. (1)

Davies, William. "10 Useful International Travel Tips for First-Time Travelers". GoOverSeas.

<https://www.gooverseas.com/blog/best-international-travel-tips-for-first-time-travelers>.

Johnson, Jake. "Security Risks of Traveling Internationally: The Five Greatest Safety Concerns of Going Abroad."

Jensen Hughes, 9 June 2022,

www.jensenhughes.com/insights/the-five-greatest-risks-to-your-security-when-travelling-internationally.

Kimberli, K. "The most helpful 27 tips for first time travelers." Worldpackers. Sep 27, 2024.

<https://www.worldpackers.com/articles/first-time-travelers>.



References

Lehner, Virginia. "Safety & Security Overseas." CDC Yellow Book 2024: Health Information for International Travel, Oxford University Press,

[https://wwwnc.cdc.gov/travel/yellowbook/2024/environmental-hazards-risks/safety-and-security-overseas.](https://wwwnc.cdc.gov/travel/yellowbook/2024/environmental-hazards-risks/safety-and-security-overseas)

Lisa, Andrew. "Strange Laws to Be Aware of in the Most Popular Countries for Tourists." Stacker, 14 Jan. 2020,
[https://www.stackerm.com/travel/strange-laws-be-aware-most-popular-countries-tourists.](https://www.stackerm.com/travel/strange-laws-be-aware-most-popular-countries-tourists)

"Number of United States Residents Travelling Overseas from 2002 to 2023." Travel: Overseas Tourism US 2023, Statista Research Department, 11 June 2024,
[www.statista.com/statistics/214774/number-of-outbound-tourists-from-the-us/.](https://www.statista.com/statistics/214774/number-of-outbound-tourists-from-the-us/)

Swanson, Maisha. "This Is How Much Time Travelers Spend Researching before Booking a Trip." *TravelWires*, 27 July 2023,
[www.travelwires.com/this-is-how-much-time-travelers-spend-researching-before-booking-a-trip.](https://www.travelwires.com/this-is-how-much-time-travelers-spend-researching-before-booking-a-trip)



References

"Survival Guide to Safe and Healthy Travel." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 30 Nov. 2022, www.cdc.gov/travel/page/survival-guide.

"Travel Alerts". Office of Financial Management. October, 2024.

<https://www.commerce.gov/ofm/offices/office-financial-reporting-policy-internal-controls-and-travel/travel-management/travel-alerts>

"Travel Advisories." Travel Advisories, US Dept of State - Bureau of Consular Affairs,

<https://www.travel.state.gov/content/travel/en/traveladvisories/traveladvisories.html/.>

"Travel & Safety Tips to Know Before You Go". PennState Global. June, 2024.

<https://global.psu.edu/article/travel-safety-tips-know-you-go.>

Turner, Matt. "Stats: 53% of U.S. Adults Say Cultural Immersion Essential to Travel." Travel Agent Central, 17 Sept. 2019,

[www.travelagentcentral.com/your-business/stats-53-u-s-adults-say-cultural-immersion-essential-to-travel#:~:text=Half%20want%20to%20explore%20a,the%20destination%20\(48%20percent\).](https://www.travelagentcentral.com/your-business/stats-53-u-s-adults-say-cultural-immersion-essential-to-travel#:~:text=Half%20want%20to%20explore%20a,the%20destination%20(48%20percent).)



References

- "UN Tourism: Bringing the World Closer." UN Tourism World Tourism Barometer | Global Tourism Statistics, UN Tourism, <https://www.unwto.org/un-tourism-world-tourism-barometer-data>.
- Woolf, Max. "Falling for the Hype? How to Evade Tourist Traps [New Study]." PhotoAiD, 15 Oct. 2024, www.photoaid.com/blog/tourist-traps/.
- "Your Survival Guide to Safe and Healthy Travel". CDC: Centers for Disease Control and Prevention. <https://wwwnc.cdc.gov/travel/page/survival-guide>.
- Bainbridge, L. "How to Build a Location-Based Recommendation System for an E-Commerce Website." *TravelTime*. <https://traveltime.com/blog/location-based-recommendation-system-e-commerce>
- Ortiz, S. "The Best Travel Agent is an AI Algorithm." ZdNet. <https://www.zdnet.com/article/the-best-travel-agent-is-an-ai-algorithm/>
- Merkel, B, et al. November 18, 2016. "A probabilistic algorithm to process geolocation data". *Movement Ecology Journal*. <https://movementecologyjournal.biomedcentral.com/articles/10.1186/s40462-016-0091-8>
- Febrianto, E. August 31, 2023. "Building a Personal Travel Route Optimizer: A Technical Odyssey". <https://medium.com/@van.evanfebrianto/building-a-personal-travel-route-optimizer-a-technical-odyssey-e46b5b49a1fa>



Thank YOU

