

# TRAVELS-FLIGHT,BUS,TRAIN BOOKING SYSTEM

## ARCHITECTURE:

### Microservices architecture

#### 1.User Onboarding

- **User Registration/Login** (Email, phone, social login)
- **Guest Mode** (Limited browsing without login)
- **Profile Management** (personal details, ID proof upload)
- **Multi-language**
- **Travel History** and saved bookings

#### 2. Search & Booking Engine

- **Multi-mode Search:**
  - **From – To** location selection
  - **Date & Time** selection
  - **One-way / Round-trip / Multi-city** (for flights)
  - **Passenger Details Input**
- **Filter Options:** (Price, duration, stops, etc)
  - **Class** (economy, business, sleeper, etc.)
  - **Operators** (Airlines, IRCTC, Bus, Cab, moto brands)
  - **Departure/Arrival time, Price, Duration**
- **Live Availability of seats**
- **Sort Options** (Cheapest, Fastest, etc.)

#### 3. Search Results & Booking Flow

- **Live schedules and availability** (API integration)
- **Pricing with tax breakdown**
- **Real-time seat/berth/flight class availability**
- **Interactive seat/class selection**
- **Detailed Trip Info Page** before checkout

#### **4. Payment Module**

- **Dynamic Pricing based on demand**
- **Secure Payments (UPI, Cards, Wallets- PCI DSS compliant)**
- **Booking Confirmation & E-ticket generation (PDF/email/SMS)**
- **E-Ticket Management**
- **Multiple payment options: UPI, Credit/Debit Cards, Wallets, Netbanking**
- **Save payment methods**
- **Coupon / Promo code support**

#### **5. E-Ticket Management**

- **Booking confirmation (with PNR, ticket number)**
- **E-ticket generation & sharing**
- **QR code or barcode for ticket verification**
- **Download as PDF**
- **Ticket cancellation and refunds (if applicable)**

#### **6. Notifications & Alerts**

- **Booking confirmation via email/SMS/push**
- **Real-time updates: gate changes, delays, cancellations**
- **Reminders for upcoming trips**

#### **7. Trip Management**

- **Upcoming Trips**
- **Past bookings**
- **Rebook feature**

#### **8. Cancellation & Refunds**

- **View cancellation policy**
- **Initiate cancellation**
- **Track refund status**

#### **9. Admin Module**

- **Manage Listings: Flights, trains, buses**
- **Operator/Partner Portal**

- **Booking Analytics & Reports**
- **User Feedback & Issue Management**
- **Promo Codes & Discounts setup**

#### **10. Security & Compliance**

- **OTP Verification for bookings**

#### **11. Integration APIs**

- **For testing mock api**
- **IRCTC Integration**
- **Bus Aggregators (Redbus, Abhibus, etc.)**
- **Google Maps / Location services**
- **SMS & Email Gateways**
- **Payment gateways (Stripe, Razorpay, PayPal, etc.)**

#### **12.Support Feature:**

- **Chatbot**
- **In-app chat support / chatbot**
- **FAQs**
- **Contact support via call/email**

#### **13.Deployment Layer:**

- **Load Balancer**
- **Dockerized Microservices**
- **CI/CD Pipeline**
- **Monitoring & Alerts**
- **Auto Scaling**

