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Database Management Systems IA1 Poster

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Bus Ticket Management System

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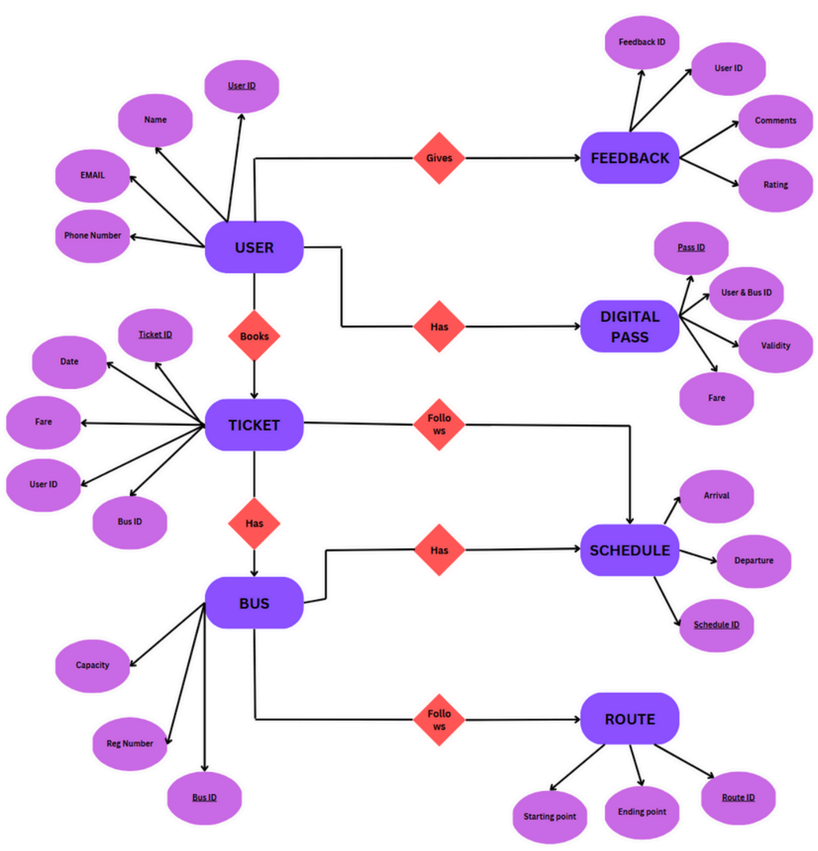
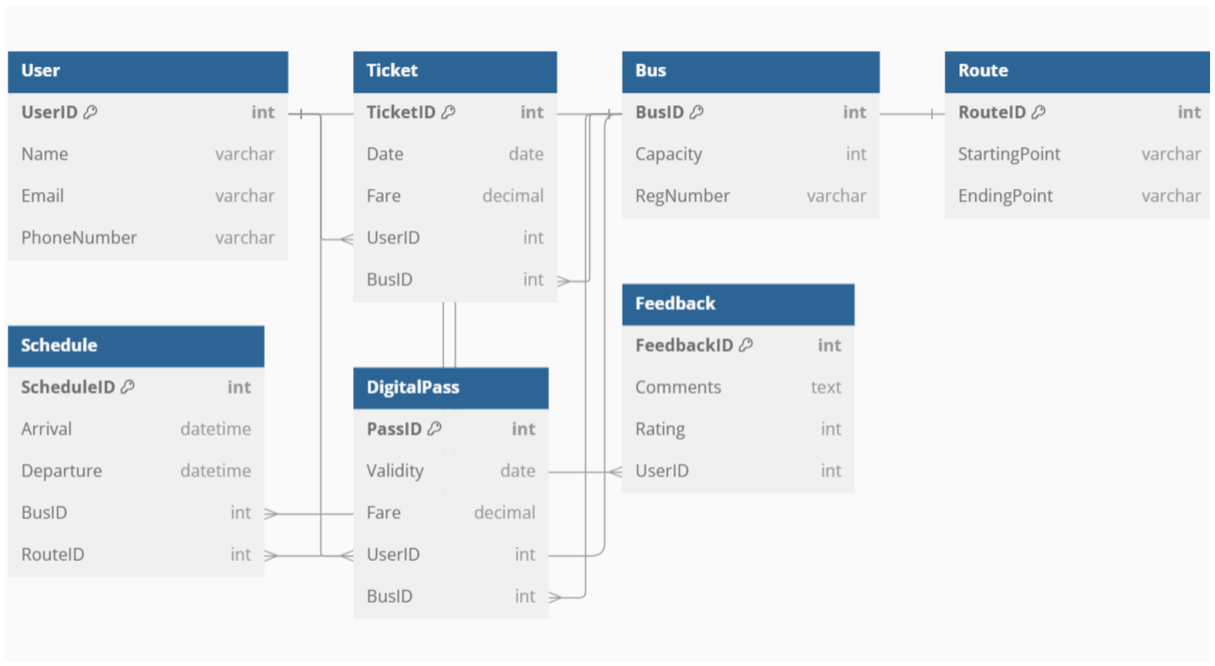
Introduction

The Bus Ticket Management System is a digital solution designed to streamline and automate the process of booking, scheduling, and managing bus tickets. This system caters to both passengers and operators, aiming to enhance convenience, improve operational efficiency, and provide a user-friendly interface for booking and managing trips. In an era where digital transformation is a priority, such systems reduce manual efforts, mitigate errors, and improve the overall experience for commuters. With features such as online ticket booking, route and schedule management, digital passes, and user feedback mechanisms, the Bus Ticket Management System integrates all essential components to offer a seamless travel experience.

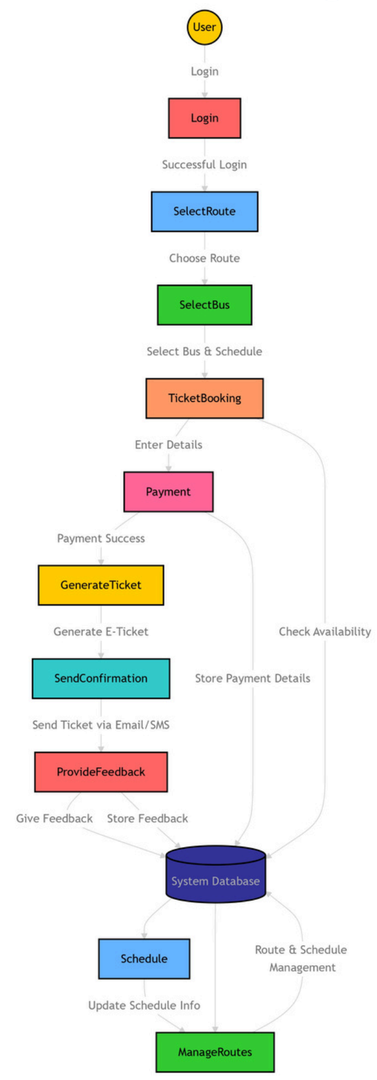
ER Diagram



Relational Model



Workflow Diagram



Advantages

Convenience and Accessibility: Passengers can book tickets from anywhere at any time, without needing to visit a physical ticket counter, saving time and effort.
Efficient Resource Management: Operators can manage bus schedules, track seat availability, and optimize bus routes based on demand, ensuring better utilization of resources.
Reduced Human Error: Automated booking and scheduling reduce the chances of manual errors that might occur with paper-based or semi-digital systems.
Data Insights: The system can gather data on booking patterns, peak travel times, and customer preferences, which can be analyzed to improve services and introduce promotions.
Enhanced Customer Feedback: By enabling passengers to provide digital feedback, operators can gain insights into service quality and areas for improvement.
Eco-Friendly: Reducing the need for paper tickets supports environmental sustainability by minimizing paper waste.

Disadvantages

Technical Dependence: The system relies heavily on technology and internet connectivity; disruptions could lead to inconvenience for users and potential revenue losses for operators.
High Initial Cost: Developing, implementing, and maintaining the system requires significant investment, which may be challenging for smaller operators.
Security Risks: Storing passenger information and payment data digitally makes the system vulnerable to cyber-attacks and data breaches.
Digital Divide: Some users, particularly those without internet access or digital literacy, may face difficulties accessing the system, leading to potential exclusion.
System Downtime: Technical issues or server downtime can disrupt services, causing delays or errors in booking, which might inconvenience customers.
Maintenance Requirements: Regular updates and maintenance are essential to keep the system running smoothly, which incurs ongoing costs and requires technical expertise.