

ASSIGNMENT

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SUBJECT CODE : MIT22043

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SOUTH EASTERN UNIVERSITY OF SRI LANKA

Executive Summary

The BigBuz.lk project is a travel ticket booking platform designed to simplify travel planning for users in Sri Lanka. This platform provides a seamless experience for booking both bus and train tickets. The main goal is to enable users to schedule their journeys efficiently by searching for transport options based on their destination, travel date, and time.

The client has outlined several key requirements for this platform. These include scheduling buses based on time and date, a search functionality to filter buses according to user needs, and a collaboration with the Railway Department to integrate train services. The platform also features sections to showcase upcoming events, highlight offers for travelers, and include details about the people behind the project.

Developed with user-friendly interfaces and efficient backend systems, the platform leverages modern technologies to ensure reliability and scalability. The development process focuses on meeting the client's needs while providing a smooth and secure user experience. Through rigorous testing and thoughtful design, the project aims to be a reliable solution for travelers.

BigBuz.lk is expected to revolutionize travel ticket booking in Sri Lanka, offering users a unified and accessible platform for their transportation needs.

Project Description

The BigBuz.lk platform serves as a centralized travel ticket booking system that caters to both bus and train passengers. The primary aim is to simplify the process of finding and reserving tickets while addressing key client requirements.

The platform offers advanced scheduling capabilities, allowing bus operators to set departure times and dates efficiently. Users can search for buses by selecting their destination and travel date, making it easy to find options that suit their schedules. Additionally, the website integrates train services through a collaboration with the Railway Department, providing users with a broader range of travel options.

Client Requirements for BigBuz.lk Project

The client has provided several key requirements for the BigBuz.lk project, a travel ticket booking platform offering both bus and train tickets.

- **Bus Scheduling:** The client requests the ability to schedule buses based on time and date. This will allow users to select buses according to their preferred travel dates and times.
- **Search Functionality:** The website should enable users to search for buses based on their destination and travel date. This feature will help users easily find buses that suit their needs.
- **Collaboration with the Railway Department:** The client has expressed interest in collaborating with the Railway Department. As part of this collaboration, they have requested a section on the website displaying upcoming events related to railway services. We have implemented this feature to meet their expectations.
- **Information about the Team and Contact Details:** The client has requested that the website include details about the people behind the platform, along with contact information for users who wish to get in touch.
- **New Offers for Travelers:** The client would also like to feature new offers available to travelers who book buses through the platform. This will keep users informed about discounts and special deals.

System Architecture and Design

The architecture of BigBuz.lk is designed to ensure scalability, reliability, and user-friendliness. The system follows a client-server model with a clear separation between the frontend and backend for enhanced performance and maintainability.

Frontend Design

The frontend is developed using modern web technologies like HTML, CSS, and JavaScript, with frameworks such as React for dynamic and responsive user interfaces. The design prioritizes simplicity and ease of use, ensuring that users can quickly navigate the platform to book tickets or explore features.

Backend System

The backend is built using PHP, which handles server-side processing, business logic, and data management. PHP scripts are used to interact with the MySQL database, manage user sessions, and process booking transactions.

Database Design

A MySQL database serves as the core storage system for all data. It includes:

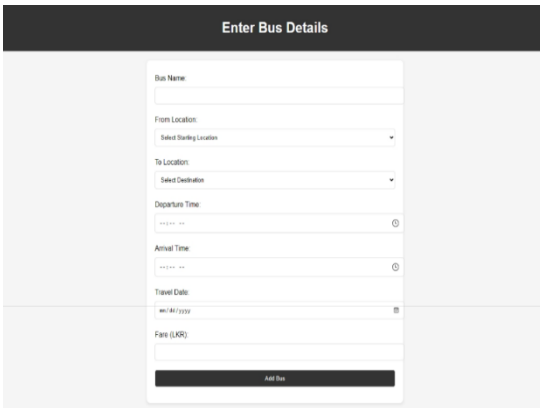
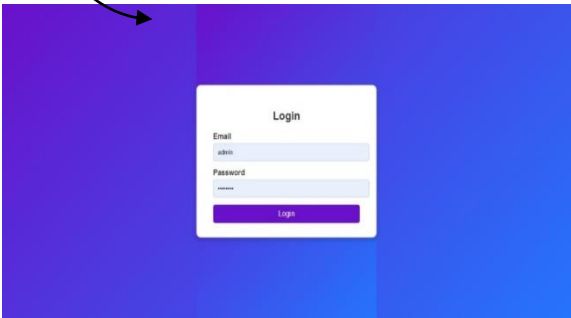
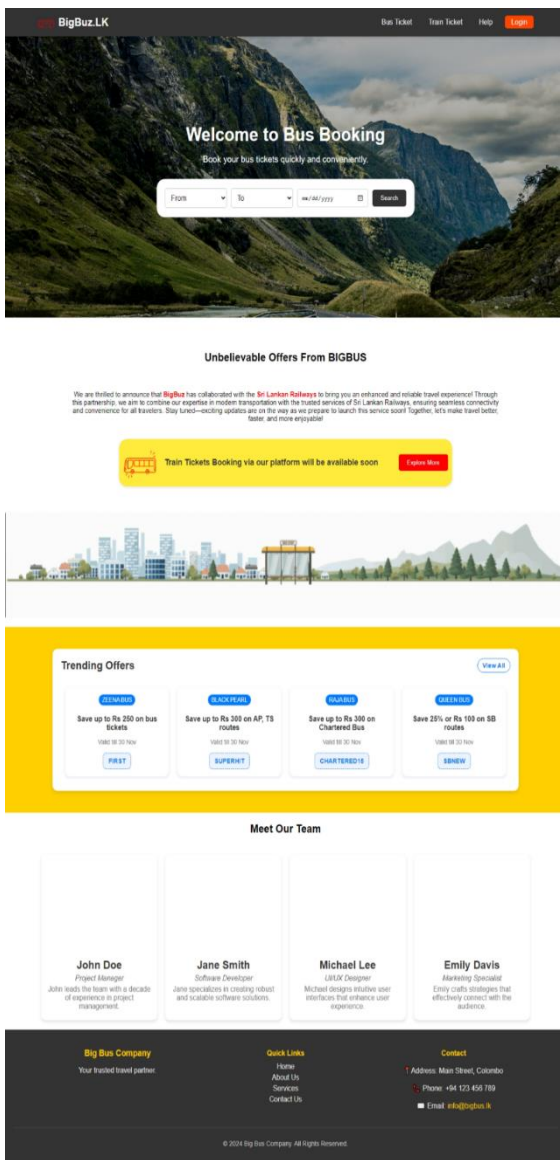
- User Data: For registration, login, and profile management.
- Bus and Train Schedules: To store details of routes, times, and availability.
- Bookings: To maintain a record of all transactions.
- Offers and Events: For showcasing special deals and upcoming events.

The design ensures smooth communication between the database, backend, and frontend to deliver a seamless experience for users.

Here is the database code we used to create the database.

```
CREATE TABLE Buses (  
  BusID INT AUTO_INCREMENT PRIMARY KEY, -- Unique ID for each bus  
  BusName VARCHAR(100) NOT NULL,      -- Name of the bus  
  FromLocation VARCHAR(100) NOT NULL,  -- Starting location  
  ToLocation VARCHAR(100) NOT NULL,    -- Destination  
  DepartureTime TIME NOT NULL,         -- Departure time  
  ArrivalTime TIME NOT NULL,           -- Arrival time  
  TravelDate DATE NOT NULL,            -- Travel date  
  Fare DECIMAL(10, 2) NOT NULL         -- Fare for the trip  
);
```

UI / UX Design



Development Process

The development of BigBuz.lk follows the Agile methodology, which allows for iterative improvements and close collaboration with the client throughout the project lifecycle. The process is divided into several phases to ensure all aspects of the platform are addressed effectively.

1. Requirement Gathering and Analysis:

In this phase, the development team worked closely with the client to understand their needs, such as scheduling buses, integrating train services, and creating user-friendly search functionality.

2. Planning and Design:

A detailed project plan was created, including timelines and milestones. Wireframes and prototypes of the website were developed to visualize the platform's structure and layout.

3. Development:

- The frontend was built using HTML, CSS, and Java script, ensuring a responsive and interactive user experience.
- The backend was developed with PHP, focusing on secure and efficient data handling.
- Database design ensured proper storage and retrieval of schedules, tickets, and user data.

4. Testing:

Rigorous testing was conducted, including unit testing, integration testing, and user acceptance testing. This ensured that all features function as expected and met client requirements.

5. Deployment and Maintenance:

After completing testing, the platform was deployed on a secure server. A maintenance plan was also created to ensure smooth operation post-launch.

The iterative nature of the Agile process ensured that client feedback was incorporated at every stage, resulting in a platform that aligns closely with their vision.

The Technology/Tools Used

For the development of BigBuz.Ik, a combination of modern tools and technologies was used to ensure a user-friendly, scalable, and efficient platform. Here's a brief explanation of why each technology was chosen:

- **Figma**

Figma was used during the design phase to create wireframes and prototypes. It allowed us to visualize the user interface and user experience effectively before development. With its collaborative features, it also enabled real-time feedback from stakeholders.

- **HTML**

HTML serves as the backbone of the website, providing the structure for all web pages. It was used to define the layout and organize the content of the platform.

- **CSS**

CSS was employed to style the platform, ensuring an attractive and responsive design. It allowed for customization of fonts, colors, and layouts, making the platform visually appealing across devices.

- **JavaScript**

JavaScript was implemented to add interactivity and dynamic functionality to the platform. Features such as form validation, search functionality, and user interaction enhancements were developed using JavaScript.

- **PHP**

PHP was used for backend development. It enabled secure server-side processing, managing the logic for user sessions, ticket booking, and data retrieval. PHP's flexibility and compatibility with MySQL made it an ideal choice for this project.

- **SQL**

SQL was utilized to manage and query the MySQL database. It was essential for storing and retrieving data such as user information, schedules, bookings, and offers. SQL ensured efficient and reliable data management for the platform.

By leveraging these tools and technologies, BigBuz.lk was developed to provide a robust, user-friendly, and functional ticket booking experience for its users.