

**SIMATS SCHOOL OF ENGINEERING**

**SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES CHENNAI-602105**

# Online Bus Booking System

**A CAPSTONE PROJECT REPORT**

*Submitted in the partial fulfilment for the award of the degree of*

**BACHELOR OF ENGINEERING**

**IN**

**COMPUTER SCIENCE**

**Submitted by**

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**Under the Supervision of**

**S. JAYANTHI**

**July 2024**

## DECLARATION

We, **B. Mukesh, G.V.Subhash Reddy,** students of **Bachelor of Engineering in Computer Science**, Department of Computer Science and Engineering, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, hereby declare that the work presented in this Capstone Project Work entitled “**Online Bus Booking System”** is the outcome of our own Bonafede work and is correct to the best of our knowledge and this work has been undertaken taking care of Engineering Ethics.

1. B.Mukesh 192211807

2. G.V.Subhash Reddy 192211218

## CERTIFICATE

This is to certify that the project entitled **“Online Bus Booking System”** submitted by **B. Mukesh, G.V.Subhash Reddy,** has been carried out under my supervision. The project has been submitted as per the requirements in the current semester of B.E. Computer Science.

Teacher-in-charge

**S. Jayanthi**

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### Abstract

An online bus booking system streamlines the process of searching, selecting, and purchasing bus tickets through a user-friendly web interface. Users can register, log in, and manage their profiles while accessing real-time bus schedules and seat availability. The system features an interactive seat selection tool and integrates secure payment gateways for seamless transactions. This efficient platform enhances user convenience and operational efficiency for bus operators.

To ensure the security and reliability of transactions, the platform incorporates secure payment gateways that support various payment methods, including credit/debit cards, net banking, and digital wallets. Once the booking process is complete, users receive e-tickets via email and SMS, providing immediate access to their travel details. The system also offers options for booking cancellation and refund processing, adhering to the bus operator's policies and ensuring a flexible experience for users. A robust admin panel allows bus operators to manage schedules, seat layouts, and pricing efficiently, as well as access detailed reports on bookings and revenue.

The system goes beyond basic functionalities by including additional features that enhance user satisfaction and operational efficiency. Loyalty programs and discounts encourage repeat usage, while multi-language support ensures accessibility for a global audience. Real-time bus tracking provides users with accurate arrival times and updates on delays, improving the overall travel experience. Offline booking support ensures that users can book tickets through phone support or physical kiosks, with seamless synchronization with the online system.

1. **Introduction**

In today's fast-paced world, convenience and efficiency are paramount, and this is especially true in the realm of transportation. An online bus booking system offers a comprehensive solution that simplifies the process of reserving bus tickets, catering to the needs of both passengers and bus operators. By enabling users to access real-time information on bus schedules, seat availability, and pricing, this system eliminates the need for physical ticket counters and long queues.

Additionally, with features such as user registration, profile management, interactive seat selection, and secure payment gateways, the online bus booking system ensures a seamless and hassle-free booking experience. This technological advancement not only enhances customer satisfaction but also boosts the operational efficiency of bus services, making it a vital tool in the modern transportation ecosystem.

The primary goal of the online bus booking system is to enhance the convenience and accessibility of bus travel. Users can search for buses, compare options, and book tickets from the comfort of their homes or on-the-go using their mobile devices. The platform’s intuitive design allows users to easily navigate through various functionalities, from registering and logging into their accounts to selecting their desired seats and making payments. By integrating user-friendly interfaces and robust backend systems, the platform ensures that even those with limited technical skills can effortlessly manage their travel plans.

Security is a paramount concern in any online transaction system. The online bus booking system incorporates advanced security measures to protect users' personal and financial information. Secure payment gateways are employed to handle transactions, supporting multiple payment methods and ensuring that all data is encrypted and safe from unauthorized access. Regular security audits and updates are conducted to maintain the highest standards of data protection and to address any potential vulnerabilities promptly.

1. **Project Description**

The online bus booking system is a web-based platform designed to facilitate the process of booking bus tickets for travelers and managing bookings for bus operators. The system is built to provide a seamless and efficient user experience, allowing users to book tickets from the comfort of their homes or on-the-go via their mobile devices.

Our mission is to revolutionize the bus travel experience by leveraging technology to provide a seamless, efficient, and user-friendly online booking platform. We aim to empower travelers with the convenience of booking tickets anytime, anywhere, and to enhance the operational efficiency of bus operators through innovative solutions. By prioritizing customer satisfaction, security, and ease of use, we strive to become the leading platform in the bus transportation industry, fostering a more connected and accessible world for everyone.

**Accuracy:** Accuracy is crucial in our online bus booking system, providing users with reliable, real-time information on bus schedules, seat availability, and pricing. Our platform ensures data validation and secure transactions to maintain high standards of trustworthiness. By prioritizing accuracy, we aim to deliver a dependable and seamless booking experience.

**Convenience:** Our online bus booking system prioritizes convenience, allowing users to effortlessly search for, select, and book bus tickets from any device, anywhere, at any time.

**Security:** Security is a top priority in our online bus booking system, ensuring that users' personal and financial information is protected at all times. We employ advanced encryption protocols and secure payment gateways to safeguard data during transactions. Regular security audits and updates are conducted to maintain a robust defense against potential threats, providing users with a safe and trustworthy booking experience.

1. **Problem Description**

**Real-time Data Accuracy and Availability:**

Our online bus booking system ensures real-time data accuracy and availability, providing users with the most up-to-date information on bus schedules, seat availability, and pricing. This real-time data integration allows users to make informed decisions quickly and efficiently. Continuous monitoring and updates ensure that the information displayed is always current, enhancing the reliability and user experience of our platform.

**Data Source Reliability:**

Data source reliability is crucial to our online bus booking system, ensuring that all information is accurate and up to date. We partner with reputable bus operators and continuously verify data to minimize errors. This commitment guarantees a dependable and trustworthy booking experience for our users.

**Security Concerns:**

Security concerns are addressed by implementing advanced encryption protocols and secure payment gateways, ensuring the protection of users' personal and financial information. Regular security audits and updates are conducted to defend against potential threats. Our commitment to security ensures a safe and trustworthy booking experience.

**Offline Accessibility:**

While our primary service is online, we recognize the importance of offline accessibility. To address this, we provide downloadable e-tickets and SMS confirmations, ensuring users can access their booking details without an internet connection. This approach enhances user convenience and reliability, even when offline.

**Localization and Language Support:**

Our system offers localization and language support to cater to a diverse user base, providing a seamless experience in multiple languages. This feature ensures users can navigate and use the platform comfortably in their preferred language. By embracing localization, we enhance accessibility and user satisfaction globally.

**User trust and education is vital;**

**we provide transparent information on our security measures and data policies. Additionally, we offer comprehensive guides and support to help users navigate the platform confidently. This commitment fosters a trustworthy and informed user community.**

1. **Tool Description**

**User interface:**

**Programming Languages:**

* **JavaScript:** Used for building interactive and dynamic user interfaces. Often used in combination with frameworks like React or Angular for frontend development.
* **HTML/CSS:** For structuring the user interface and styling elements. 
* **XAMPP** tool are also used for this website.

**Frontend Frameworks:**

* **React.js:** A popular JavaScript library for building user interfaces. It allows for the creation of reusable UI components and supports efficient rendering of data.
* **Angular:** A platform and framework for building single-page client applications using HTML and TypeScript.
* **Vue.js:** Another JavaScript framework for building reactive user interfaces.

**Features:**

**Mobile Optimization:** Optimize the currency converter for mobile devices with responsive design and native app development (e.g., using React Native). Ensure consistent performance across various screen sizes and operating systems.

**Feedback Mechanisms:** Implement feedback loops and user surveys to gather input and improve the currency converter based on user preferences and suggestions. Continuous iteration based on user feedback can enhance overall satisfaction and usability.

1. **Operations**

 **User Registration and Login:**

* Users create accounts or log in to manage their bookings and profiles.

 **Search for Buses:**

* Users enter departure and destination locations, travel dates, and preferred times to search for available buses.

 **Display Available Buses:**

* The system shows a list of buses matching the user's search criteria, including details like departure times, seat availability, and prices.

 **Select Bus and Seat:**

* Users choose a bus and select their preferred seats using an interactive seat map.

 **Provide Passenger Details:**

* Users enter the necessary passenger information for the booking.

 **Payment Process:**

* Users pay for their tickets through secure payment gateways, supporting various payment methods.

 **Generate E-Ticket:**

* After successful payment, an e-ticket is generated and sent to the user via email and SMS.

 **Cancellation and Refund (Optional):**

* Users can cancel their bookings and request refunds according to the operator’s policies.

 **Customer Support:**

* Users have access to help desks for inquiries, FAQs, and live support.

 **Feedback and Reviews (Optional):**

* Users can provide feedback and reviews about their travel experience.

1. **Approach**

### Choose a Data Source for Exchange Rates

### For exchange rates, Open Exchange Rates is a reliable choice, providing real-time and historical data for over 170 currencies via a user-friendly API. Fixer.io is also highly recommended, offering accurate rates for 170+ currencies with secure (HTTPS) connections and flexible pricing plans. Both options ensure high accuracy and reliability, suitable for various business needs.

### User Interface (UI) Module

**Description**: Handles user interaction and displays the converted currency.

The User Interface (UI) module in our online bus booking system ensures a seamless and intuitive experience for users. It features a clean and responsive design, allowing users to easily search for buses by entering departure and destination locations, travel dates, and times. The UI module includes interactive elements such as seat selection maps, secure payment forms, and user-friendly navigation to view booking history and manage profiles. By prioritizing usability and accessibility, the UI module enhances user satisfaction and streamlines the booking process.

**Functionalities:**

This are the Functionalities for the online bus booking system.

**Core Functionalities:**

1. **Core Functionalities**

**2.Search and Filter Buses:**

### 3.Bus and Seat Selection

### Additional Functionalities

1. Loyalty Programs and Discounts:
2. Multi-language Support:
3. Real-time Bus Tracking:
4. **Implementation**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8" />

  <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Login</title>

    <link rel="stylesheet" href="styles.css" />

    <script src="auth.js" defer></script>

  </head>

  <body>

<form id="loginForm" onsubmit="login(event)">

      <h1>Login</h1>

      <label for="email">Email:</label>

      <input type="email" id="email" required />

      <label for="password">Password:</label>

      <input type="password" id="password" required />

      <button type="submit">Login</button>

      <p>Don't have an account? <a href="signup.html">Sign Up</a></p>

    </form>

  </body>

</html>

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Select Bus</title>

    <link rel="stylesheet" href="style.css" />

    <script src="next-page.js" defer></script>

  </head>

  <body>

    <div class="content-container">

      <h1>Select Your Bus</h1>

      <div class="bus-options">

        <button

          class="bus-option"

          onclick="selectBus('SETC', '08:00', '12:00', '200')"

        >

          <div><h4>SETC</h4></div>

          <div>08:00 - 12:00</div>

          <div>Price: 200rs</div>

        </button>

        <button

          class="bus-option"

          onclick="selectBus('Amaravathi', '09:00', '13:00', '250')"

        >

          <div><h4>Amaravathi</h4></div>

          <div>09:00 - 13:00</div>

          <div>Price: 250rs</div>

        </button>

        <button

          class="bus-option"

          onclick="selectBus('Airavat', '10:00', '14:00', '300')"

        >

          <div><h4>Airavat</h4></div>

          <div>10:00 - 14:00</div>

          <div>Price: 300rs</div>

        </button>

        <button

          class="bus-option"

          onclick="selectBus('Nue GO', '11:00', '15:00', '350')"

        >

          <div><h4>Nue GO</h4></div>

          <div>11:00 - 15:00</div>

          <div>Price: 350rs</div>

        </button>

      </div>

    </div>

  </body>

</html>

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Sign Up</title>

    <link rel="stylesheet" href="styles.css" />

    <script src="auth.js" defer></script>

  </head>

  <body>

    <form id="signupForm" onsubmit="signup(event)">

      <h1>Sign Up</h1>

      <label for="name">Name:</label>

      <input type="text" id="name" required />

      <label for="email">Email:</label>

      <input type="email" id="email" required />

      <label for="password">Password:</label>

      <input type="password" id="password" required />

      <button type="submit">Sign Up</button>

    </form>

  </body>

</html>

 <!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Select Seats</title>

    <link rel="stylesheet" href="style.css" />

    <script src="seat-selection.js" defer></script>

  </head>

  <body>

    <div class="content-container">

      <h1>Select Your Seats</h1>

      <div class="seats-container" id="seatsContainer">

        <!-- Seats will be generated here by JavaScript -->

      </div>

      <button class="bus-booking-btn" onclick="confirmSeats()">

        Confirm Seats

      </button>

    </div>

  </body>

</html>

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>User Details</title>

    <link rel="stylesheet" href="style.css" />

    <script src="user-details.js" defer></script>

  </head>

  <body>

    <div class="content-container">

      <h1>Enter Your Details</h1>

      <form id="userDetailsForm">

        <div class="form-group">

          <label for="name">Name</label>

          <input type="text" id="name" name="name" required />

        </div>

        <div class="form-group">

          <label for="age">Age</label>

          <input type="number" id="age" name="age" required />

        </div>

        <div class="form-group">

          <label for="gender">Gender</label>

          <select id="gender" name="gender" required>

            <option value="">Select</option>

            <option value="Male">Male</option>

            <option value="Female">Female</option>

            <option value="Other">Other</option>

          </select>

        </div>

        <div class="form-group">

          <label for="mobile">Mobile Number</label>

          <input type="tel" id="mobile" name="mobile" required />

        </div>

        <button type="button" onclick="saveUserDetails()">Submit</button>

      </form>

    </div>

  </body>

</html>

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Online Bus Booking - Home</title>

    <link rel="stylesheet" href="style.css" />

    <script src="scripts.js" defer></script>

  </head>

  <body>

    <form id="bookingForm">

      <h1>Online Bus Booking</h1>

      <div class="nam">

        <label style="font-weight: bold" for="from">From</label>

        <input type="text" name="from" id="from" required />

      </div>

      <div id="too">

        <label style="font-weight: bold" for="to">To</label>

        <input type="text" name="to" id="to" required />

      </div>

      <div id="dat">

        <label style="font-weight: bold" for="date">Date</label>

        <input type="date" name="date" id="date" required />

      </div>

      <button

        class="bus-booking-btn"

        type="button"

        onclick="navigateToNextPage()"

      >

        Book

      </button>

    </form>

    <main></main>

  </body>

</html>

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Booking Details</title>

    <link rel="stylesheet" href="style.css" />

    <script src="book-details.js" defer></script>

  </head>

  <body>

    <div class="content-container">

      <h1>Booking Details</h1>

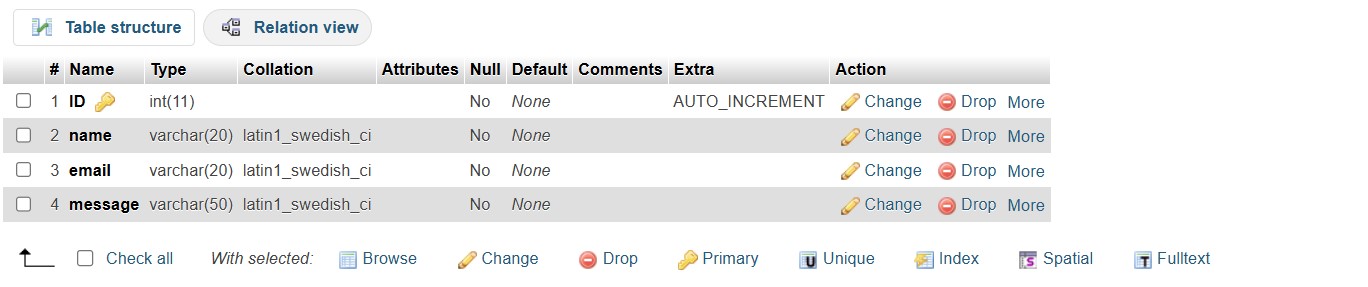
      <div id="bookingDetails"></div>

    </div>

  </body>

</html>

### Database



### Connection Php

<?php

if ($\_SERVER["REQUEST\_METHOD"] == "POST") {

// Check if required fields are present in the POST data

$name = isset($\_POST['name']) ? $\_POST['name'] : '';

$email = isset($\_POST['email']) ? $\_POST['email'] : '';

$message = isset($\_POST['message']) ? $\_POST['message'] : '';

// Create connection (replace with your actual database credentials) $conn = new mysqli('localhost', 'root', '', 'test');

// Check connection if ($conn->connect\_error) {

die("Connection error: " . $conn->connect\_error);

}

// Prepare and bind statement

$stmt = $conn->prepare("INSERT INTO t2 (name, email, message) VALUES (?, ?, ?)"); $stmt->bind\_param("sss", $name, $email, $message);

// Execute statement if ($stmt->execute()) { echo "<script>

alert('Thanks for submitting!');

window.location.href = 'http://localhost:8000/INTERNET-PROGRAMINGPROJECT.html#';

</script>";

} else {

echo "Error: " . $stmt->error;

}

$stmt->close();

$conn->close();

} else {

echo "Error: Invalid request method."; }

?>

### Contact us

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Contact Us</title>

</head>

<body>

<h2>Contact Us</h2>

<p>We are here to help you with all your currency conversion needs. If you have any questions, feedback, or need assistance, please don't hesitate to reach out to us.</p>

<h2>Customer Support</h2>

<p>Our customer support team is available to assist you from Monday to Friday, 9 AM to 6 PM (GMT).</p>

<ul>

<li>Email: <a

href="mailto:support@currencyconverter.com">support@currencyconverter.com</a></li> <li>Phone: +1 (800) 123-4567</li>

</ul>

<h2>Office Location</h2>

<p>Our main office is located at:</p>

<address>

Currency Converter Inc.<br>

123 Finance Street,<br>

Suite 456,<br>

New York, NY 10001<br>

USA

</address>

<h2>Feedback Form</h2>

<p>We value your feedback. Please fill out the form below to send us your comments and suggestions.</p>

<form method="post" action="http://localhost/connection.php">

<label for="name">Name:</label><br>

<input type="text" id="name" name="name"><br><br>

<label for="email">Email:</label><br>

<input type="email" id="email" name="email"><br><br>

<label for="message">Message:</label><br>

<textarea id="message" name="message" rows="4" cols="50"></textarea><br><br>

<button type="submit">Submit</button>

</form>

</body>

</html>

### About Us

<h2>Welcome to online bus booking system !</h3>

<p>At booking system, we are dedicated to providing you with the most accurate and upto-date exchange rates for all your booking system needs. Whether you're a traveler, a business professional, or just someone who needs to booking system, our goal is to make the process as seamless and efficient as possible.</p>

<h3>Our Mission:</h3>

<p>Our mission is to deliver reliable and real-time currency conversion data to our users. We aim to simplify the complexities of currency exchange and help you make informed financial decisions, no matter where you are in the world.<p>

<h2>Why Choose Us?</h2>

<p><b>Accuracy:</b> We partner with reputable financial data providers to ensure our exchange rates are always accurate and up-to-date.<br><br>

<b>Convenience:</b>Access our services from any device, anywhere in the world. Our responsive design ensures a smooth experience on both desktop and mobile.<br><br>

<b>Security:</b> We prioritize your privacy and security, using advanced technologies to protect your data.<br><br>

### Help

<p>Welcome to the booking system Help page! Here you will find information on how to use our booking system and answers to common questions.</p>

<h2>How to Use the booking system </h2>

<ol>

<li><strong>Select the booking :</strong> Choose the booking you want to convert from the dropdown menu labeled "From".</li>

<li><strong>Enter the Amount:</strong> Input the amount of money you wish to convert in the "Amount" field.</li>

<li><strong>Select the Target Currency:</strong> Choose the currency you want to convert to from the dropdown menu labeled "To".</li>

<li><strong>Click Convert:</strong> Press the "Convert" button to see the converted amount.</li>

</ol>

<h2>Frequently Asked Questions (FAQs)</h2>

<h3>What is a booking system?</h3>

<p>A currency converter is a tool that allows you to convert one currency into another using the current exchange rates.</p>

<h3>How accurate are the exchange rates?</h3>

<p>We strive to provide the most accurate and up-to-date exchange rates by using data from reliable financial sources. However, exchange rates may fluctuate and may not be the same as the rates offered by financial institutions at the exact moment of booking .</p>

<h3>Is there a fee for using the currency booking?</h3>

<p>No, our currency converter is free to use. However, please note that financial institutions may charge fees or offer different exchange rates when you perform actual transactions.</p>

<h3>Can I use the currency converter for any booking ?</h3>

<p>Our currency converter supports a wide range of global currencies. If you cannot find a specific currency, please contact our support team for assistance.</p>

**8.Result**

A login screen with a train and mountains in the background

Description automatically generated

A bus on a road

Description automatically generated

A screenshot of a bus

Description automatically generated

A screenshot of a login form

Description automatically generated

A screenshot of a phone

Description automatically generated

**A bus with a list of information

Description automatically generated with medium confidence**

**9. Conclusion and Future Enhancements**

The online bus booking system revolutionizes the bus travel experience by offering a seamless, efficient, and user-friendly platform for booking and managing bus journeys. With core functionalities such as user registration, real-time search, interactive seat selection, and secure payments, the system ensures that users can easily find and book bus tickets from any device. Additional features like loyalty programs, multi-language support, real-time bus tracking, and offline booking options enhance convenience and satisfaction, making the entire process more accessible and enjoyable for a diverse audience. By focusing on reliability, accuracy, and user experience, the online bus booking system provides a modern solution to traditional bus ticketing challenges.

### Looking ahead, several future enhancements can further improve the online bus booking system. Integrating AI-powered recommendations will enable the platform to provide personalized travel suggestions and promotions based on user preferences and booking history, enhancing user engagement. Developing dedicated mobile applications for iOS and Android will offer a more convenient and optimized experience for mobile users, expanding the platform's reach. Additionally, incorporating more payment options, including digital currencies and local methods, will cater to a broader user base and make the booking process even more flexible.

### References

1.Flask Official Documentation.

2.SQL Alchemy Official Documentation.

3.Python Official Documentation.

4.Stripe Official Documentation.

5.PayPal Developer Documentation.