



CSE470: Software Engineering

Project Title: TripBloom

CSE470 - Section: 3, Fall - 2025	
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Tour Management System

Functional Requirements

Module 1: User Management & Authentication

Purpose: Manage users, roles, and personal preferences to ensure a secure and personalized experience.

Features:

1. **User Registration & Login** – Standard signup/login with email, phone, or social media integration.
2. **User Profiles** – Store preferences (budget, travel type, destinations of interest).
3. **Role-Based Access** – Admins, customers, and tour operators with different permissions.
4. **KYC Verification** – Optional ID/passport verification for international or high-tier packages.
5. **Loyalty & Reward System** – Earn travel points, badges, and discounts for repeat bookings.

Module 2: Tour Packages & Customization

Purpose: Manage all types of tour packages (personal, group) and provide customization options.

Features:

6. **Category-Based Packages (Personal Tour)** –
 - *Silver:* Budget hotels, shared transport, basic meals.
 - *Gold:* 3–4 star hotels, semi-luxury bus, curated meals.
 - *Platinum:* 5-star hotels, private car, gourmet dining, personal guide.
 - *(Bonus Suggestion: Add “Diamond Elite” for ultra-luxury, with helicopter/boat transfers.)*
7. **Group Tour Packages** – Pre-designed tours with schedule, activities (BBQ, bonfire, music).
8. **Day/Night Duration Selector** – Users choose how many days/nights they want.
9. **Dynamic Pricing Engine** – Price adjusts automatically based on season, category, or demand.
10. **Add-on Services** – Insurance, visa support, event tickets, photography, or adventure activities.

Module 3: Booking & Payment Management

Purpose: Handle booking flow, seat allocation, availability tracking, and secure payments.

Features:

- 11. **Real-Time Availability** – Show available seats or slots for selected dates.
- 12. **Seat Selection (for Group Tours)** – Let users pick bus/tent/hotel room positions visually.
- 13. **Personalized Tour Builder** – Drag-and-drop destinations to create a custom itinerary.
- 14. **Multiple Payment Gateways** – Integrate PayPal, Stripe, local wallets, and EMI options.
- 15. **Smart Cancellation & Refund System** – Flexible refund policy with auto-calculated deductions.

Module 4: Operations & Admin Dashboard

Purpose: Backend control for admins and tour operators to manage everything efficiently.

Features:

- 16. **Admin Dashboard** – Overview of total bookings, revenue, and user analytics.
- 17. **Tour Operator Panel** – Manage assigned tours, upload itineraries, track bookings.
- 18. **AI-based Demand Prediction** – Suggest trending destinations or best-selling packages.
- 19. **Safety & Compliance Tracking** – Food safety checks, transport inspections, guide verification.
- 20. **Chat Support System** – 24/7 chatbot for user queries and complaint resolution.

Module 5: Engagement, Reviews & Unique Experiences

Purpose: Boost user engagement, trust, and retention with unique travel features.

Features:

- 21. **AR/VR Destination Preview** – Users can experience virtual tours before booking.
- 22. **Social Sharing & Group Formation** – Share plans or invite friends to join tours.
- 23. **Review & Rating System** – Post-tour reviews, photos, and verified feedback.
- 24. **Smart Itinerary Tracker (Mobile App)** – Offline itinerary access, live maps, notifications.
- 25. **Emergency Assistance System** – SOS feature for travelers (live location sent to authorities).

Non-Functional Requirements

1. Performance

- The system should load each page within 3 seconds.
- It should handle at least 100 users at the same time without slowing down.

2. Availability

- The system should be available 24/7 with minimal downtime.

3. Security

- User passwords and payment details must be encrypted.
- Only authorized users (Admin, Tour Operator, Customer) can access their own modules.

4. Usability

- The interface should be easy to use for all types of users.
- Important actions (like booking or payment) should need only a few clicks.

5. Scalability

- The system should support more users and data as the business grows without major changes.

6. Reliability

- The system should handle network or server errors gracefully and recover quickly.

7. Maintainability

- The code should be well-structured and documented so updates can be done easily.

8. Compatibility

- The system should work on different devices and browsers (mobile, tablet, desktop).

9. Backup & Recovery

- All booking and payment data should be backed up daily and recoverable in case of system failure.

10. Support & Help

- The system should include help guides or chat support to assist users when needed.