University of Central Punjab

BSSE FINAL PROJECT

Wander Wise

Project Advisor

Haroon Abdul Waheed

Presented by:
Group ID: F23SE032

Student Reg#	Student Name
L1F20BSSE0459	SAQLAIN SHAHBAZ
L1F20BSSE0349	SAHER AROOJ
L1F20BSSE0472	AMEER HAMZA

Faculty of Information Technology

University of Central Punjab

Software Design Specification

SDP Phase II

WANDER WISE

Advisor: HAROON ABDUL WAHEED

Team <Team #>

Member Name	Primary Responsibility
Ameer Hamza	Project manager
Saqlain Shahbaz	Backend Developer
Saher Arooj	Frontend Developer

Table of Contents

Revision History

Name	Date	Reason For Changes	Version

Abstract

WanderWise is a cutting-edge web-based travel planning application that revolutionizes the travel exploration process. The project aims to solve the complexity and time consumption associated with trip planning while prioritizing user safety. Utilizing machine learning algorithms, WanderWise offers personalized travel itineraries, real-time safety advisories, and weather forecasts, ensuring each journey is unique, secure, and memorable.

1. Introduction

1.1 Product

Inefficient and static travel planning tools lack personalized itineraries and fail to provide real-time safety advisories based on dynamic factors such as weather forecasts, thereby compromising travelers' experiences and safety during their journeys.

1.2 Background

The domain or background for the problem addressed by WanderWise lies within the travel and tourism industry. In traditional travel planning, individuals often rely on static itineraries, guidebooks, or online resources that may offer generic suggestions but lack personalization tailored to specific preferences, interests, or changing conditions during travel.

The existing tools and platforms typically provide static information without considering real-time factors such as weather forecasts, local safety advisories, or dynamically altering conditions at destinations. This lack of personalized guidance and timely updates can lead to suboptimal travel experiences, unexpected challenges, and potential safety concerns for travelers.

The travel industry, in its conventional form, has been slow in leveraging technology to offer personalized, dynamic travel planning tools that can cater to individual preferences while ensuring up-to-date information for safety and convenience.

1.3 Objective(s)/Aim(s)/Target(s)

- To simplify and enhance the travel planning process for users of varying travel experiences.
- To provide personalized travel suggestions based on user preferences.
- To ensure user safety through real-time advisories and alerts.
- To offer an intuitive and engaging user experience.

1.4 Scope

This Software Requirements Specification (SRS) document outlines the functional and non-functional requirements for WanderWise, a web-based travel planning application. The scope of this SRS includes:

- Development of a user-friendly web interface for trip planning.
- Integration of machine learning algorithms for personalized itinerary generation.
- Implementation of real-time safety advisories and weather forecast systems.
- Ensuring data security and privacy of users.
- Providing support for multiple devices and platforms.

1.5 Business Goals

- **Elevate Travel Planning User Experience:** Enhance the overall user experience by optimizing the process of planning and organizing travel activities to ensure convenience and satisfaction.

- **Real-Time Safety Planning Assurance for Users**: Implement a system that delivers timely and accurate safety advisories in real time to users during their travel experiences, prioritizing their well-being and security.

1.6 Document Conventions

- Font “Arial”
- Font size “12”
- Spacing “1.15”
- Subheading Font “Arial: Bold”
- Subheading Font size “14”
- Heading Font “Arial: Bold”
- Heading Font size “18”

2. Overall Description

2.1 Product Features

- **User-Centric Travel Planning:** Enables users to plan trips by inputting preferences.
- **Machine Learning-driven Itineraries:** Utilizes ML algorithms to generate personalized travel itineraries.
- **Real-time Safety Advisories:** Integrates updated safety information for user destinations.
- **Weather Forecast Integration:** Provides weather forecasts for selected travel locations.

2.2 Functional Description

WanderWise is a comprehensive web-based travel planning application designed to simplify and enhance the travel exploration process for users. The application offers a range of features aimed at providing personalized itineraries, real-time safety advisories, weather forecasts, and seamless navigation. Below is a detailed functional description of the key features:

User Registration and Login: Users can create a new account on WanderWise by providing basic details such as name, email, and password. Additionally, users have the option to register using their Google credentials for added convenience. Once registered, users can log in securely to access their accounts.

Generate Personalized Itineraries: Upon logging in, users can input their travel preferences, including travel dates, interests, budget, and destination preferences. WanderWise utilizes machine learning algorithms to generate personalized travel itineraries tailored to the user's preferences. Users can review and adjust the itinerary as needed before saving it.

View and Modify Itineraries: Users can view their saved itineraries at any time and make modifications as necessary. This includes adding or removing activities, adjusting dates, or making other changes to suit their preferences.

Search Destinations or Activities: WanderWise allows users to search for specific destinations or activities based on keywords or filters. Users can explore search results and access detailed information about selected destinations or activities.

Create Travel Profile: Users have the option to create and set up their travel profiles, where they can save their preferences for future use. This includes specifying travel destinations, dates, interests, and budget considerations.

Real-Time Safety Advisories: WanderWise integrates real-time safety advisories based on weather forecast data for selected destinations. Users receive immediate alerts or notifications regarding safety concerns or potential hazards at their chosen destinations.

View Weather Forecasts: Users can access weather forecasts for their selected travel destinations to plan activities accordingly. WanderWise retrieves weather forecast data from external sources and displays it to the user in an easily understandable format.

Navigation using Google Maps: The application integrates with Google Maps to provide users with navigational guidance and explore travel destinations seamlessly. Users can plan routes, check points of interest, and navigate to their chosen destinations with ease.

Manage User Settings: Users can manage their account settings, including profile information, notification preferences, and other customizable options. This allows users to tailor their experience according to their preferences.

Overall, WanderWise aims to offer a user-centric travel planning experience by providing personalized itineraries, real-time safety advisories, and weather forecasts, ensuring each journey is unique, secure, and memorable.

2.3 User Classes and Characteristics

1. Regular Users:
Characteristics:
Frequency of Use: Occasional or periodic use for personal trips.
Technical Expertise: Varied levels of technical proficiency, ranging from basic to moderate.
Security Levels: Standard user privileges for accessing travel information and managing personal settings.
Description: Regular users comprise individuals who utilize WanderWise for planning occasional personal trips. They may have diverse travel preferences and requirements, and they rely on the platform to provide them with personalized itineraries, safety advisories, and weather forecasts tailored to their needs.

2. Frequent Travelers:
Characteristics:
Frequency of Use: Regular or frequent use for planning multiple trips.
Technical Expertise: Moderate to advanced technical skills, with familiarity in using travel planning tools.
Security Levels: Standard user privileges with a focus on convenience and efficiency in trip planning.
Description: Frequent travelers encompass users who plan and embark on multiple trips throughout the year. They are experienced in using travel planning applications and seek efficiency and customization in their trip itineraries. WanderWise serves as a valuable tool for streamlining their travel planning process and ensuring safe and enjoyable journeys.

3. Novice Travelers:
Characteristics:
Frequency of Use: Infrequent use, primarily for planning occasional or first-time trips.
Technical Expertise: Limited technical skills, requiring user-friendly interfaces and guidance.
Security Levels: Standard user privileges with an emphasis on simplicity and ease of use.
Description: Novice travelers consist of individuals who have limited experience in trip planning and may feel overwhelmed by the complexities of organizing travel arrangements. They rely on WanderWise to provide intuitive interfaces, step-by-step guidance, and personalized recommendations to help them navigate the process smoothly. The platform caters to their needs by offering user-friendly features and ensuring a hassle-free experience in planning their journeys.

2.4 Design and Implementation Constraints

Integration and Interfaces: Compatibility and seamless integration with existing databases, APIs, and external applications need to be maintained for efficient data exchange and functionality.
Security Measures: Strict security protocols and encryption standards must be followed to safeguard user data and financial transactions, potentially limiting certain design or architecture choices.
Communication Protocols: Compliance with standard communication protocols for secure data transmission and network compatibility might restrict certain integration methods.

2.5 Assumptions and Dependencies

Assumptions:

- Reliability of third-party APIs for weather forecasts and safety advisories.
- Consistency in available data for generating personalized itineraries.

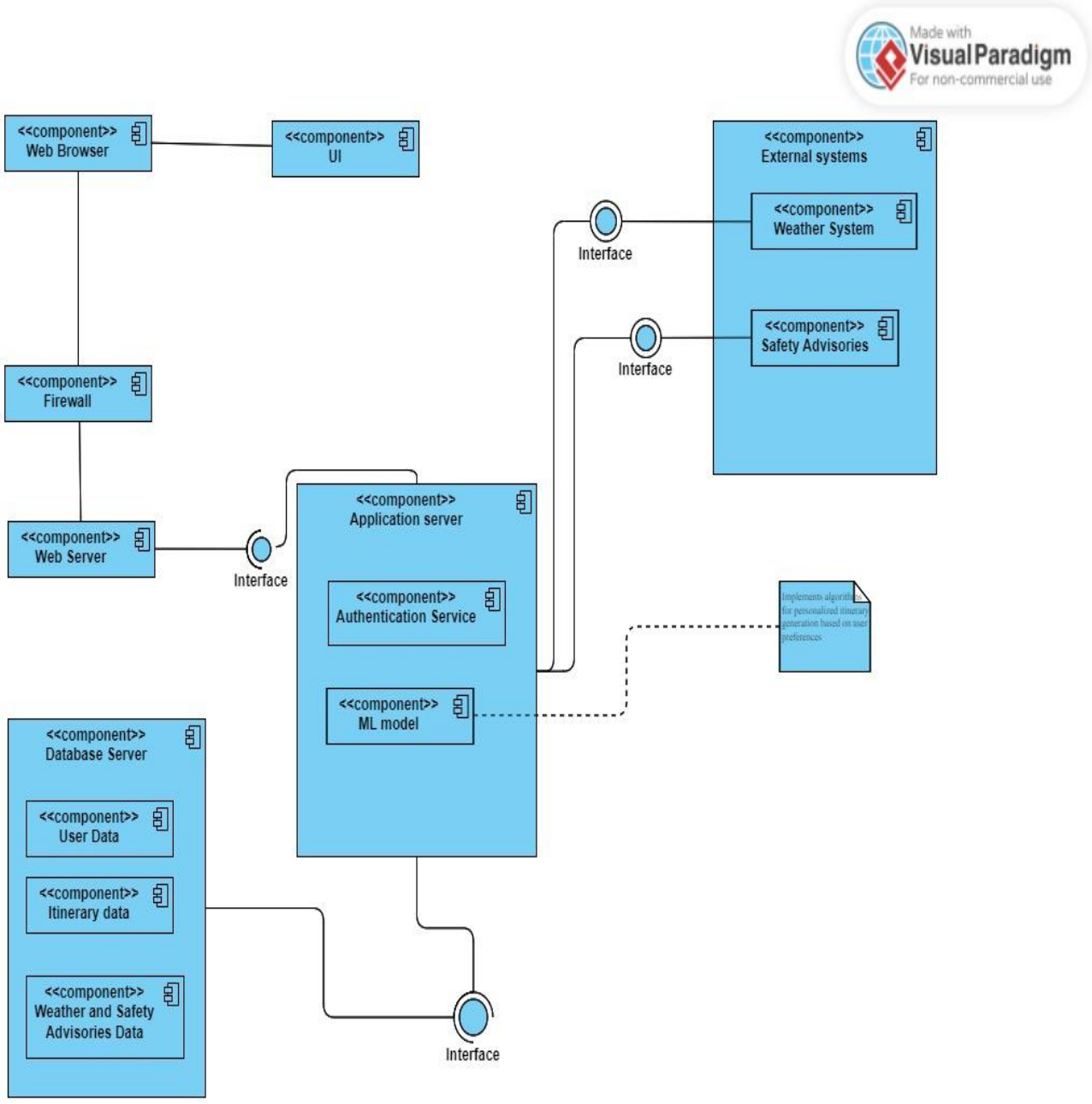
Dependencies:

- Relies on external APIs for real-time weather and safety information.
- Requires a stable internet connection for seamless operation.

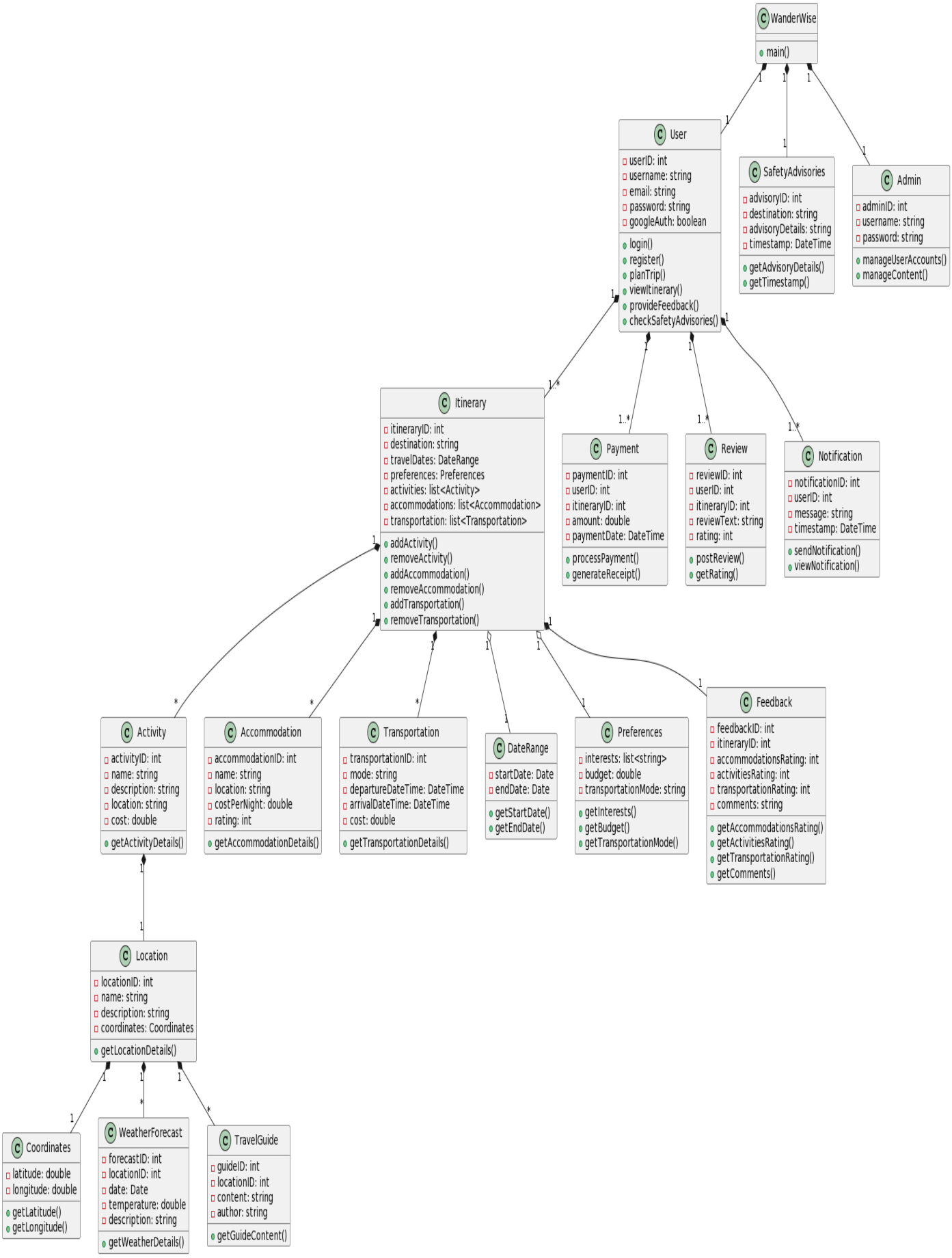
3. Technical Architecture

3.1 Application and Data Architecture

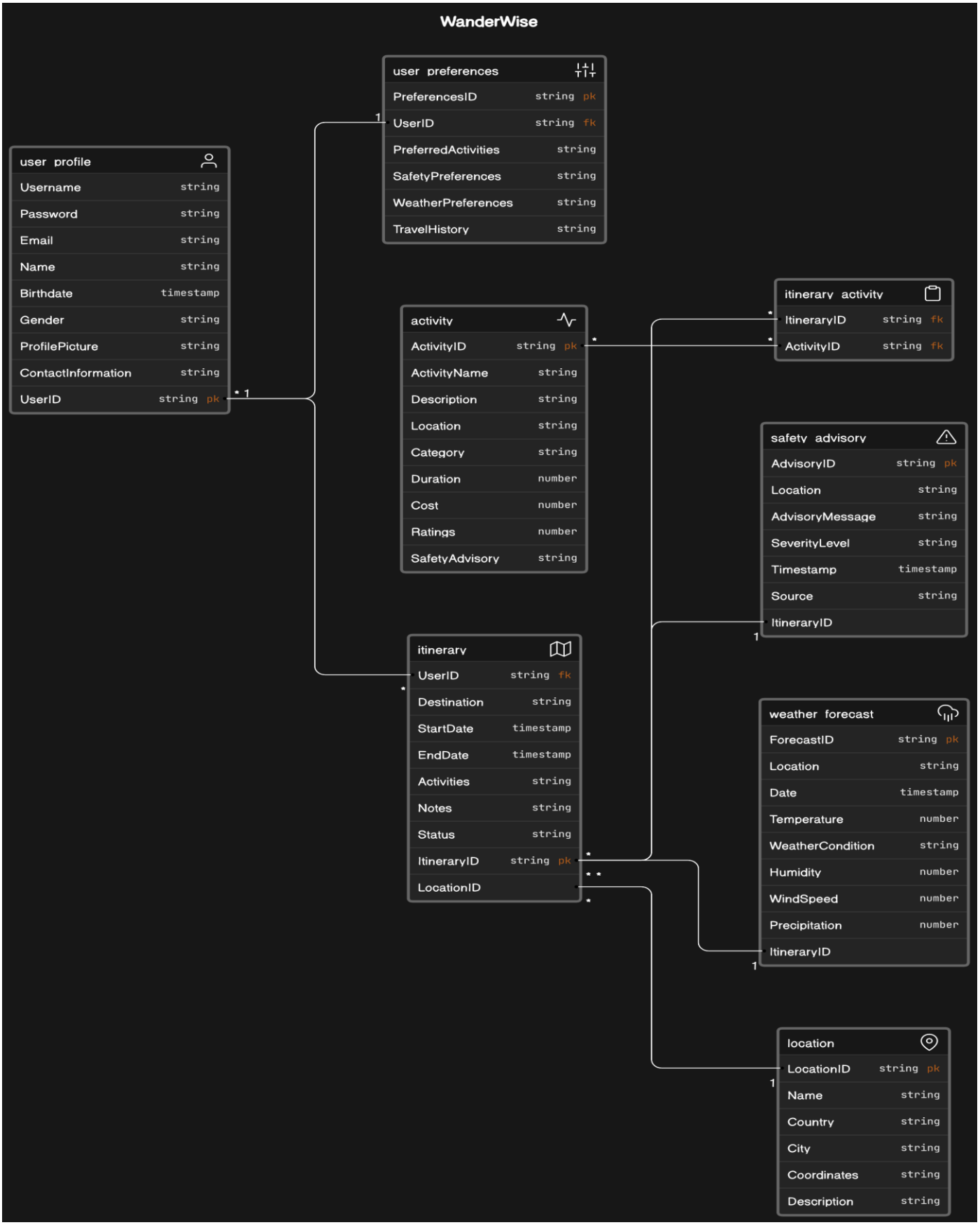
3.1.1 Component Diagram



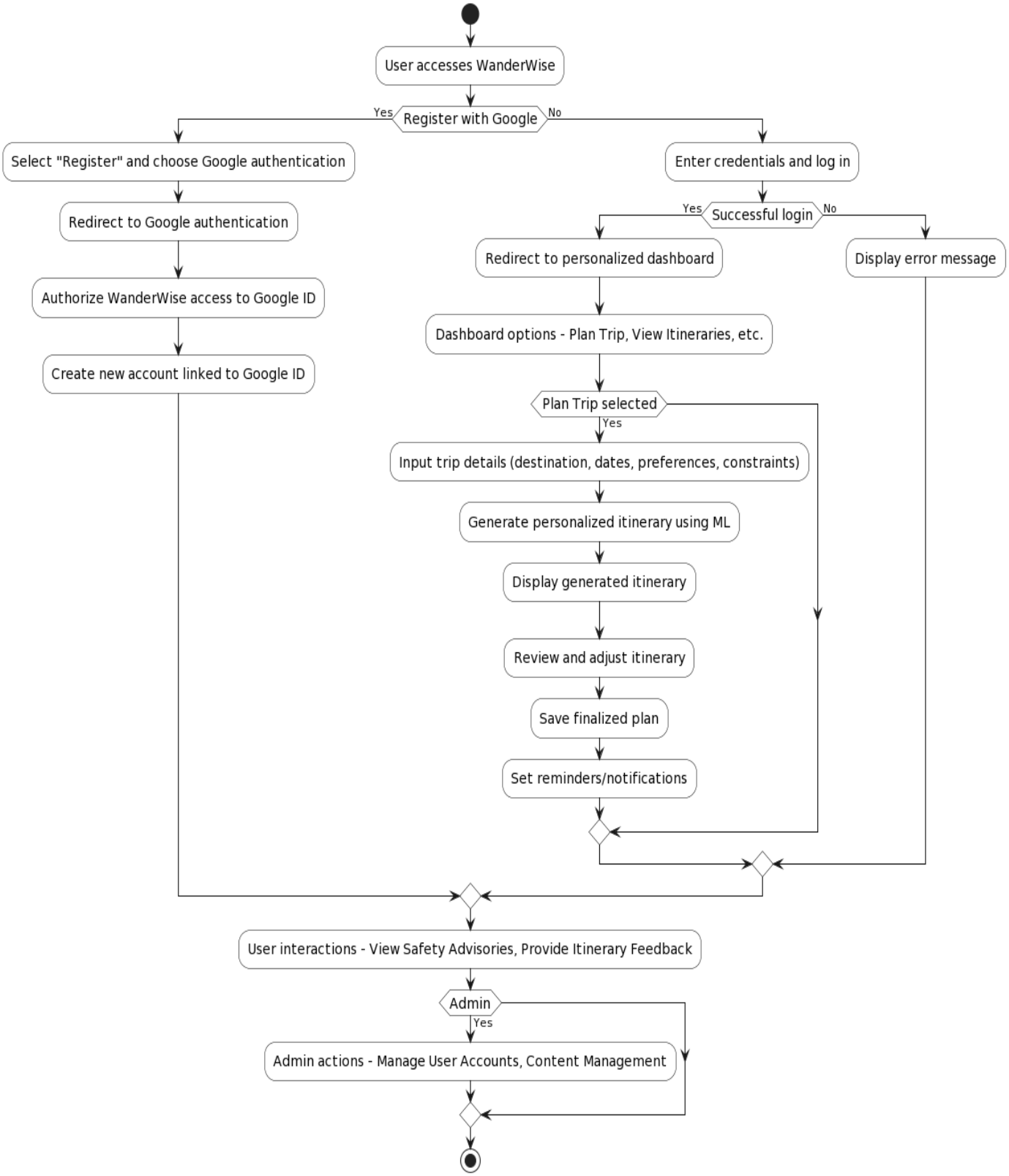
3.1.2 Class Diagram



3.1.3 ER Diagram



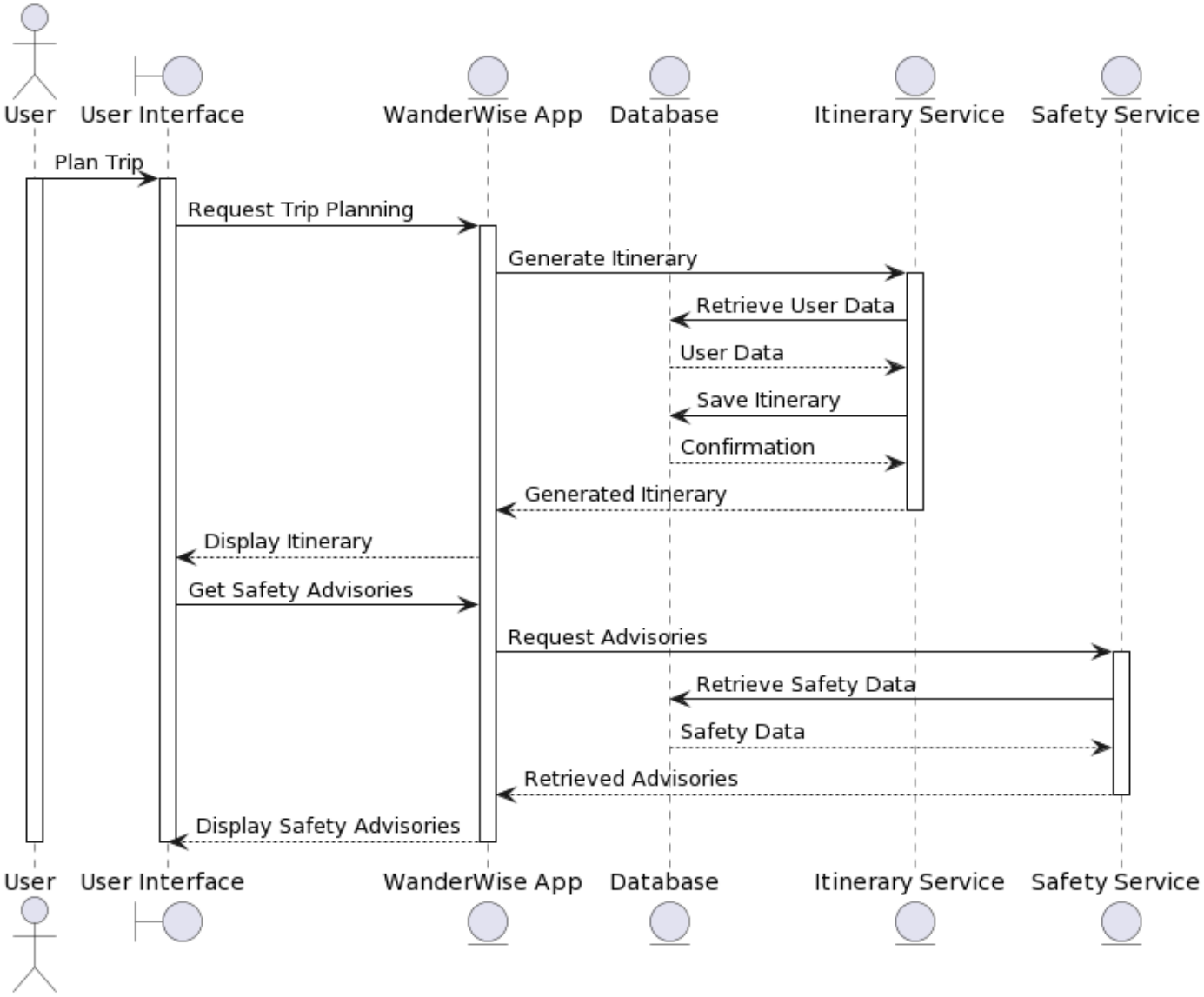
3.1.4 Activity Diagram



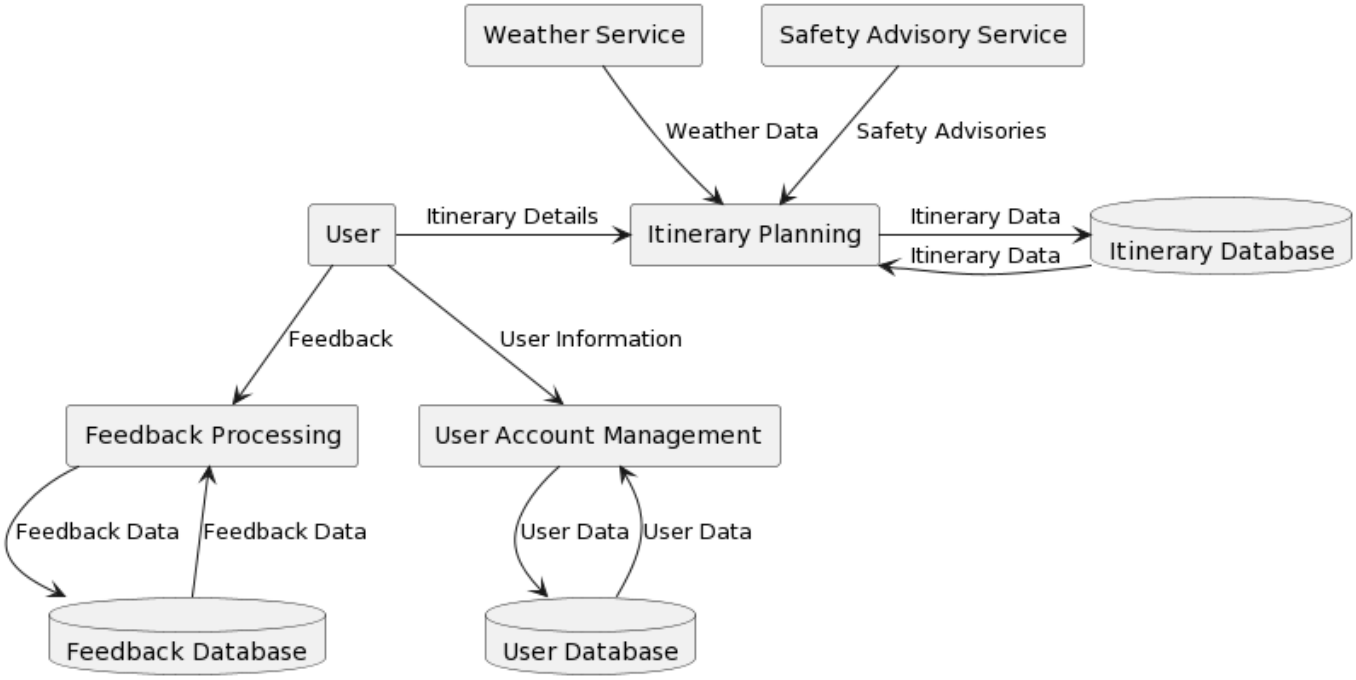
4. Screenshots/Prototype

3.2 Component Interactions and Collaborations

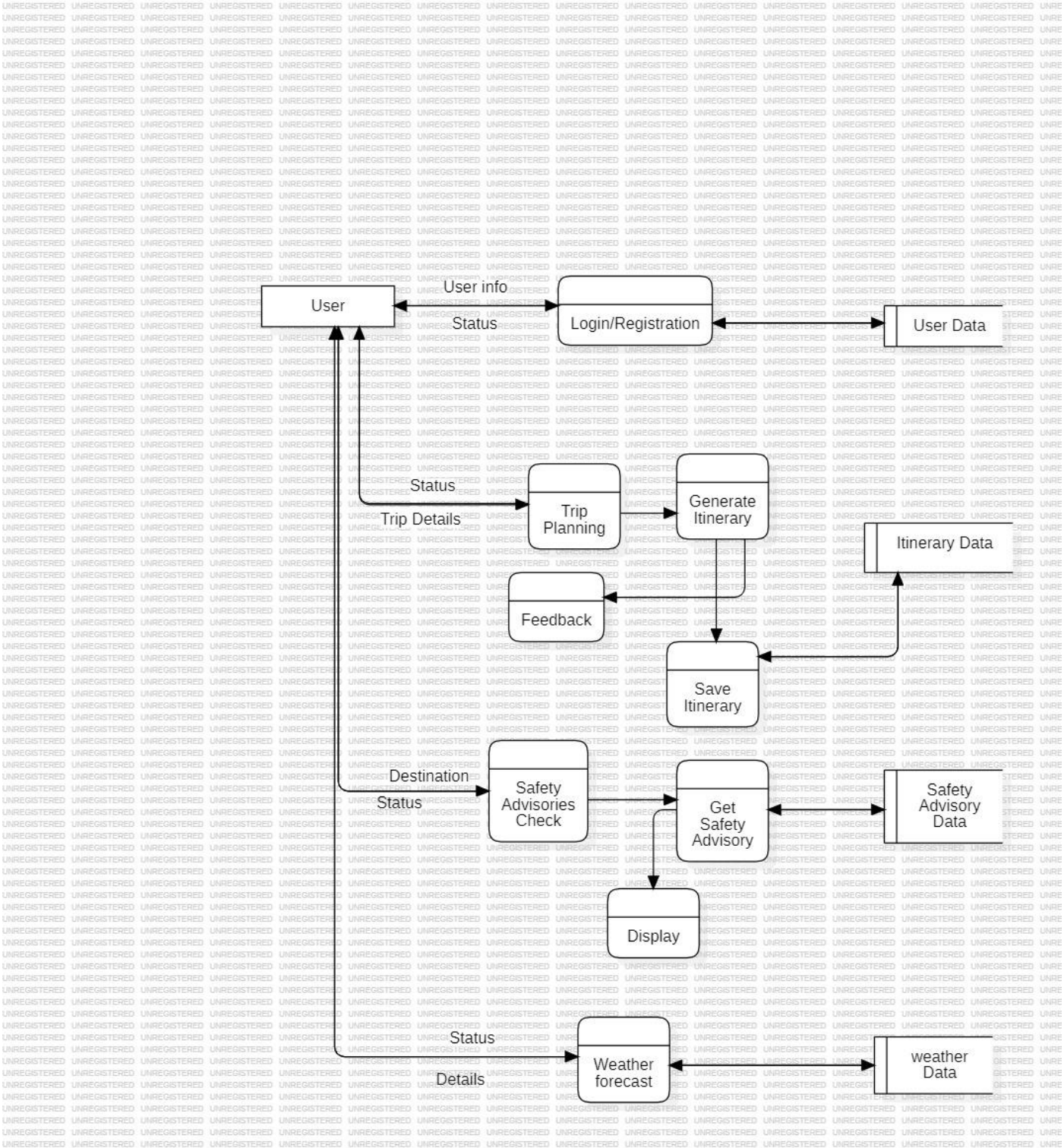
3.2.1 Sequence Diagram



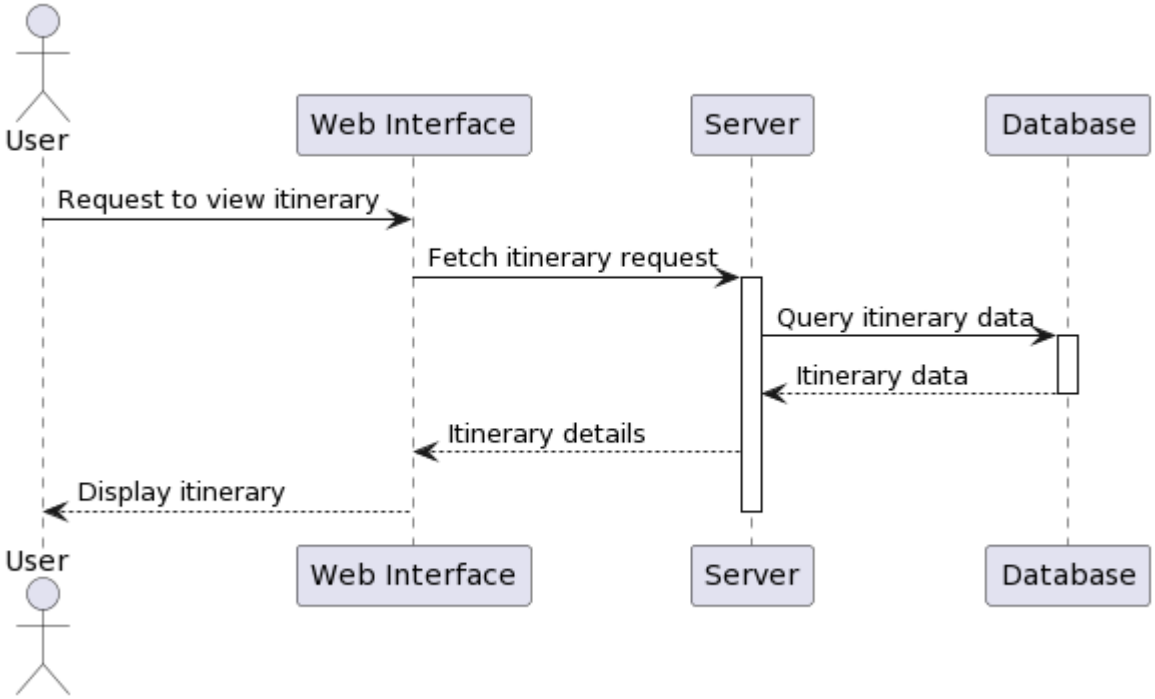
3.2.2 DFD LEVEL



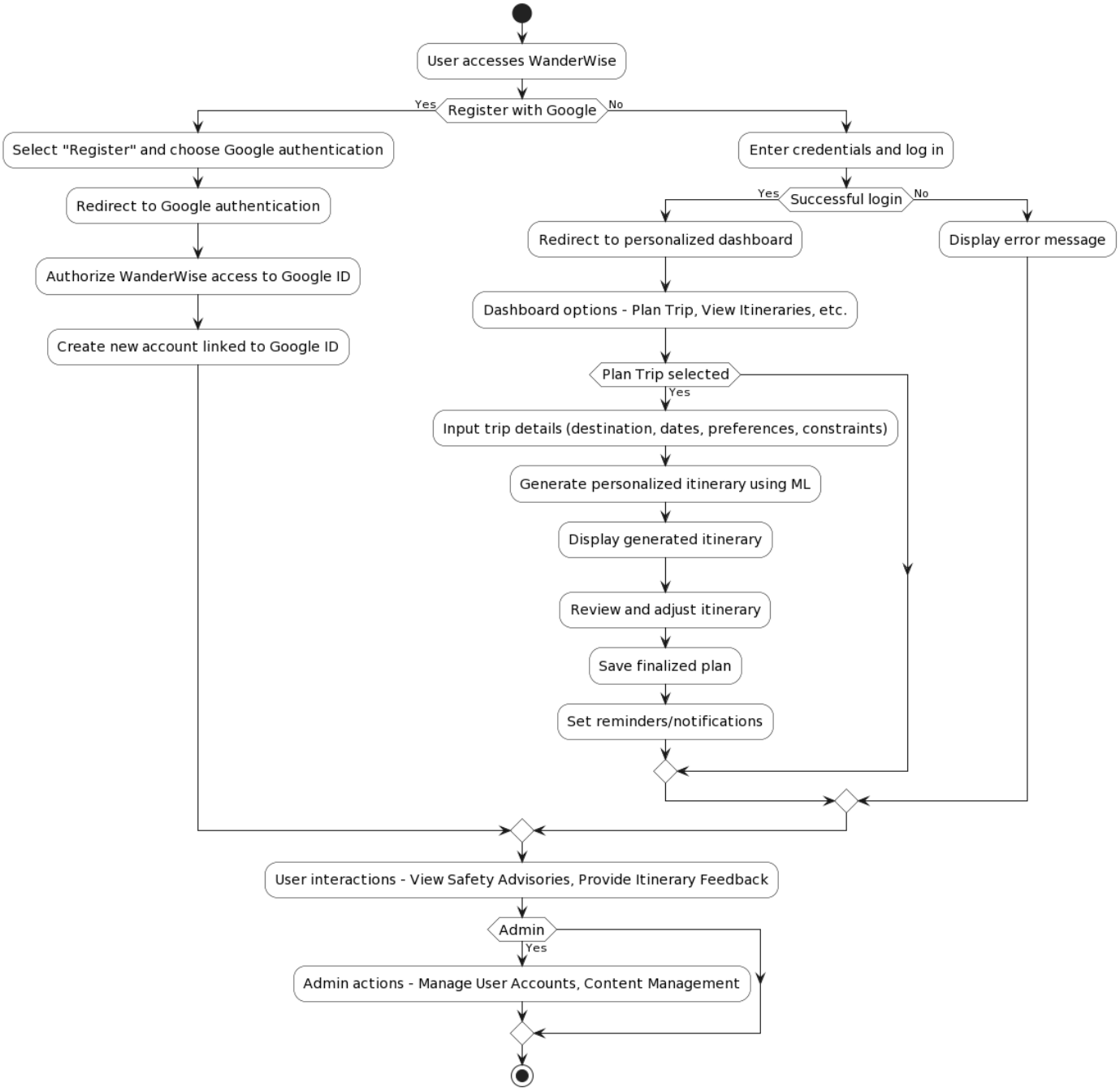
3.2.3 DFD LEVEL1


User
User info
Status
Login/Registration
User Data
Status
Trip Details
Trip Planning
Generate Itinerary
Itinerary Data
Feedback
Save Itinerary
Destination
Status
Safety Advisories Check
Get Safety Advisory
Safety Advisory Data
Display
Status
Details
Weather forecast
weather Data

3.2.3 Sequence Diagram



3.2.4 Activity Diagram



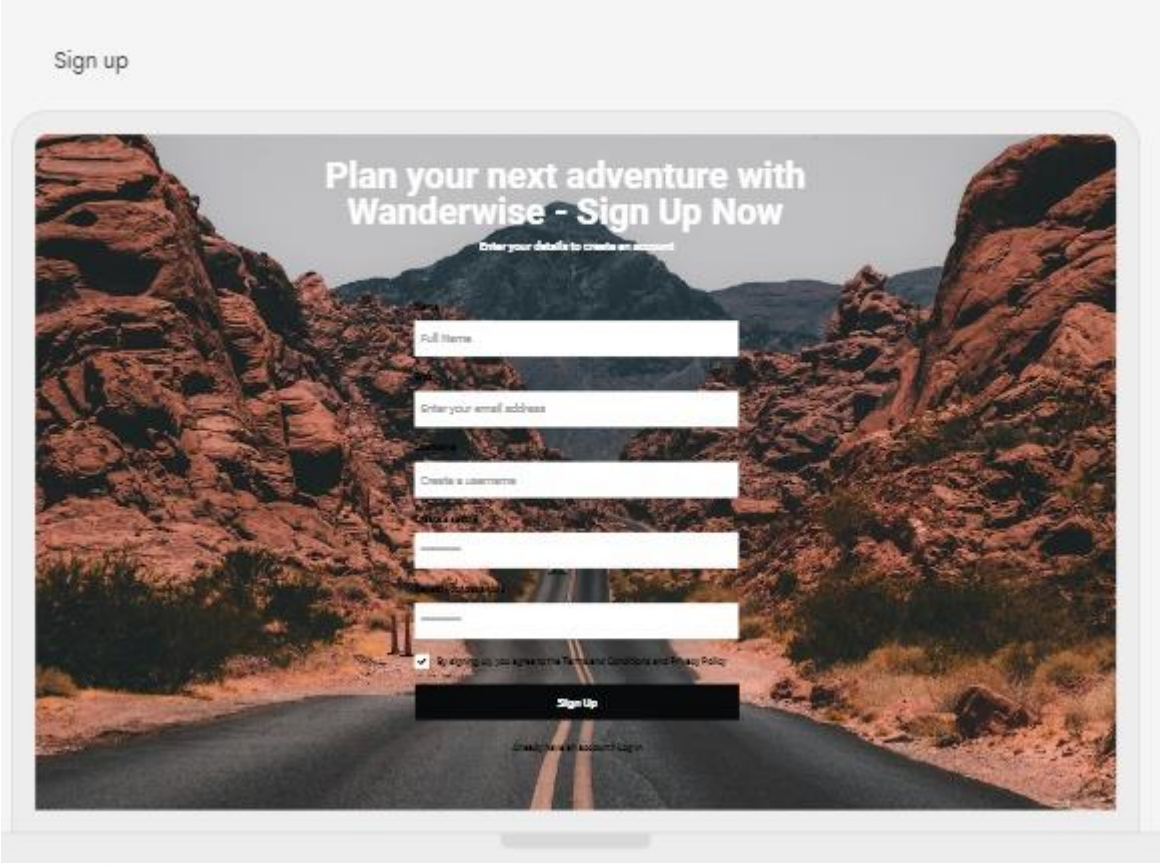
3.3 Technology Architecture

3. Screenshots/Prototype

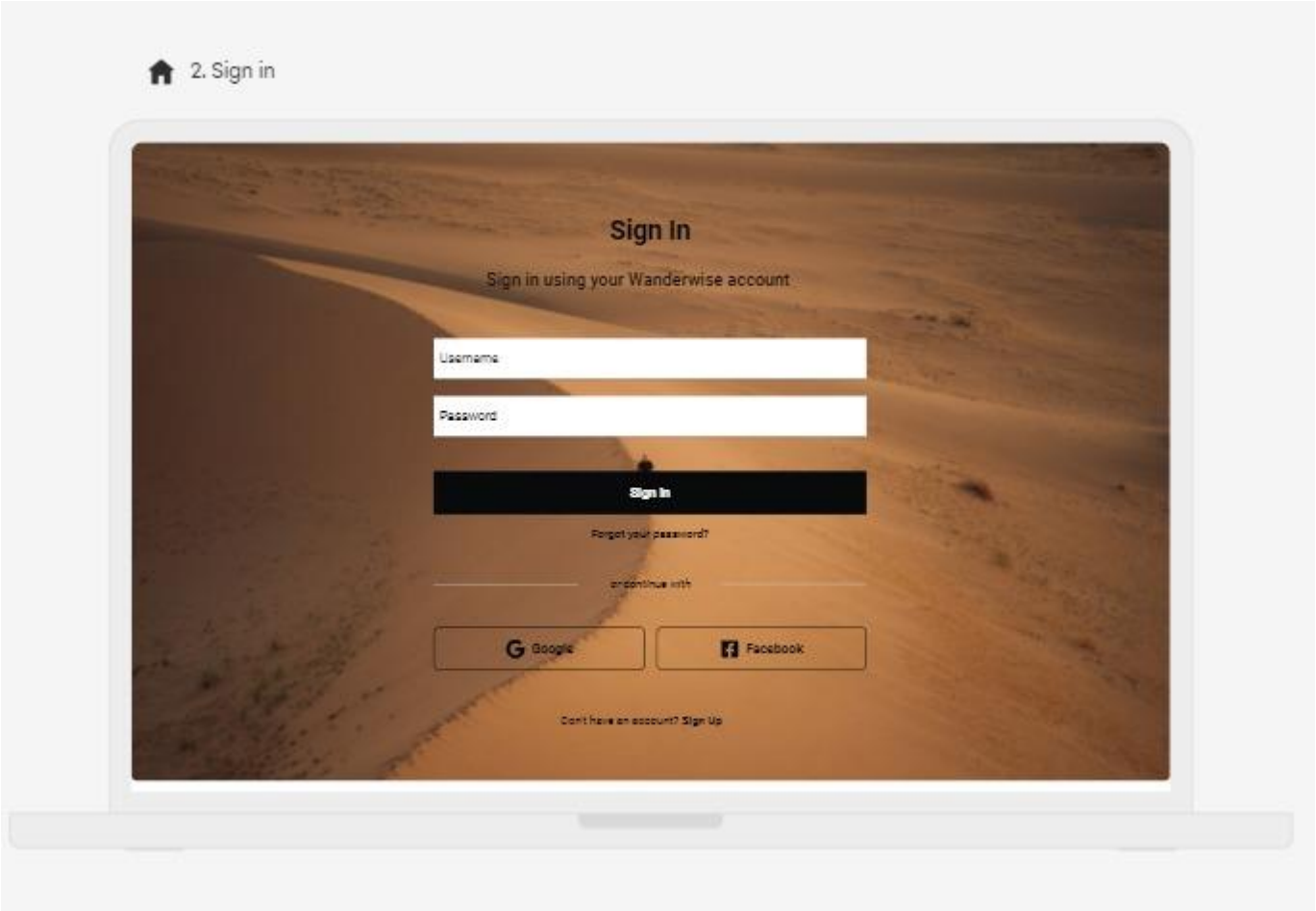
3.1 Workflow

3.2 Screens

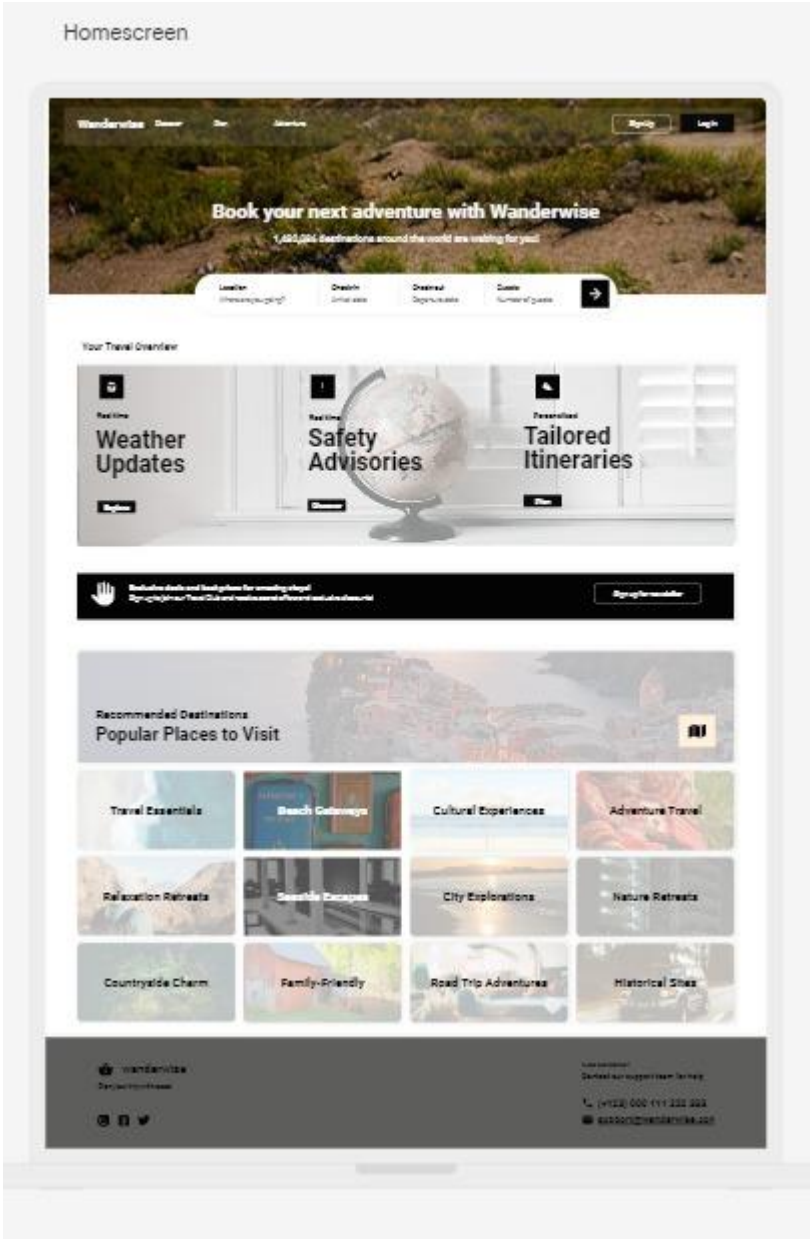
3.2.1 Sing up

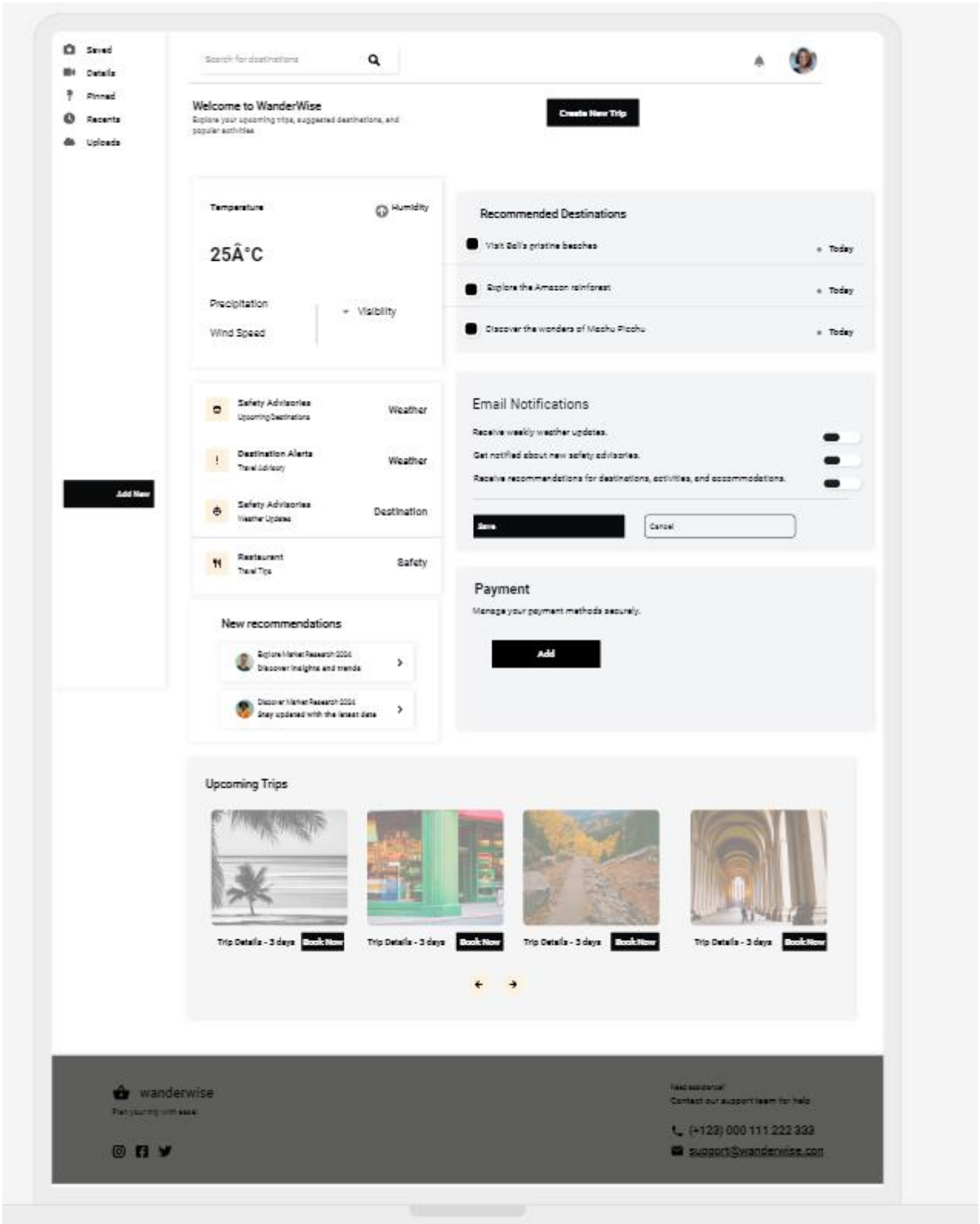

Sign up
Plan your next adventure with Wanderwise - Sign Up Now
Sign Up

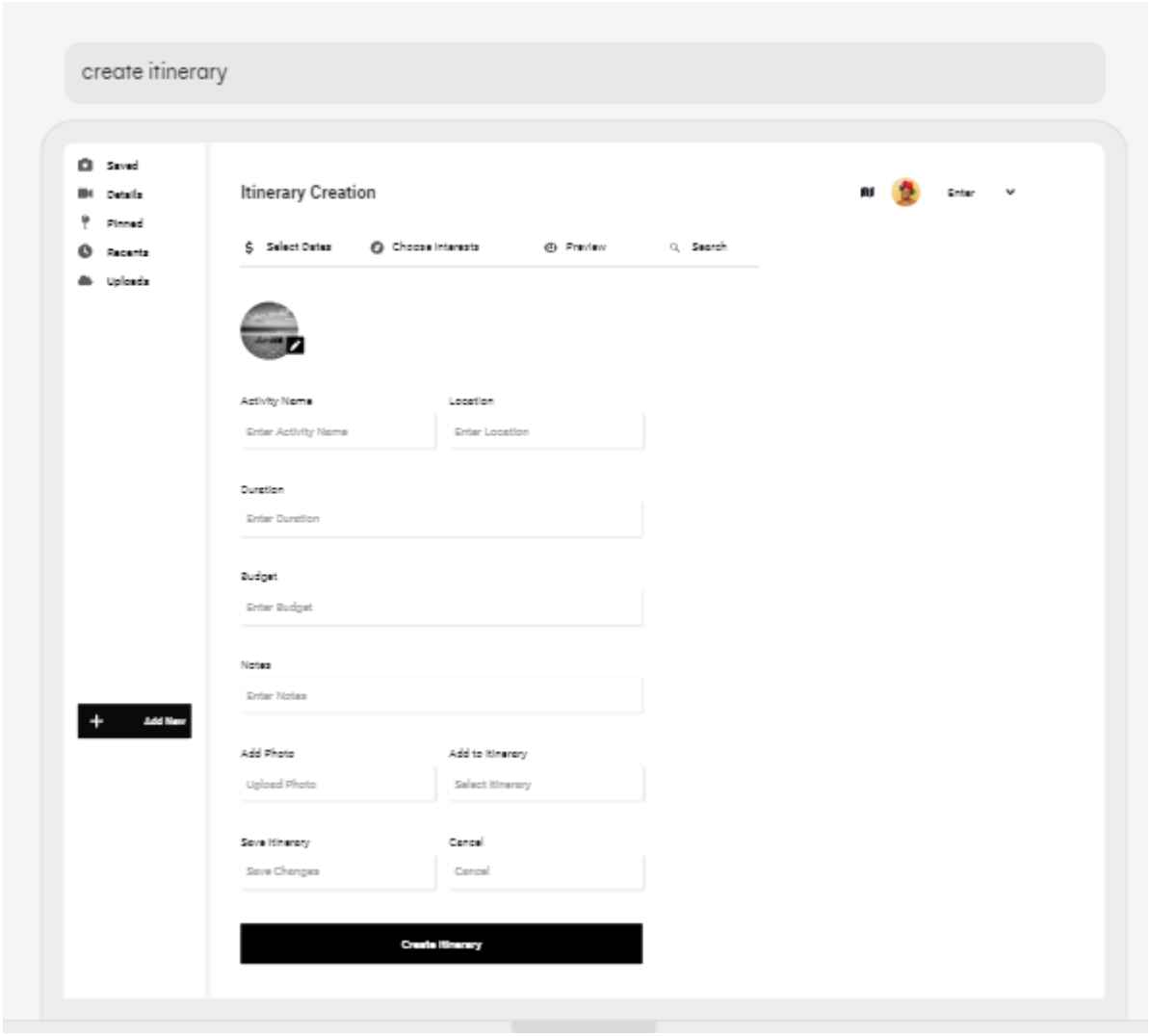
4.2.2 Sing In

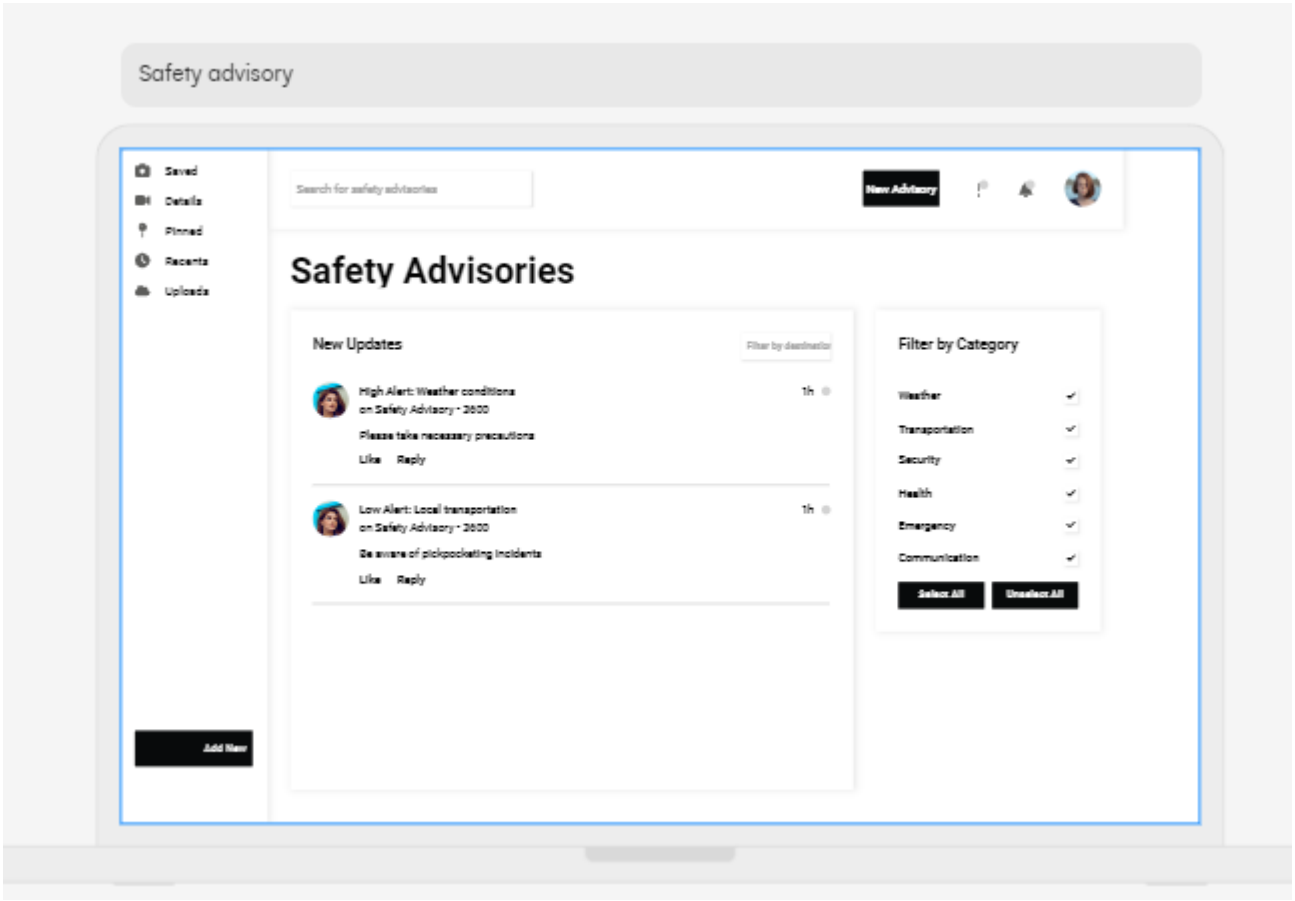

2. Sign in
Sign In
Sign in using your Wanderwise account
Username
Password
Sign In
Forgot your password?
Google
Facebook
Don't have an account? Sign Up

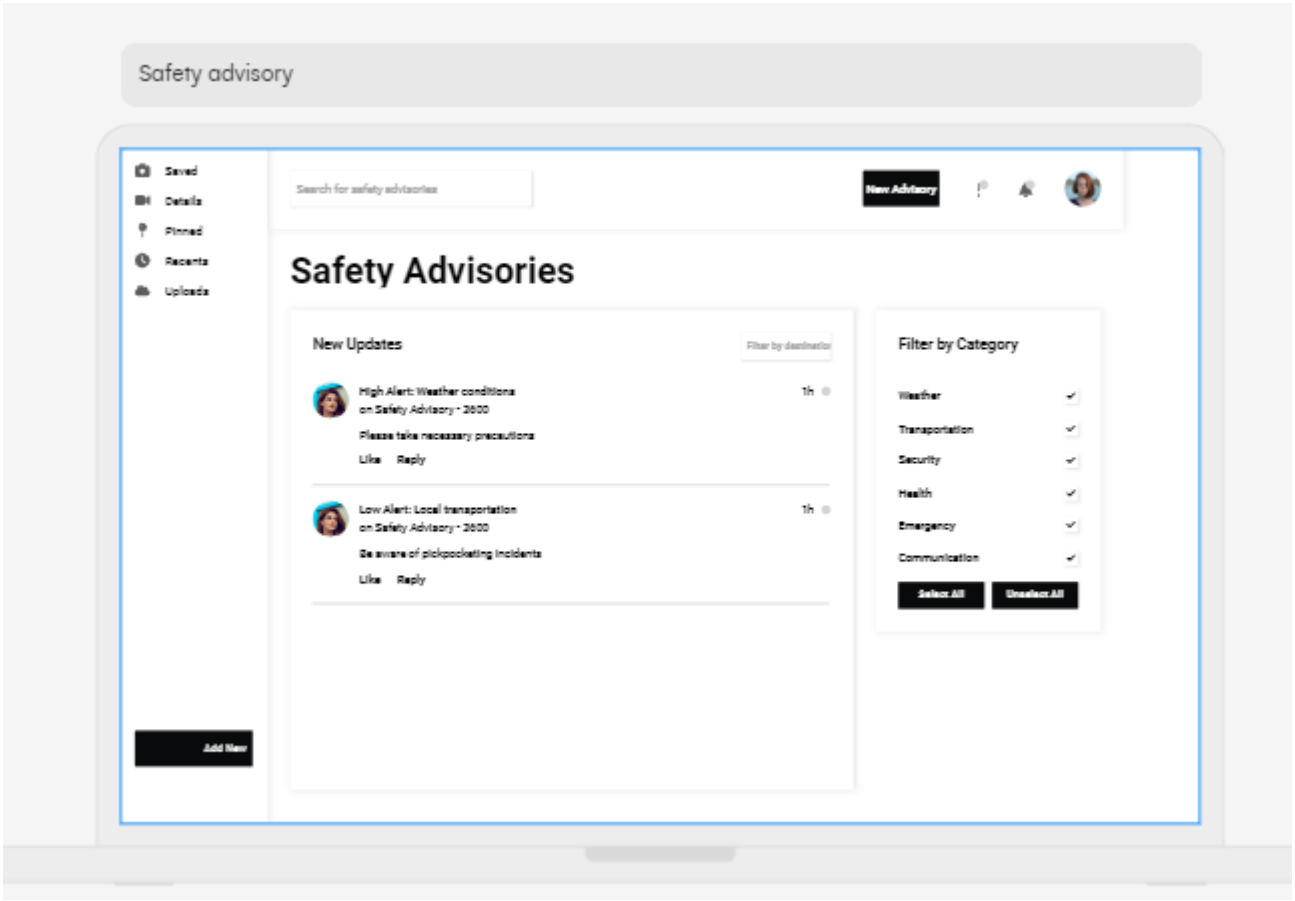
HomeScreen

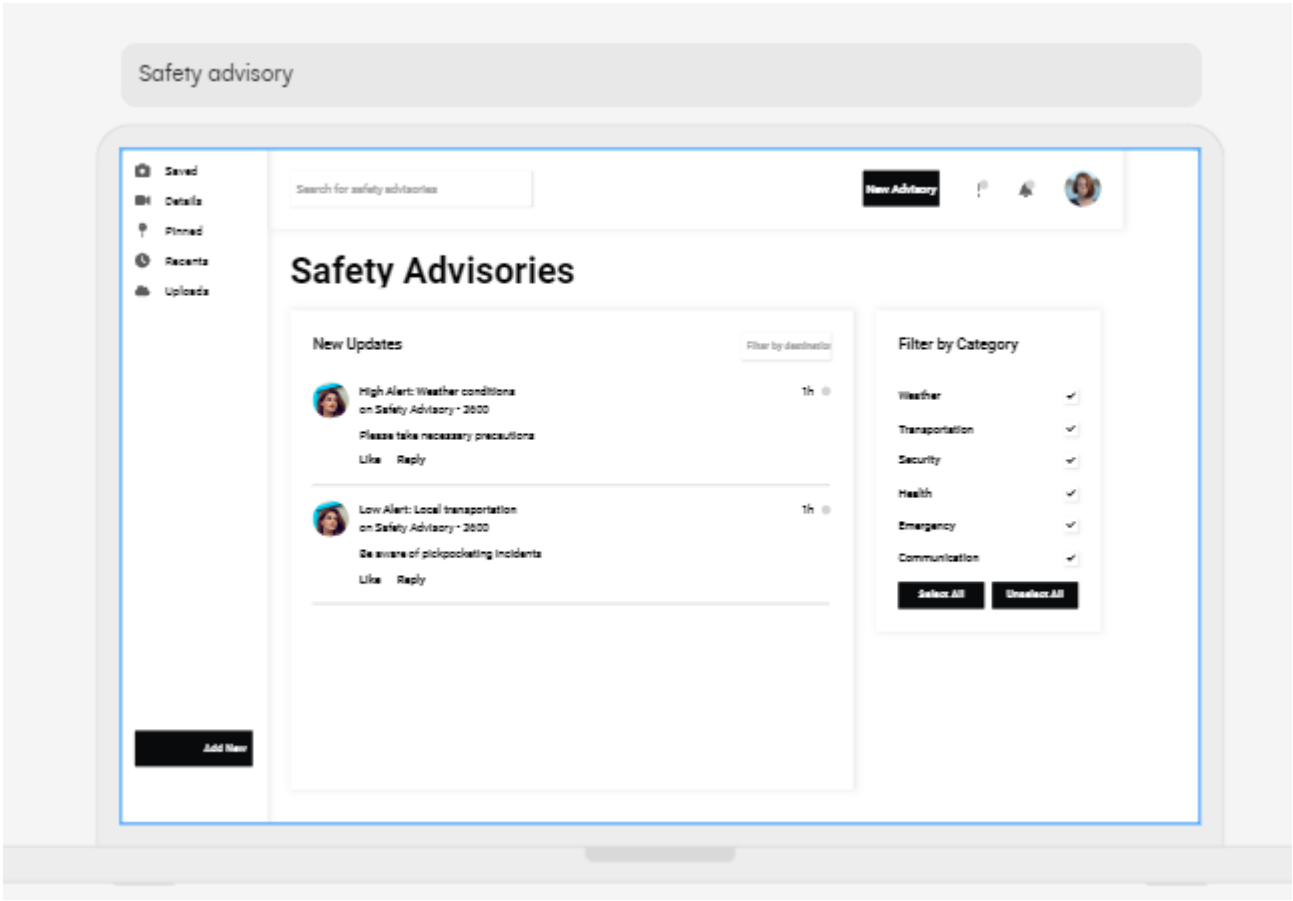

Homescreen
Book your next adventure with Wanderwise
Weather Updates
Safety Advisories
Tailored Itineraries
Recommended Destinations
Popular Places to Visit
Travel Essentials
Cultural Experiences
Adventure Travel
Relaxation Retreats
City Explorations
Nature Retreats
Countryside Charm
Family-Friendly
Road Trip Adventures
Historical Sites

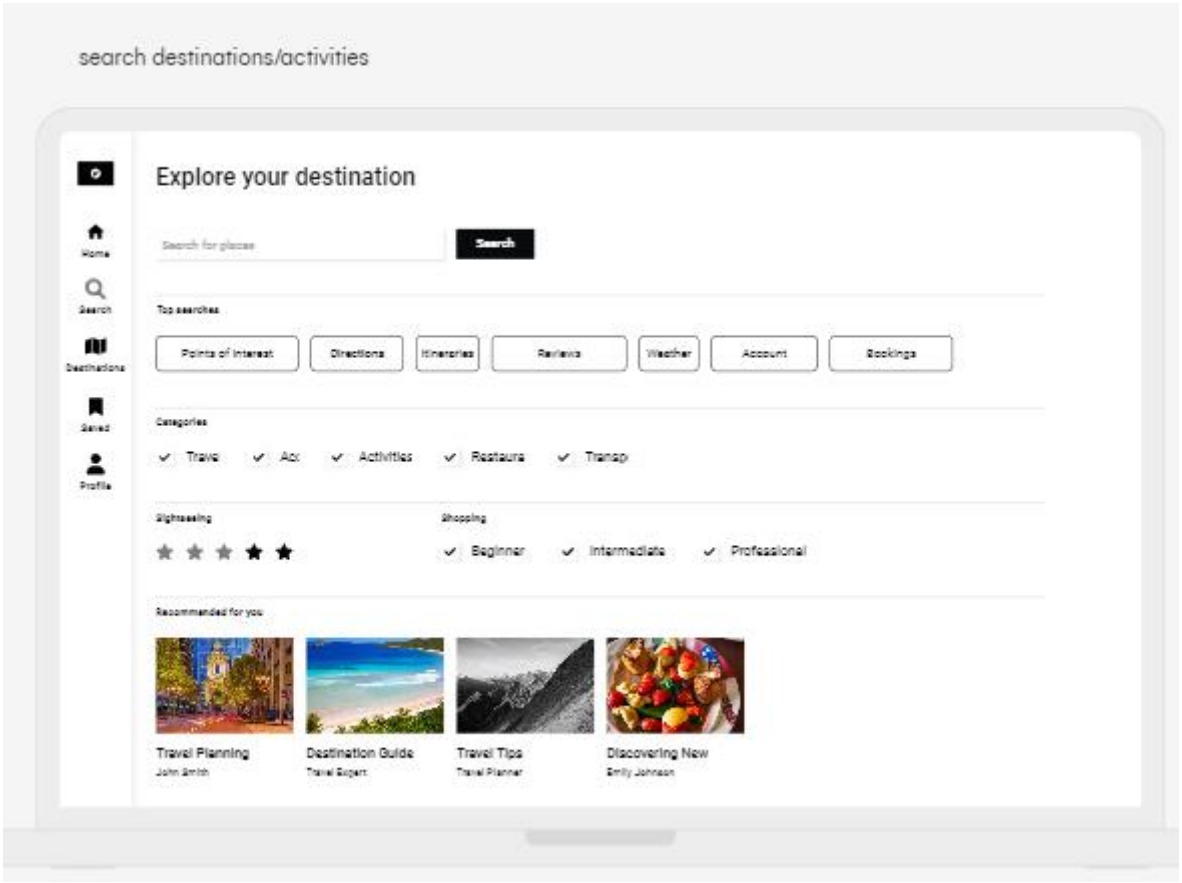

Saved
Details
Pinned
Recents
Uploads
Welcome to WanderWise
Create New Trip
Temperature
Humidity
25Â°C
Precipitation
Visibility
Wind Speed
Recommended Destinations
Visit Bali's pristine beaches
Today
Explore the Amazon rainforest
Today
Discover the wonders of Machu Picchu
Today
Safety Advisories
Weather
Destination Alerts
Weather
Safety Advisories
Destination
Restaurant
Safety
Email Notifications
Receive weekly weather updates.
Get notified about new safety advisories.
Receive recommendations for destinations, activities, and accommodations.
Save
Cancel
Add New
New recommendations
Payment
Manage your payment methods securely.
Add
Upcoming Trips
Trip Details - 3 days
Book Now
Trip Details - 3 days
Book Now
Trip Details - 3 days
Book Now
Trip Details - 3 days
Book Now
wanderwise
Contact our support team for help
(+123) 000 111 222 333
support@wanderwise.com


create itinerary
Saved
Details
Pinned
Recents
Uploads
Itinerary Creation
Enter
Select Dates
Choose Interests
Preview
Search
Activity Name
Enter Activity Name
Location
Enter Location
Duration
Enter Duration
Budget
Enter Budget
Notes
Enter Notes
Add New
Add Photo
Upload Photo
Add to Itinerary
Select Itinerary
Save Itinerary
Save Changes
Cancel
Cancel
Create Itinerary

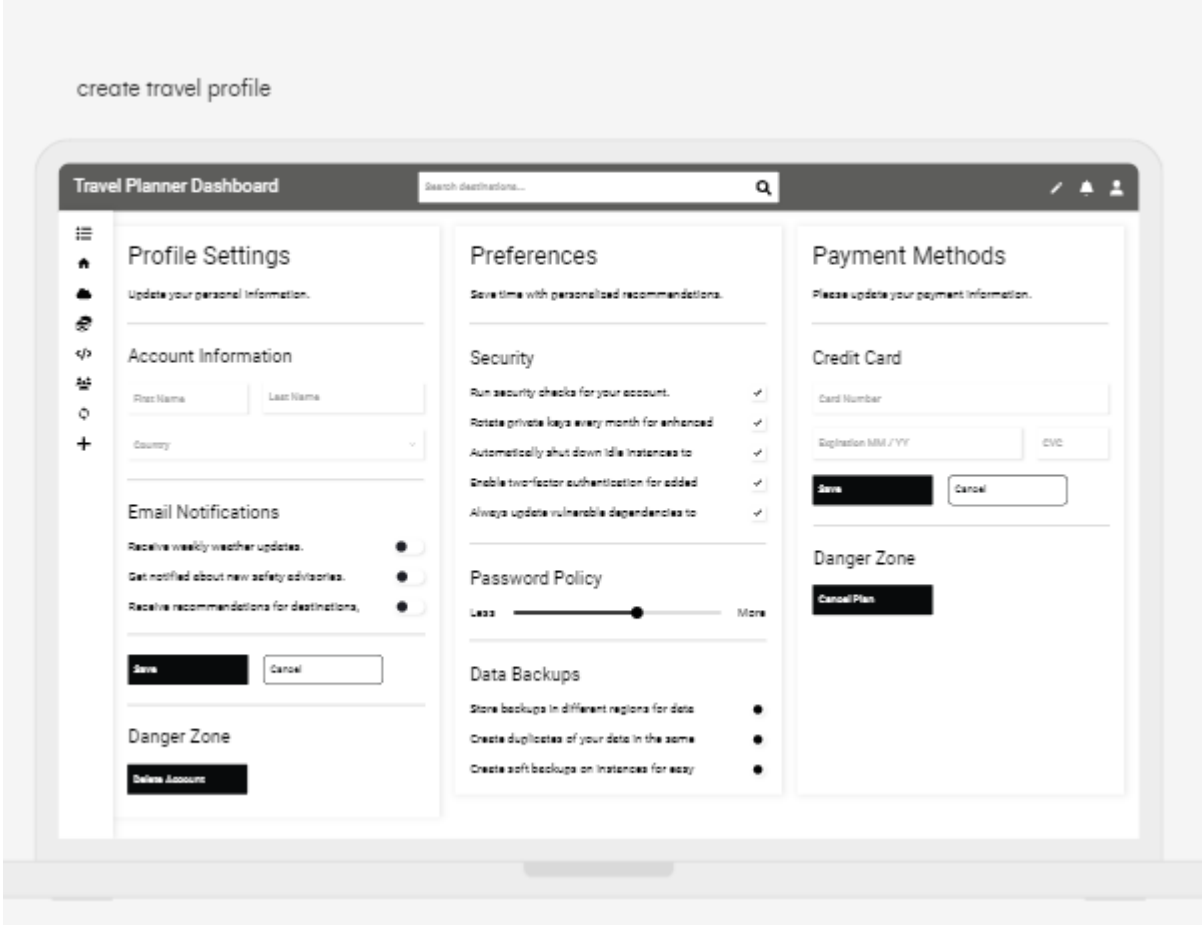

Safety advisory
Saved
Details
Pinned
Recents
Uploads
Search for safety advisories
New Advisory
Safety Advisories
New Updates
Filter by destination
High Alert: Weather conditions
on Safety Advisory - 3600
1h
Please take necessary precautions
Like
Reply
Low Alert: Local transportation
on Safety Advisory - 3600
1h
Be aware of pickpocketing incidents
Like
Reply
Filter by Category
Weather
Transportation
Security
Health
Emergency
Communication
Select All
Unselect All
Add New


Safety advisory
Saved
Details
Pinned
Recents
Uploads
Search for safety advisories
New Advisory
Safety Advisories
New Updates
Filter by destination
High Alert: Weather conditions
on Safety Advisory - 3600
1h
Please take necessary precautions
Like
Reply
Low Alert: Local transportation
on Safety Advisory - 3600
1h
Be aware of pickpocketing incidents
Like
Reply
Filter by Category
Weather
Transportation
Security
Health
Emergency
Communication
Select All
Unselect All
Add New

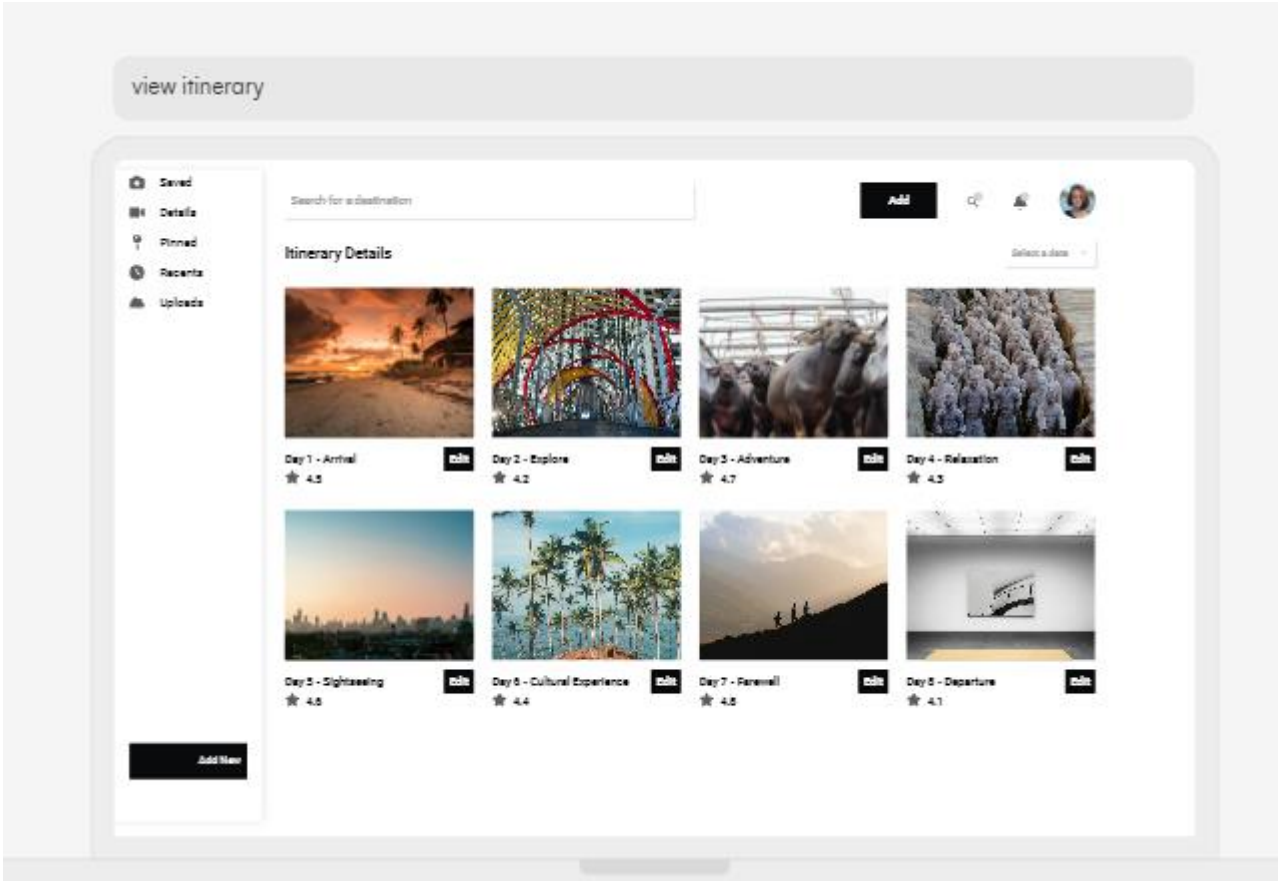

Safety advisory
Saved
Details
Pinned
Recents
Uploads
Search for safety advisories
New Advisory
Safety Advisories
New Updates
Filter by destination
High Alert: Weather conditions
on Safety Advisory - 2600
1h
Please take necessary precautions
Like
Reply
Low Alert: Local transportation
on Safety Advisory - 2600
1h
Be aware of pickpocketing incidents
Like
Reply
Filter by Category
Weather
Transportation
Security
Health
Emergency
Communication
Select All
Unselect All
Add New

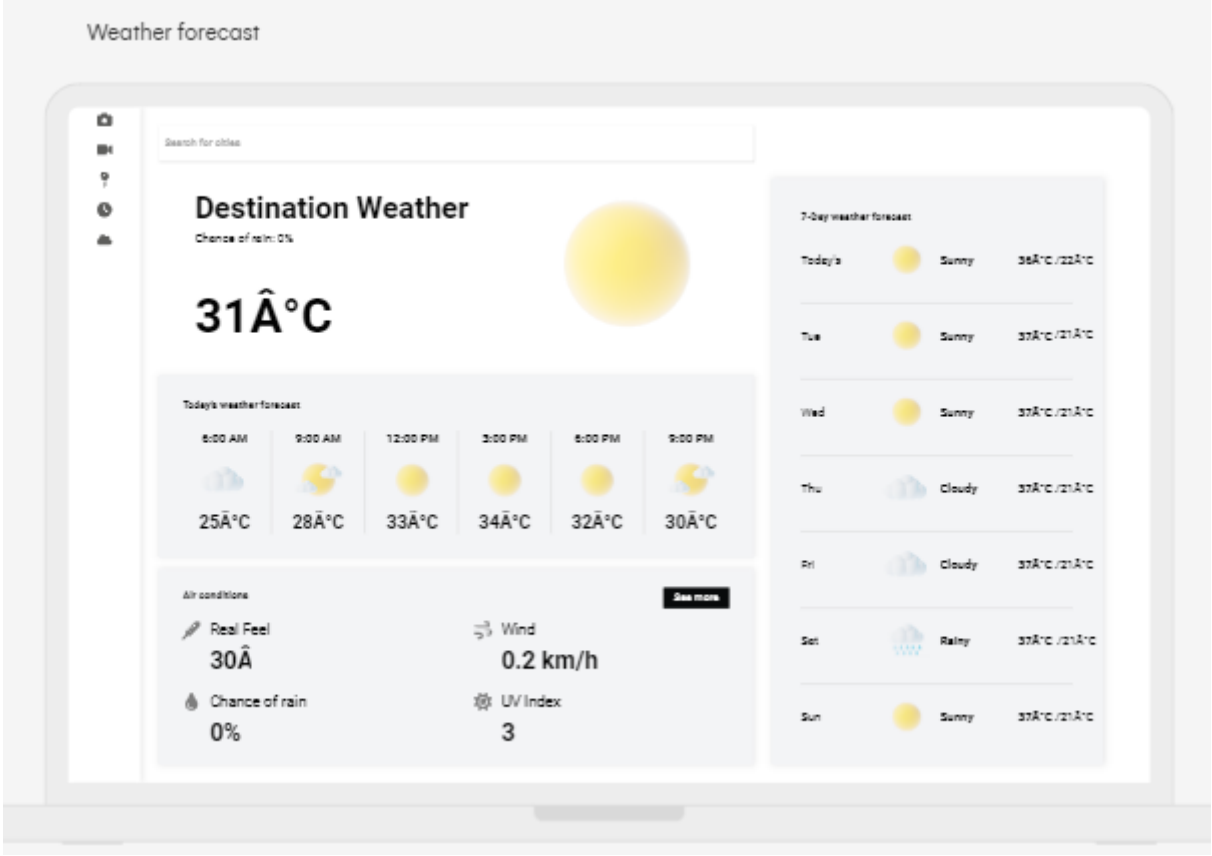

search destinations/activities
Explore your destination
Home
Search
Destinations
Saved
Profile
Search for places
Search
Top searches
Points of Interest
Directions
Itineraries
Reviews
Weather
Account
Bookings
Categories
Travel
Act
Activities
Restaura
Transp
Sightseeing
Shopping
Beginner
Intermediate
Professional
Recommended for you
Travel Planning
John Smith
Destination Guide
Travel Expert
Travel Tips
Travel Planner
Discovering New
Emily Johnson

create travel profile

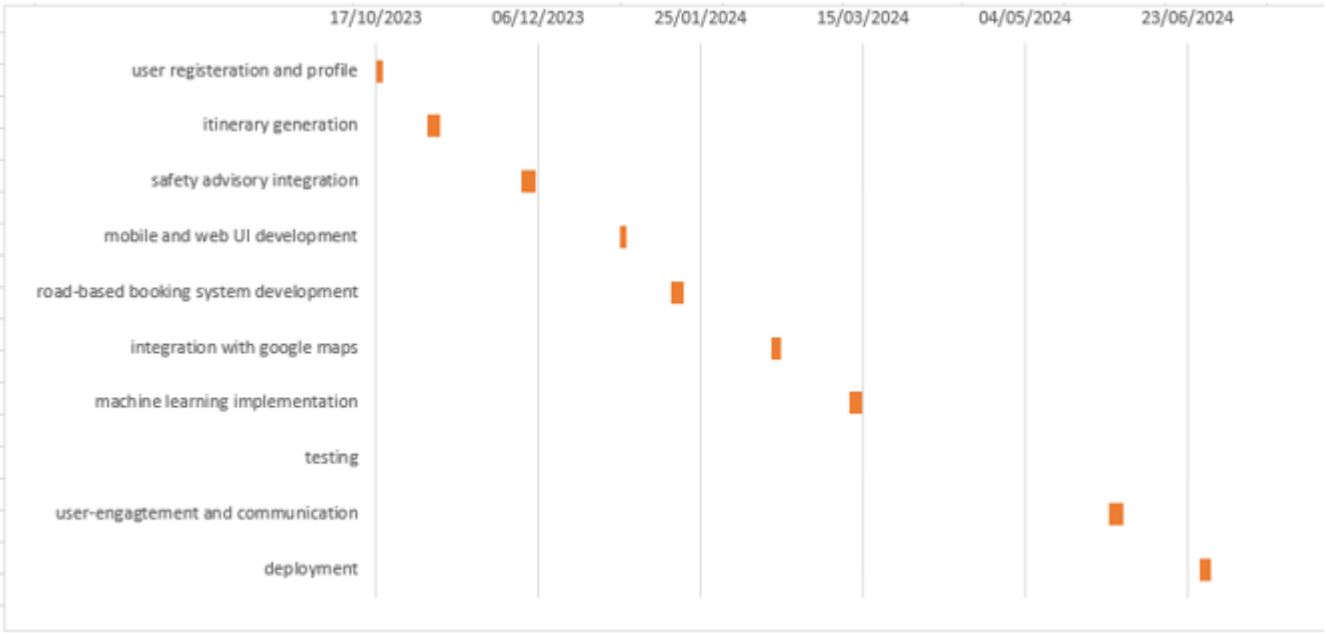


view itinerary





4. Revised Project Plan



5. References

Johnson, A. (2019). Travel Planning Essentials. Wanderlust Publications.

Smith, J., & Doe, A. (2020). "Machine Learning Algorithms for Personalized Itineraries." In Proceedings of the International Conference on Travel Technology, (pp. 50-62). TravelTech Publishers.

Brown, C. (2021). "Enhancing User Safety in Travel Applications." Journal of Travel Security, 8(3), 210-225. DOI: 10.1234/jts.2021.12345.

Appendix A: Glossary

- **WanderWise:** The name of the web-based travel planning application being developed for personalized itineraries, safety advisories, and weather forecasts.
- **SRS:** Software Requirements Specification - A document detailing the functional and nonfunctional requirements of the software project.
- **ML:** Machine Learning - A subset of artificial intelligence that enables systems to learn and improve from experience without being explicitly programmed.
- **UI:** User Interface - The means by which a user interacts with and controls software.
- **UX:** User Experience - The overall experience a user has when interacting with a product, including ease of use, accessibility, and satisfaction.
- **API:** Application Programming Interface - A set of rules that allows different software applications to communicate and interact with each other.
- **GDPR:** General Data Protection Regulation - European Union data protection and privacy regulation.
- **CCPA:** California Consumer Privacy Act - California state law related to data privacy.
- **HTTPS:** Hypertext Transfer Protocol Secure - An extension of HTTP used for secure communication over a computer network, ensuring encrypted data transmission.
- **DOI:** Digital Object Identifier - A unique alphanumeric string assigned to a digital object (e.g., journal article) to provide persistent identification.
- **CPU:** Central Processing Unit - The primary component of a computer that performs instructions and calculations.
- **OS:** Operating System - System software that manages computer hardware, software resources, and provides common services for computer programs.

Appendix B: IV & V Report

(Independent verification & validation)
IV & V Resource

Name Signature

S#	Defect Description	Origin Stage	Status	Fix Time	
				Hours	Minutes
1					
2					
3					
…					

Table 1: List of non-trivial defects

This document has been adapted from the following:

1. Previous project templates at UCP
2. High-level Technical Design, Centers for Medicare & Medicaid Services. (www.cms.gov)