

Transportation E-Ticketing System Features

1. User Authentication (Login, Logout, Authentication)

Secure registration and login system using JWT and bcrypt.

Authentication middleware to protect routes.

Optional email verification and password reset.

2. Multi-Vendor System (Admin, Operators, Users)

Role-based access control: Admin (full access), Operators (manage their own transports), Users (book tickets).

Enforced on backend and frontend.

3. Transportation Details

Manage routes with stops, schedules, fares.

Vehicle types and seat maps.

Operator assignment and vehicle features.

4. Ticket Booking

Real-time seat selection and booking.

Seat hold timer to avoid double booking.

Booking confirmation stored and linked to user and route.

5. Ticket Booking History

Users can view and filter past and upcoming bookings.

Download or view ticket details.

6. Ticket Cancellation System

Allows cancellation before journey start.

Seat availability updated accordingly.

Email notifications on cancellation.

7. Downloadable E-Ticket

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Generate PDF tickets with booking info and QR code.

Clean, branded design using pdfkit or jsPDF.

8. Email Ticket

Automatically send e-ticket by email after booking.

Reliable delivery with retry logic.

9. Personal Trip Planner

Users can create and save custom trip itineraries.

Add multiple legs, preferred timings, and notes.

System suggests best routes and available transport options for each leg.

View and edit saved trips anytime.

Useful for complex journeys with transfers or multiple stops.

10. Trip Analytics & Reporting Dashboard

Admin and operators see booking trends, cancellations, and occupancy.

Visual charts with Chart.js or Recharts.

Export reports for offline use.