ROUTEBUDDY

From Roads to Runways-We've Got You Covered

TEAM-7 TRAVEL- FLIGHT, BUS, TRAIN BOOKING SYSTEM)

1. Purpose of the Document

This document outlines a comprehensive solution for a modern **multi-modal travel booking system**, designed to simplify the process of booking **flights, buses, and trains** through a **microservices-driven, intelligent platform**. With growing demand for seamless travel experiences, the system is built to serve users with real-time access, automated features, and personalized travel recommendations.

2. Business Case

Planning a journey across cities shouldn't feel like solving a puzzle with disconnected apps, conflicting schedules, and unavailable tickets. Travelers today demand more than just a booking—they want flexibility, real-time clarity, and a unified experience.

That's where our **Smart Travel Booking System** comes in.

This platform brings together **air, rail, and road transport services** into one intelligent ecosystem—designed to simplify the booking process for users, empower TripVendors with control, and give administrators the tools to keep everything running smoothly.

For the Traveler:

They sign in or explore as a guest, search any route, and the system handles the rest— whether it's a direct flight or a clever combo of bus and train. Real-time seat availability, dynamic fare suggestions, interactive seat selection, digital tickets, and instant updates make it feel like a personal travel assistant in their pocket.

For TripVendors:

Airlines, bus services, and rail partners can list and manage their schedules through a dedicated partner portal. They can monitor bookings, update routes, adjust fares, and respond to customer needs—all while reaching a wider audience without handling frontend complexity.

For Admins:

Admins act as the system's control tower. They ensure the platform runs seamlessly—onboarding new TripVendors, monitoring booking trends, pushing out promotional offers, and managing refund/cancellation policies. They also oversee integration with third-party APIs like IRCTC, RedBus, and major payment gateways.

Location:

Completely Online.

Supported Platforms:

Web Browser (Responsive Design)

Products and Services Offered

- **Smooth Sign-Up & Smart Profiles**

  Sign in with Email, Phone OTP, or Social-your travel dashboard, your way.

- **Guest Mode for Quick Peek Travelers**

  No account? No problem. Browse and explore freely before committing.

- **One Place. All Modes.**

  Book Flights, Buses, and Trains with support for one-way, round-trip, or even multi- city adventures.

- **Live Seat & Schedule Checker**

  Know what's available *right now*—across all vendors, all in real-time.

- **Click-to-Choose Seat Selector**

  Pick your favourite window seat, cozy berth, or premium flight class—visually and interactively.

- **Smart Filters & Sorting Options**

  Slice and dice results by price, time, stops, class, or just hit "Cheapest" or "Fastest".

- **Payments That Just Work**
  UPI, Cards, Wallets - fast and secure.

- **Instant Bookings + E-Tickets On-the-Go**
  Confirm bookings and get your digital ticket via SMS, Email, or PDF-automatically.

- **Scan & Board with E-Ticket QR/Barcode**
  No printouts needed. Flash your QR and you're good to go.

- **Smart Notifications That Matter**
  Gate changed? Train delayed? Get instant alerts via push, SMS, or email.

- **Flexible Cancellations & Easy Refunds**
  Cancel with a click and track your refund in real time.

- **Partner Portal for Transport Providers**
  Vendors can manage listings, update prices, and view performance—all in their own dashboard.

- **Built-in Chatbot & Helpdesk**
  Stuck somewhere? Talk to our friendly bot or real agents—right inside the app.

- **Admin Command Centre**
  From reports to refunds, user control to offer campaigns—admins run the show from here.

- **Smart Journey Engine (Multi-Leg Travel Lic)**
  It's like having a route-planning genius built in.

Target Users

- Individual Travelers

- Travel Aggregators & Tripvendors

- Admins managing listings, pricing, and feedback

Solution Summary

1.Solution Highlight

The goal is to give travellers a smart, tech-powered travel buddy—an all-in-one platform where they can access real-time routes, dynamically discover optimal travel combos across flights, buses, and trains, reserve their ideal seats with interactive maps, manage digital tickets effortlessly, and get instant updates—all powered by APIs, automation, and intelligent microservices.

Dynamic Travel Combo System – A Smart Journey Engine

Our platform goes beyond simple "From-To" searches. It intelligently detects the **best available paths** when no direct route exists.

Example:

If there's no direct train from **Chennai to Delhi**, the system may suggest:

- Bus: Chennai → Hyderabad

- Flight: Hyderabad → Jaipur

- Train: Jaipur → Delhi

This is powered by a **graph-based route engine** using real-time data across modes, optimized to minimize cost, time, and transfers. The feature opens up **smarter travel possibilities**, making sure users never hit a dead-end—even when routes are complex.

2.Module Description

1. Admin

- Admin manages system-wide configuration and settings.

- Authenticate system access and control all admin privileges.

- Review and approve operator/partner registrations.

- Monitor all booking activity, route usage, and system performance.

- Manage listings, pricing policies, and route visibility.

- Set up promo codes, discounts, and announcement banners.

- Monitor feedback and issue logs submitted by users and partners.

- Integrate and maintain third-party APIs for transport, payments, maps, SMS, and email services.

- Generate daily, weekly, or monthly reports for bookings and revenue.

- Admin can log in/log out securely

2. Vendors/Partner

- Partner (Airline/Bus/Rail service) can register/login through the Partner Portal.

- Manage and update route listings, timings, pricing, and seat inventory.

- View live booking status and seat occupancy for their routes.

- Modify trip details and send delay or cancellation alerts.

- Respond to feedback or complaints from users.

- Access performance reports showing passenger count, peak times, and booking trends.

- Partner users can log out after completing operations.

3. Registered Traveler (User)

- Travelers can register/login using Email, Phone OTP, or Social login.

- Enter personal details and manage their profile securely.

- Search and book travel routes (Flight, Train, Bus) with smart filters.

- Select seats/berths interactively and proceed to payment.

- View price breakdown, apply coupons or promo codes.

- Receive instant booking confirmation and e-ticket via Email/SMS/PDF.

- Cancel trips if needed and track refund status.

- View and manage upcoming and past trips.

- Set preferences for language, class, or saved routes.

- Users can log out after session completion.

4. Guest User (No Login)

- Guest users can browse routes and transport options without signing in.

- View seat availability, prices, and operator details.

- Get route suggestions powered by the Smart Journey Engine.

- Option to sign up or continue as guest until checkout.

- Encouraged to register before completing the booking.

- Guest experience is limited—cannot access trip history, saved preferences, or rebooking.