

Project Proposal

Name of the Project:

GUIDE: Guided User Itinerary & Destination Explorer

The URL of the Project Web Page:

<https://tunakodal.github.io/quad-core/>

Names of the Team Members:

- **Ebrar Sude Doğan:** Project Manager
- **Erdem Baran:** Database Administrator & API Specialist
- **Kayrahan Toprak Tosun:** Scrum Master & Backend Development Leader
- **Tuna Kodak:** AI Specialist & Frontend Development Leader

Project Description:

The GUIDE (Guided User Itinerary & Destination Explorer) system is an intelligent, context-aware travel planning and guidance platform designed to revolutionize how tourists explore Türkiye's rich cultural and historical destinations. The system addresses the critical problem of fragmentation in current travel planning tools, where users must navigate between multiple disconnected applications—navigation apps, guidebooks, review sites, and translation services, leading to inefficient planning and suboptimal travel experiences.

GUIDE provides a unified, web-based solution that combines preference-aware route planning, AI-driven point-of-interest (POI) recommendations, interactive map visualization, and multilingual audio guidance within a single integrated platform. The system combines advanced technologies, including OpenStreetMap [1] for geospatial data, OSRM (Open Source Routing Machine) [2] for optimized route calculation, and ElevenLabs API [3] for high-quality text-to-speech functionality in Turkish, English, and German. By analyzing user preferences such as region, trip duration, distance constraints, and interest categories (historical sites, museums, natural landmarks, etc.), GUIDE generates customized multi-day itineraries that maximize traveler engagement while respecting time and accessibility constraints. The platform features an intuitive user interface with real-time map visualization powered by Leaflet.js [4], destination information enriched with visual content from reliable sources (UNESCO [5], Wikipedia [6], Flickr [7], Pixabay [8]), and comprehensive audio descriptions that enhance the exploration experience for all users, including those with language barriers.

References

1. OpenStreetMap Foundation. (n.d.). OpenStreetMap. <https://www.openstreetmap.org> Access Date: 16.09.2025
2. OSRM Project. (n.d.). Open Source Routing Machine HTTP API Documentation. <http://project-osrm.org> Access Date: 16.09.2025
3. ElevenLabs. (n.d.). Text-to-Speech API Reference. <https://elevenlabs.io> Access Date: 16.09.2025
4. Leaflet.js. (n.d.). Interactive Maps Library for JavaScript. <https://leafletjs.com> Access Date: 16.09.2025
5. UNESCO. (n.d.). UNESCO World Heritage Centre – Türkiye. <https://www.unesco.org.tr> Access Date: 16.09.2025
6. Wikimedia Foundation. Wikipedia: The Free Encyclopedia. <https://www.wikipedia.org> Access Date: 16.09.2025
7. Flickr Inc. (n.d.). Flickr Services API. <https://www.flickr.com/services/api/> Access Date: 16.09.2025
8. Pixabay GmbH. (n.d.). Pixabay API Documentation. <https://pixabay.com/api/docs/> Access Date: 16.09.2025

Note: Spell checking and basic grammatical verification were performed using Grammarly: (<https://www.grammarly.com>).

GUIDE (Guided User Itinerary & Destination Explorer)

QUAD-CORE Team | TOBB ETÜ

January 2026
