



AMAL JYOTHI
COLLEGE OF ENGINEERING
(A U T O N O M O U S)

TRAVEL MANAGEMENT

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Scrum Master

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ABSTRACT

TRAVEL MANAGEMENT

The travel management system for a bus transportation company is designed to streamline and enhance the overall experience of both passengers and staff. The system consists of three primary modules: User, Admin, and Staff. Each module is equipped with specific functionalities to ensure efficient management and operation of bus services. The User module focuses on passenger needs, The Admin module handles the management of operations, and the Staff module facilitates staff-related tasks. Additionally, a future enhancement includes the implementation of machine learning technology for live tracking of buses.

User Module

1.Registration/Profile Creation

- Users can register by providing necessary details like name, email, phone number, and password.
- Users can manage their profiles, including updating personal information and changing passwords.

2.Booking and Cancellation of Tickets

- Users can book tickets by selecting the preferred bus, seat, and entering payment details.
- Users can view their booking history and cancel tickets if needed, with the system handling any applicable refunds.

3.Search for Buses

- Users can search for buses using various filters such as departure date, time, and route.
- The system provides a list of available buses along with details like seat availability, fare, and amenities.

4.Payment Options

- Integration with multiple payment gateways (credit/debit cards, digital wallets, net banking) to facilitate secure transactions.
- Users receive payment confirmations and receipts via email and SMS.



5.Feedback/Rating

- Users can provide feedback on their travel experience and rate the bus services.
- This feedback helps improve service quality and user satisfaction.

6.Notifications

- Users receive notifications about booking confirmations, cancellations, schedule changes, and promotional offers.
- Notifications are sent via email, SMS, and in-app messages.

7.E-Ticket Generation

- After booking a ticket, users can receive an e-ticket which can be saved digitally or printed for their journey.
- E-tickets include all necessary travel details, including bus number, seat number, departure time, and boarding point.

Admin Module

1.Route Management

- Admins can create and manage bus routes, including start and end points, stops, and schedules.
- Routes can be modified or deactivated based on operational requirements.

2.Automated Trip Scheduling

- The system can automatically schedule trips according to predefined routes, optimizing departure and arrival times, bus assignments, and driver details.
- Admins can set up recurring schedules, and the system will manage the trip allocation based on available resources.

3.Travel Log Maintenance

- Detailed logs of all trips, including passenger counts, revenue, and incidents.
- Logs can be accessed and analyzed for operational insights and reporting.

4.Bus Maintenance

- Maintenance logs include details of services performed, parts replaced, and upcoming maintenance schedules.

5.Bus History

- Comprehensive records of each bus, including purchase details, service history, and operational status.
- Information about the number of buses in service and spare buses available.

6.Automated Refunding

- Refunding is managed and processed automatically for canceled tickets or service disruptions.
- The system integrates with payment gateways and APIs to issue refunds seamlessly.

7.Staff Registration

- Admins can register and manage staff members, including drivers, conductors, and maintenance personnel.
- Staff profiles include personal information, job roles, and work schedules.

8.Promotions and Discounts

- Admins can create and manage promotional campaigns and discount offers to attract more passengers.

9.Automated Salary Management

- Salaries are calculated and disbursed automatically based on staff attendance and trip assignments.
- The system integrates attendance records to ensure accurate salary computation.

10.Automated Scheduling for Accidents or Breakdowns

- The system can automatically schedule or rearrange another bus based on reports of accidents or breakdowns.
- Admins receive notifications about such incidents and can monitor the remedial actions taken by the system.

11.Leave Management

- Admins can manage and approve leave requests from staff.
- The system tracks leave balances and ensures adequate staffing levels.

Staff Module

1.Staff Profiles

- Staff members can log in to their profiles to view and manage their schedules.
- Profiles include personal details, work history, and performance records.

2.Trip Assignment

- Drivers and conductors receive their trip assignments, including route details, departure times, and bus information.
- Staff can acknowledge and accept assignments through the system.

3.Trip Management

- Drivers and conductors can update trip status in real-time, including departure, arrival, and any delays or incidents.
- The system logs all trip-related information for future reference.

4.Attendance and Payroll

- Staff members can mark their attendance and view their attendance records.
- The system can generate payroll based on attendance, trip assignments, and any additional allowances or deductions.

5.Communication

- Staff can communicate with the admin and other staff members through the system for coordination and support.
- Notifications about schedule changes, maintenance tasks, and important updates are sent to relevant staff.

6.Accident or Breakdown Notification

- Staff can report accidents or breakdowns to the admin via the system.
- The system sends an immediate notification to the admin, who can then arrange for a spare bus or other remedial measures to ensure minimal disruption to service.

7.Leave Requests

- Staff members can request leave through the system.
- Leave requests are sent to the admin for approval, and staff can track the status of their requests.

Future Enhancement: Machine Learning for Live Tracking

The system will incorporate machine learning technology to enable live tracking of buses. This enhancement will include:

- **Real-Time Location Tracking** : Using GPS data and machine learning algorithms to provide accurate, real-time location updates for each bus.
- **Predictive Analysis** : Predicting arrival times and potential delays based on traffic patterns, historical data, and current conditions.
- **Passenger Notifications** : Sending real-time updates to passengers about bus locations, expected arrival times, and delays.
- **Operational Insights** : Providing admins with data-driven insights into bus operations to optimize routes, schedules, and resource allocation.

Conclusion

This travel management system for a bus transportation company aims to enhance operational efficiency, improve passenger experience, and streamline staff management. By integrating these functionalities into a unified platform and incorporating future enhancements like machine learning for live tracking, the system provides a comprehensive solution to the challenges faced by bus transportation companies.