**ONLINE TRIP MANAGEMENT SYSTEM**

**1. Introduction**

* Planning trips can be time-consuming and inefficient.
* **Online Trip Management** helps users find the best tourism packages based on:
  + **Number of travelers**
  + **Distance of destination**
  + **Optimal route using GPS & Dijkstra’s Algorithm**
* The system includes three modules: **User, Package Provider, and Admin.**

**2. Objectives**

* Provide personalized trip packages based on traveler preferences.
* Calculate **optimal routes** using **GPS** and **Dijkstra’s Algorithm**.
* Allow package providers to list tourism plans and manage bookings.
* Offer an **Admin Panel** for managing users, providers, and transactions.
* Enhance user experience with real-time tracking and AI-based recommendations.

**3. Technologies Used**

* **Programming Languages:** Kotlin, Java (Android), Swift (iOS), Python (Backend)
* **Frameworks & APIs:** Google Maps API, Firebase, REST APIs
* **Algorithm:** Dijkstra’s Algorithm (for shortest route calculation)
* **Database:** Firebase Firestore, MySQL
* **Cloud Services:** AWS, Google Cloud

**4. Methodology**

1. **User Inputs Preferences:** Number of members, budget, destination type.
2. **Package Matching:** System suggests packages based on preferences.
3. **Distance Calculation:** Uses **GPS and Dijkstra’s Algorithm** for route optimization.
4. **Booking & Payment:** User confirms package and completes payment.
5. **Real-time Tracking:** Users track trips and receive notifications.
6. **Admin Management:** Admin monitors all bookings, transactions, and providers.

**5. Existing System**

**Disadvantages:**

* **Manual Package Selection:** Users rely on agents for trip planning.
* **No Distance Optimization:** Traditional systems don’t suggest the best route.
* **Lack of Personalization:** Packages are fixed and not customized to preferences.
* **No Real-time Tracking:** Users have no way to track their journey.

**6. Proposed System**

**Advantages:**

* **AI-Based Package Suggestions:** Matches users with the best trip plans.
* **Optimized Route Planning:** Uses **GPS and Dijkstra’s Algorithm** for the shortest path.
* **Real-time Tracking:** Users can monitor their trips live.
* **Customizable Packages:** Package providers can tailor packages based on demand.

**7. System Modules**

**User Module (Mobile App)**

* Register/Login
* View and compare trip packages
* Book and pay for packages
* Track trip in real-time
* Review and rate trips

**Package Provider Module (Web & Mobile App)**

* Register/Login
* List tourism packages with details
* Manage bookings and payments
* Update package availability

**Admin Module (Web Application)**

* Manage Users and Package Providers
* Monitor trip bookings and transactions
* Generate reports and analytics
* Handle complaints and feedback

**8. Feature Scope**

* **Dynamic Package Selection:** AI suggests the best package based on preferences.
* **Real-time GPS Tracking:** Users can track their journey live.
* **Secure Payment Gateway:** Supports multiple payment options.
* **Route Optimization:** Uses **Dijkstra’s Algorithm** for the shortest path.
* **Multi-language Support:** Offers packages in different languages.
* **Social Sharing:** Users can share their trips on social media.

**9. Conclusion**

* **Online Trip Management** simplifies trip planning with smart recommendations.
* Enhances user convenience with **AI-based packages** and **real-time tracking**.
* Ensures efficient travel by **optimizing routes** and reducing travel costs.

**Thank You!**