Software Requirements Specification (SRS)

Project: Travello

Version: 1.0

Date: August 25, 2025

# 1. Introduction

## 1.1 Purpose

To simplify trip planning and offer personalized travel experiences

## 1.2 Scope

- Itinerary generation

- Travel recommendations

- Flight and accommodation booking

- Real-time travel updates

## 1.3 Intended Audience

- travel enthusiasts

- business travelers

# 2. System Overview

An AI-powered travel planner that creates customized itineraries

# 3. Functional Requirements

## 3.1 User Account Management [0]

**Description:**

The application should allow users to securely create and manage their user accounts.

**Priority:**

High

**Subtasks:**

- Implement user registration with email verification

- Allow users to update their profile information (name, password, etc.)

- Enable password reset functionality

- Provide secure storage for user data

## 3.2 Destination Search and Selection [1]

**Description:**

The application should enable users to search for and select destinations for their trips.

**Priority:**

High

**Subtasks:**

- Implement a search bar that allows users to enter destination keywords.

- Develop an algorithm to suggest destinations based on user search queries.

- Create filters for users to refine their search results.

- Display search results with relevant information such as location, images, and brief descriptions.

- Allow users to select a destination from the search results.

## 3.3 Itinerary Generation [2]

**Description:**

The application should generate personalized travel itineraries based on user preferences, budget, and travel dates.

**Priority:**

High

**Subtasks:**

- Gather user preferences (destinations, interests, activities)

- Calculate estimated costs based on user budget and preferences

- Suggest a range of accommodation options based on user budget

- Generate a daily schedule with activities, transportation, and meals

- Provide itinerary in a user-friendly format (text, map, mobile app)

- Allow users to customize and modify the generated itinerary

## 3.4 Itinerary Customization [3]

**Description:**

The application should allow users to customize their itineraries by adding, removing, or rearranging activities.

**Priority:**

High

**Subtasks:**

- Add new activities to the itinerary from a searchable database.

- Remove existing activities from the itinerary.

- Reorder activities within the itinerary using drag-and-drop functionality.

- Save customized itineraries for future use.

## 3.5 Maps and Directions Integration [4]

**Description:**

The application should integrate with maps APIs to provide users with directions and travel information.

**Priority:**

High

**Subtasks:**

- Display real-time traffic conditions on the map.

- Offer multiple route options with varying distances and travel times.

- Allow users to search for destinations by name or address.

- Provide voice-guided navigation instructions.

- Integrate with public transportation schedules and routes.

## 3.6 Weather Data Integration [5]

**Description:**

The application should incorporate real-time weather data to provide up-to-date forecasts and travel advisories.

**Priority:**

High

**Subtasks:**

- Fetch current weather conditions for a given location

- Provide hourly and daily weather forecasts for the selected destinations

- Display weather alerts and advisories relevant to the travel plans

- Integrate with a reliable weather API for accurate and timely data

## 3.7 Travel Booking Integration [6]

**Description:**

The application should allow users to book flights, accommodations, and other travel services directly through the platform.

**Priority:**

High

**Subtasks:**

- Integrate flight booking API

- Integrate accommodation booking API

- Implement payment gateway integration for bookings

- Display booking confirmation and itinerary details

## 3.8 Budgeting and Cost Estimation [7]

**Description:**

The application should provide users with estimated travel costs and budget management tools.

**Priority:**

High

**Subtasks:**

- Calculate estimated costs for flights, accommodation, transportation, activities, and meals based on user-selected destinations, dates, and preferences.

- Enable users to set a budget for their trip and track their spending against it.

- Provide suggestions for cost-saving options and alternative activities based on user preferences and budget.

- Offer the ability to compare costs for different travel options and make informed decisions.

## 3.9 Itinerary Sharing [8]

**Description:**

The application should allow users to share their itineraries with friends and family.

**Priority:**

High

**Subtasks:**

- Implement a feature to allow users to select specific itineraries to share.

- Enable users to specify sharing permissions (public, private, specific users).

- Provide an option to generate a shareable link for itineraries.

- Allow users to receive and view shared itineraries.

## 3.10 Personalized Recommendations [9]

**Description:**

The application should offer personalized travel recommendations based on user interests and past travel history.

**Priority:**

High

**Subtasks:**

- Implement a system to capture user interests and preferences.

- Develop algorithms to analyze user data and generate personalized recommendations.

- Integrate a recommendation engine with the travel itinerary planning module.

## 3.11 User Interface and Navigation [10]

**Description:**

The application should provide a user-friendly interface with intuitive navigation and search functionality.

**Priority:**

High

**Subtasks:**

- Implement a clean and visually appealing dashboard.

- Design an easy-to-use search bar for destinations, activities, and dates.

- Create a clear and concise navigation menu for accessing different sections of the application.

- Develop user-friendly filters for refining search results.

- Ensure responsive design for optimal viewing across various devices.

## 3.12 Security and Privacy [11]

**Description:**

The application should ensure data security and privacy through robust authentication and encryption measures.

**Priority:**

High

**Subtasks:**

- Implement secure user registration and login procedures

- Encrypt sensitive user data (e.g., travel plans, payment information) both in transit and at rest

- Integrate robust access control mechanisms to restrict unauthorized data access

- Conduct regular security audits and penetration testing to identify vulnerabilities

# 4. Non-Functional Requirements

**NFR\_1**: The application should generate personalized itineraries based on user preferences and constraints.

**NFR\_2**: The application should integrate seamlessly with maps APIs to provide accurate travel directions and recommendations.

**NFR\_3**: The application should utilize real-time weather and flight data to adjust itineraries and provide relevant travel alerts.

**NFR\_4**: The application should be responsive and provide quick loading times for all functionalities.

**NFR\_5**: The application should have a user-friendly interface that is easy to navigate and understand.

**NFR\_6**: The application should ensure data security and privacy by implementing appropriate measures to protect user information.