



TECHNICAL SPECIFICATION FOR THE DEVELOPMENT OF THE APPLICATION "GAMIFICATION OF TRAVEL IN UZBEKISTAN"

1. INTRODUCTION

The goal of this project is to develop a mobile application that will encourage tourists to explore Uzbekistan through gamification elements. The app should provide users with an interactive way to discover cultural, historical, and natural landmarks of the country while earning points, badges, and rewards.



2. GENERAL REQUIREMENTS

- Development of a mobile web application.
- Use of a modern frontend framework
- Integration with location services (GPS) and online maps.
- Support for push notifications.

3. FUNCTIONAL REQUIREMENTS

3.1 User Roles

1. Administrator

- Full access to manage content and users.
- Add, edit, or remove landmarks and quests.



- Monitor user activity and generate reports.
- 2. Tourist (User)**
 - Access to available landmarks, quests, and challenges.
 - Ability to earn points, badges, and rewards.
 - Participate in competitions and rankings.
- 3. Agent (Guide, Transferer, Hotel, Restaurant)**
 - Access to post information about their service.
 - Ability to communicate with clients and schedule services
 - Get payments opportunity

3.2 Main Features

- 1. Registration and Authorization**
 - User login via email, social media (Google, Facebook, etc.), or phone number.
 - Password recovery through email or SMS.
- 2. Location-based Quests**
 - Users can participate in quests linked to specific locations in Uzbekistan (historical landmarks, national parks, cities).
 - Quests are activated when a user arrives at a specific location using GPS.
 - After completing a quest, users receive points, badges, or rewards.
- 3. Landmark and Route Suggestions**
 - Users can receive recommendations for nearby landmarks based on their location.
 - Suggested routes with multiple points of interest, including walking tours or driving directions.
- 4. Gamification Elements**
 - Users can earn points for visiting landmarks, completing quests, or solving puzzles.
 - Badges and achievements for specific activities (e.g., visiting 5 historical sites, completing 3 quests).
 - Leaderboards that show top travelers by region or globally.
- 5. Social Features**
 - Share achievements and visited landmarks on social media.



- Option to invite friends and compete with them on leaderboards.
- Commenting and reviewing visited places.

6. Push Notifications

- Notifications about new quests, special events, or challenges.
- Reminders for incomplete quests or upcoming challenges in nearby locations.

3.3 Additional Features

- **Integration with payment systems** to allow in-app purchases (e.g., paid tours or premium quests).
- **Multilingual support** (English, Russian, Uzbek) with the possibility to add other languages.
- **Weather forecasting** for the regions users are planning to visit.
- **Augmented Reality (AR)** integration to enhance the experience of viewing landmarks or solving puzzles.



4. INTERFACE REQUIREMENTS

- A user-friendly and intuitive interface with clear navigation.
- The design should reflect the cultural and historical context of Uzbekistan.
- A visually appealing design using local patterns, colors, and images.
- Dark mode and light mode support.
- Accessible interface for users with disabilities.

5. NON-FUNCTIONAL REQUIREMENTS





- High performance and responsiveness of the app, even in offline mode.
- Secure storage of user data (personal information, progress, etc.).
- Scalability to handle a growing number of users and data (landmarks, quests).
- Compliance with GDPR and other data privacy regulations.

6. PROJECT TIMELINE FOR HACKATHON MVP

- Requirements analysis: 1 day.
- Prototype design: 3 hours.
- Backend and API development: 6 hours.
- Frontend development: 10 hours.
- Testing and bug fixing: 3 hours.
- Final MVP release: 3 hours.

7. TECHNOLOGIES

- **Frontend:** VueJS/NuxtJS
- **Backend:** Python(FastAPI)
- **Database:** PostgreSQL
- **Hosting:** Self-Hosted Docker Swarm/K8s cluster
- **Maps and Location Services:** Google Maps API, OpenStreetMap, or similar.

8. TEAM STRUCTURE





- **Project Manager:** Shavkat Kurbanbaev
- **Front-End Developer:** Alexandr Kugaevskiy
- **Back-End Developer:** Shavkat Kurbanbaev
- **DevOps Engineer:** Shavkat Kurbanbaev
- **UI/UX Designer:** Arina Reznik
- **Quality Assurance:** Arina Reznik, Alexandr Kugaevskiy