**INTRODUCTION**

Online Bus Ticket Reservation System is a web-based application that allows visitors check bus ticket availability, buy bus ticket and pay the bus ticket online. This system is established for all the home/office users after gaining access from the administrator.

According to Invaderzim. Online Bus Reservation System provides bus transportation system, a facility to reserved seats, cancellation of seats and different types of enquiries which need an instant and quick reservation. This system can be used by the users in performing online reservation via internet for their all-business purposes. Users can use this program directly on their websites and no need to install it.

The use of bus traveling is a large growing business in India and other countries; hence bus reservation system deals with maintenance of records of each passenger who had reserved a seat for a journey. It also includes maintenance of information like schedule and details of each bus. Also, we get to know that there are many operations, which they have to do manually. It takes a lot of time and causes many errors. Due to this, sometimes a lot of problems occur and they were facing many disputes with customers. To solve the above problem, and further maintaining records of items, seat availability for customers, price of per seat, bill generation and other things, we are offering this proposal of reservation system.

**Problem Definition**

Design and develop a bus reservation system to efficiently manage and facilitate the booking process for passengers, bus operators, and administrators. The system should provide a user-friendly interface for users to search for available buses, book tickets, make payments, and manage their reservations. Additionally, it should offer functionality for bus operators to manage their schedules, view bookings, and update bus information. Administrators should have access to manage users, buses, routes, and overall system settings. The system should ensure security, reliability, and scalability to accommodate varying levels of demand and usage.

**PROBLEMS THAT CAN BE SOLVED**

• Efficient Booking Process.

• Real-time Availability

• Secure Payment Processing

• Cancellation and Refund Management

• Route Optimization

• Customer Support Integration

• Inventory Management

• Reporting and Analytics

• Feedback and Reviews

**Software Requirement Specifications**

Operating System: Windows 10

Frontend: PHP, HTML, Bootstrap

Server Side: Apache, XAMPP

Backend : MySQL

IDE: Visual Studio Code

**Hardware Requirements Specifications**

Processor: AMD Ryzen 5 3500U, 3.90 GHz

RAM : 4 GB

System Type: 64-Bit Operating System Hard

Disk: 150 GB

**Development Environment**

• To set up a developer environment for a bus reservation system using PHP and SQL, you'll need to follow these general steps:

• Install a Web Server: You can use Apache or Nginx. For Apache, you can use XAMPP or WAMP for easy installation on Windows, or install it manually on Linux. For Nginx, you can install it manually or use a package manager like apt on Ubuntu.

• Install PHP: Install PHP on your system. Most web servers come with PHP support, but if not, you'll need to install it separately. Make sure to install the necessary extensions for database connectivity (e.g., php-mysql or php-pdo).

• Install MySQL (or another SQL database): Install MySQL or another SQL database system like MariaDB. Follow the installation instructions for your operating system.

• Database Setup: Create a new database for your bus reservation system. You can use the MySQL command line or a GUI tool like phpMyAdmin to create the database and necessary tables.

• Code Editor: Install a code editor such as Visual Studio Code, Sublime Text, or Atom for writing PHP code.

• Project Setup: Create a new directory for your project within the web server's document root. This is where you'll store your PHP files, HTML templates, CSS stylesheets, etc.

Implementation