# SYSTEM REQUIREMENTS

## P-10:ODYSSEUM

### <TEAM MEMBER NAMES & IDS>

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# 1. Introduction

This project aims to develop a travel/social network application to help travelers plan their next trip using just one app. Rather than relying on blogs and pages from different online outlets, the app would be a one-stop solution for all travelers. The application will provide users a platform to search for various tourist destinations they may be interested in visiting and what these destinations have to offer such as accommodation, sightseeing, dining, nightlife, historical sites, and tour guides. Combining all these services onto one platform would improve the travel experience and will allow users to make well informed decisions based on information on the destinations..

Nowadays, travelers face a fundamental problem: finding accurate and relevant information. They have to rely on large commercial travel agencies that only have profit-driven goals or on personal connections that provide limited details and advice. This gives travelers an experience far from fulfilling, while local businesses gain limited benefits. The purpose of this app is to serve as a networking app to connect like-minded travelers and local service providers such that both parties benefit, with travelers having a fulfilling experience visiting their destinations and the local business being given an opportunity to boost the economic growth in the region.

As stated above, potential users of this app include travelers themselves, administrators and local businesses which are but not limited to hotels, restaurants and tour guides.

## System Actors

| Actor Name | Description |
| --- | --- |
| Tourist | The primary user of the application who can create itineraries , explore places, and connect with other travelers and local service providers. They can view recommendations, rate locations, leave reviews, and share their travel experiences with the community. |
| Business Owner | Businesses such as hotels, restaurants, shopping centers etc. They use the app to promote their services and engage with travelers by providing information, answering inquiries, and receiving feedback. |
| Tour Guides | Government or private tourism bodies that promote regions, cultural heritage, and local attractions. Similar to business owners they promote services and provide information regarding them to interested tourists. |
| Administrator | Responsible for managing and maintaining the platform. This actor oversees user management, content moderation, and system performance to ensure smooth operation. |

# 2. Functional Requirements

| Requirements | |
|---|---|
| **Sr#** | **Requirement** |
| | **Tourist** |
| 1 | As an tourist, I want to be able to create and login to an account using my email or a different authentication provider (e.g. Google) |
| 2 | As a tourist,I should be able to edit my profile and add information such as a bio, profile picture and traveling interests. |
| 3 | As a tourist, I should be able to search for different destinations and local businesses, pin them, view their ratings and/or add my own review. |
| 4 | As a tourist, I want to create my own travel itinerary and want to be able to share them with others. |
| 5 | As a tourist, I should be able to receive personalized recommendations based on my travel interests related to possible travel destinations and local businesses to visit. |
| 6 | As a tourist, I should be able to add other users as a friend in order to communicate with them. |
| 7 | As a tourist, I want to receive notifications about friend requests, messages and recommendations. |
| | |
| | **Business Owners** |
| 1 | As a business owner, I should be able to create a business account for my restaurant, hotel or any local business at a particular location to attract tourists. |
| 2 | As a business owner, I should be able to update my business profile. |
| 3 | As a business owner, I want to be able to respond to user reviews. |
| 4 | As a business owner, I want to receive notifications whenever a tourist writes a review. |
| 5 | As a business owner, I want my page's analytics to check how many people have viewed my business. |
| | |
| | **Tour Guide** |
| 1 | As a tour guide, I want to be able to create and manage my account to offer services and interact with tourists. |
| 2 | As a tour guide, I want to be able to update my account, services, and tour offerings. |
| 3 | As a tour guide, I want to be able to create and manage tours that I will offer which include pricing, accomodation, schedule, and itinerary. |

| | |
|---|---|
| 4 | As a tour guide, I want to be able to view and respond to inquiries from tourists regarding my tour offerings. |
| 5 | As a tour guide, I want to be able to offer personalized travel-recommendation to tourists based on their preferences and past traveling experience. |
| 6 | As a tour guide, I want to be able to view my tour analytics, where I can see feedback, reviews, bookings, and performance of my tours. |
| | |
| | **Administrator** |
| 1 | As an admin, I want to monitor/manage all other actor accounts which include account recovery, suspending or deleting accounts if indeed. |
| 2 | As an admin, I should be able to moderate content posted by actors (post, comments, reviews) and take necessary actions against inappropriate or illegal content. |
| 3 | As an admin, I want to be able to send new app features and updates to all users. |
| 4 | As an admin, I should be able to approve a business or tourist guide account before they are allowed on the app to ensure authenticity. |
| 5 | As an admin, I should be able to access the app's analytics including traffic amount and any system generated logs. |

# 3. Non-functional Requirements / Quality Attributes

| Sr# | Requirements |
|---|---|
| 1 | At any time during its execution, the system must not utilize more than 250MB of memory to ensure efficient resource usage and memory-related issues. |
| 2 | In the event of a failure, the system must restore to normal operations within 2-3 minutes of a failure to minimize downtime and maintain user satisfaction. |
| 3 | The system must handle at least 10,000 users without performance degradation. |
| 4 | During peak usage, the system must respond to user requests within 7-8 seconds. |
| 5 | The system must be highly available, maintaining an uptime of 99.9%, especially during peak travel seasons. |
| 6 | The system must be able to run on both IOS and Android devices to cater to a wide range of users across different platforms. |
| 7 | The system must be easily usable by all demographics, maintaining accessibility for a wide user base. |
| 8 | The system must be scalable to accommodate the increase or decrease in traffic. |
| 9 | The system must be able to handle up to 400-500 requests at peak usage. |
| 10 | The system must be designed to be easily maintainable to facilitate testing, ongoing updates, and support. |
| 11 | The system must ensure the data is well protected, ensuring data integrity through backups and redundancy measures. |

# 4. Security Requirements

| Sr # | Security Risks | Potential Losses | Controls |
|---|---|---|---|
| 1 | Broken Access Control | Unauthorized information disclosure, modification, or destruction of data. | Server-side; default deny, enforce record ownership, API rate limits, session validity control, etc. |
| 2 | Injections | Unauthorized disclosure, modification or destruction of data. | Positive input validation, safe APIs, and prepared statements. |
| 3 | Sensitive Data Exposure | Unauthorized exposure of sensitive user data such as emails, credit card numbers, itineraries, phone numbers, etc. | Ensure strong cryptography - both in storage and in-transit, usage of secure protocols, e.g. TLS, HTTPS, for transfer of data, disabling of caching for responses containing sensitive data. |
| 4 | Insecure Design | Potential unauthorized access to sensitive system components. | Strict adherence to the secure development lifecycle. |
| 5 | Identification & Authentication Failures | Financial loss, litigation, user-information access, unauthorized and unintended actions on behalf of users. | MFA, secure credentials for both admins and end-users, limiting login attempts, server-side secure session manager using randomized session IDs with high entropy. |

# 5. Who Did What?

| Name of the Team Member | Tasks done |
|---|---|
| Pir M. Shahraiz Chishty | Introduction, System Actors |
| Muhammad Affan Naved | Non-Functional Requirements, Functional Requirements |
| Mohammad Haroon Khawaja | Non-Functional Requirements, Functional Requirements |
| Shahrez Aezad | Security Requirements |
| Luqman Aadil | Introduction, System Actors |

# 6. Review checklist

Before submission of this deliverable, the team must perform an internal review. Each team member will review one or more sections of the deliverable.

| Section Title | Reviewer Name(s) |
|---|---|
| Introduction | Muhammad Affan Naved |
| Actors | Muhammad Affan Naved, Mohammad Haroon Khawaja |
| Functional Requirements | Pir M. Shahraiz Chishty, Shahrez Aezad |
| Non-functional requirements | Mohammad Haroon Khawaja, Shahrez Aezad |
| Security Requirements | Luqman Aadil, Pir M. Shahraiz Chishty |