Graduate Diploma in Software Engineering

Module Code ITS1166

Professional Software Project in IT

Project Synopsis

Bus Seat Reservation Management System

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Background of the business

In the Eastern Province of Sri Lanka, there are many travel companies such as Myown Travels, Al-Ahla Travels, RS Express, Sakeer Express, Al-Rashith Travels, and King Travels. These buses travel daily between Colombo and Eastern areas.

No of Employees

Owner - Sets ticket price and bus times, gives brokers permission, and manually tracks seats, income, and trip costs.

Seat Booking Checker - Getting bookings from broker/agent, note that bookings manually, collect cash from customers, reports to the owner.

Bus Driver - Drive busses to the correct time.

Helper – Helping driver, collecting spot payments, arrange customer seats as per booking details.

Main business processes

At present, most passengers book seats through local agents or brokers in their towns. Each broker charges an extra LKR 500 for a single ticket. The total ticket price becomes LKR 3000 including this broker fee.

Without a computerized system, travel owners rely on brokers to manually book seats, collect payments, record passenger details, and report total income. Owners track expenses like diesel, driver, and helper payments by hand. This manual process often causes errors, double bookings, and confusion in managing trips and income.

IT solution of the problem

To solve the problems of manual booking, human errors, and broker fees, a desktop-based **Bus Seat Reservation Management System**. The system has three user roles: **Admin**, **Travels Owner**, and **Seat Booking Checker**, each with different access levels. The **Seat Booking Checker** handles passenger bookings, adding customer details such as name, contact, address, booking date, selected bus, seat number, ticket price, and payment status. Operators can also check seat availability, prevent double bookings, and confirm tickets for passengers. The **Travels Owner** manages buses, trip details, and finances by adding or updating bus information, routes, schedules, diesel costs, driver and helper payments, and other expenses. Owners can also view total bookings, income, expenses, and profit per trip while setting ticket prices and app charges. The **Admin** has full control of the system, managing all users, viewing complete booking and income data, resetting passwords, and maintaining the system database. This solution makes seat booking faster, reduces human errors, prevents double bookings, and eliminates broker fees, allowing travel owners to manage trips and profits efficiently.

Use case diagram of this project

Bus Seat Reservation Management System