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WEBAPPLICATION NAME: BUS MANAGEMENT SYSTEM (BMS)

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# **1.0 Introduction**

The **Bus Management System** is a transformative web-based application developed to address the critical challenges faced by Uganda's bus transportation industry. It provides a centralized platform for managing bus operations, ensuring efficient scheduling, real-time tracking, ticketing, and passenger communication. By leveraging advanced technology, this system seeks to modernize transportation services, improve passenger experiences, optimize operational workflows, and promote safety and reliability across Uganda's bus transportation network.

This documentation outlines the features, functionalities, architecture, implementation, and operational guidelines for the **Bus Management System**, providing comprehensive insights into its development and usage.

This project is a web application designed to provide users with a seamless and efficient way to manage their tasks and schedules. The application offers features such as user authentication, task creation, task tracking, and notifications. It aims to enhance productivity by allowing users to organize their tasks in a user-friendly interface.

## **Project User Requirements**

1. **User Authentication**: Users are able to register, log in, and log out securely.
2. **Task Management**: Users are able to create, edit, delete, and view tasks.
3. **Task Tracking**: Users are able to mark tasks as completed and track their progress.
4. **Notifications**: Users can receive notifications for upcoming deadlines and important updates.
5. **Responsive Design**: The application is accessible on various devices, including desktops, tablets, and smartphones.

## **Why Web Application is a Better Choice**

1. **Accessibility**: A web application can be accessed from any device with an internet connection, providing flexibility and convenience to users.
2. **Cross-Platform Compatibility**: Web applications run on web browsers, making them compatible with different operating systems such as Windows, macOS, and Linux.
3. **Ease of Updates**: Updates and new features can be deployed centrally on the server, ensuring all users have access to the latest version without needing to install updates manually.
4. **Cost-Effective**: Developing a single web application is often more cost-effective than creating separate native applications for different platforms.

## **Technical Description**

The project utilizes various programming languages and technologies to meet the user requirements:

1. **HTML/CSS**: Used for structuring and styling the web pages, ensuring a responsive and visually appealing design.
2. **JavaScript**: Provides interactivity and dynamic content updates on the client side. It handles user interactions, form validations, and asynchronous requests.
3. **PHP**: Server-side scripting language used for handling user authentication, database interactions, and business logic.
4. **MySQL**: Database management system used to store user data, tasks, and other relevant information securely.
5. **Bootstrap**: Front-end framework used to create a responsive and mobile-first design.

## Project Technical Requirements

### Software Requirements

1. **Web Server**: Apache or Nginx
2. **Database Server**: MySQL
3. **Programming Languages**: PHP, JavaScript
4. **Frameworks**: Bootstrap

### Hardware Requirements

1. **Server**: Minimum 2 CPU cores, 4GB RAM, 20GB storage
2. **Client**: Any device with a modern web browser (Chrome, Firefox, Safari, Edge)
3. **Network**: Reliable internet connection for accessing the web application



