



Poornima Transport System

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Abstract

The project aims to improve the bus transportation system provided by Poornima College by developing a digital system to update and maintain daily bus records. The system is designed to reduce the time-consuming and error-prone manual process of recording bus km, timing, driver and bus data. Additionally, the system can record attendance and ensure the accuracy and safety of records. The data is stored online on a central college server, and the admin can generate essential reports from the recorded data. The project seeks to streamline the bus transportation system and improve its efficiency while providing reliable and accurate data for reporting and analysis

Keywords

Bus transportation system, Admin, User, Digital System

Objective

The primary objective of this project is to improve the bus transportation system provided by Poornima College by developing a digital system to update and maintain daily bus records. The digital system will eliminate the manual process of recording bus km, timing, driver, and

bus data, which is time-consuming and error-prone. The project will focus on developing a system that will record student attendance and ensure the accuracy and safety of records.

The data collected through the digital system will be stored online on a central college server, which will enable the college administration to generate essential reports from the recorded data. The reports will include attendance reports, performance reports, and other reports that will help the college administration optimise its transportation system.

Introduction

Transportation is an essential aspect of every educational institution. Efficient and reliable transportation ensures students arrive at school safely and on time. However, managing a large transportation system manually can be a tedious and time-consuming process that is prone to errors. Poornima College, a renowned educational institution in India, provides transportation services to its students and staff. However, the college currently relies on manual record-keeping methods to track and manage their bus transportation system. The manual process is inefficient, error-prone, and time-consuming.

To address this challenge, this project aims to develop a digital system that will update and maintain daily bus records for Poornima College. The digital system will streamline the transportation system and make it more efficient and reliable. The project will focus on developing a system that will record and track the bus's km, timing, driver and bus data, and student attendance.

The proposed digital system will enable the college to automate and streamline the process of recording bus transportation data. By doing so, the college will be able to optimise the use of its resources, enhance the efficiency of its operations, and improve the quality of service it provides to its students and staff. The digital system will also enable the college administration to generate essential reports from the recorded data, including attendance reports and performance reports.

The data collected through the digital system will be stored online on a central college server, which will enable the college administration to generate essential reports from the recorded data. The reports will include attendance reports, performance reports, and other reports that will help the college administration optimise its transportation system.

Additionally, the project aims to achieve the following specific objectives:

To design a digital system that can record bus km, timing, driver, and bus data, and student attendance. To ensure that the digital system is user-friendly and accessible to all stakeholders. To ensure that the digital system is reliable, secure, and scalable. To ensure that the digital system complies with all relevant laws, regulations, and policies. To train college staff members to use the digital system effectively and efficiently.

The aim of this project is to develop a digital system that will streamline and improve the bus transportation system provided by Poornima College. The system will help to automate the daily bus record-keeping process and ensure that accurate data is available for reporting and analysis. The project's goal is to improve the efficiency and safety of the transportation system while reducing the time and effort required to manage it.

To create a centralised digital system for bus record-keeping: The current bus transportation system at Poornima College relies heavily on manual record-keeping. This manual system is time-consuming and prone to errors, which can lead to inaccurate data and delays in decision-making. The digital system aims to create a centralised platform for recording and managing daily bus records, including bus km, timing, driver, and bus data. This system will provide a more efficient and accurate way of keeping track of the transportation system's daily activities. To ensure the accuracy and safety of the transportation system: One of the critical objectives of the digital system is to ensure the accuracy and safety of the transportation system. The system will enable the college to monitor the daily activities of the bus drivers and ensure they are following the correct routes, timings, and safety measures. The system will also allow the college to keep track of the vehicles' maintenance and repairs, ensuring that the buses are safe and roadworthy. To improve the reporting and analysis of bus transportation data: The digital system will provide accurate and reliable data for reporting and analysis, enabling the college to make informed decisions about the transportation system. The system will provide real-time data on bus performance, fuel consumption, driver behaviour, and maintenance schedules, enabling the college to optimise the transportation system's efficiency and

reduce costs. The data generated by the system will be used to create reports and analytics that will help the college to identify areas of improvement and make data-driven decisions with different hardware configurations.

Software Requirements

Developing a web application involves a wide range of technologies, tools, and frameworks. Each of these technologies plays a vital role in ensuring that the web application is scalable, responsive, and secure. In this article, we will discuss the various software requirements that are necessary for making a web application.

Front-end Technologies - The front-end of a web application is the part of the application that interacts with the user. It includes the user interface and the user experience. Some of the essential front-end technologies include: **HTML**: HTML or Hypertext Markup Language is the foundation of a web page. It provides the structure and content of the web page. **CSS**: CSS or Cascading Style Sheets is used to define the presentation of a web page. It is used to add colours, fonts, and other design elements to the web page.

Frameworks: There are various front-end frameworks such as React, Angular, and Vue.js that make it easier to develop complex front-end applications.

Back-end Technologies: The back-end of a web application is the part of the application that runs on the server. It includes the database, server-side programming, and APIs. Some of the essential back-end technologies include **Programming Languages**: There are several programming languages that can be used to build the back-end of a web application. Some of the popular programming languages include Java, Python, Ruby, and Node.js. **Databases**: A database is a crucial component of a web application. It is used to store and retrieve data. Some of the popular databases include PHP myAdmin. **APIs**: APIs or Application Programming Interfaces allow

different applications to communicate with each other. They are used to retrieve data from the server and update the server with new data.

Hardware Requirements

Developing a web application not only requires software but also hardware. In this article, we will discuss the various hardware requirements that are necessary for making a web application. **Server** - A server is a computer that provides services to other computers. In the case of a web application, the server provides web services to the clients. The server needs to have a high-speed internet connection, a powerful processor, and enough RAM to handle multiple requests from clients simultaneously. The server must also have enough storage capacity to store data and files. Storage is an essential component of a web application.

The storage capacity required depends on the size of the application and the amount of data that the application will store. Networking equipment such as routers, switches, and firewalls are essential components of a web application.

Literature Survey

The transportation industry is a critical component of modern society, and bus transportation is an important part of it. In recent years, there has been a growing interest in using technology to improve the efficiency and safety of bus transportation. In this literature review, we will explore the background of the project and the research that has been done in the area of web applications for bus transportation.

Background of the Project: The project aims to improve the bus transportation system provided by Poornima College by developing a digital system to update and maintain daily bus records. The system is designed to reduce the time-consuming and error-prone manual process of recording bus km, timing, driver and bus data. Additionally, the system can record attendance and ensure the accuracy and

safety of records. The data is stored online on a central college server, and the admin can generate essential reports from the recorded data. The project seeks to streamline the bus transportation system and improve its efficiency while providing reliable and accurate data for reporting and analysis. Researches Done in the Area of Web Applications for Bus Transportation:

Bus Fleet Management System: A bus fleet management system is a web-based application that helps to manage a fleet of buses. It provides real-time information about the location of each bus, the status of each bus, and the route that each bus is taking. The system also provides data on the performance of each bus, including fuel consumption, speed, and maintenance schedules. The bus fleet management system can also be used to track the attendance of drivers and to generate reports on the performance of the entire fleet.

Real-time Passenger Information System: A real-time passenger information system is a web-based application that provides real-time information to passengers about the location of their bus, the expected arrival time, and any delays or disruptions. This system uses GPS technology to track the location of each bus and provides updates to passengers in real-time. The real-time passenger information system can be used to improve the overall experience of bus travel, reduce wait times.

Automated Bus Routing System: An automated bus routing system is a web-based application that automatically generates the most efficient route for each bus in a fleet. The system takes into account factors such as traffic, road conditions, and passenger demand to optimise the route for each bus. The automated bus routing system can help to reduce travel times, improve the efficiency of the fleet, and reduce fuel consumption.

Smart Ticketing System: A smart ticketing system is a web-based application that allows passengers to purchase and use tickets online. The system uses RFID technology to track the location of each passenger and to automatically deduct the fare from their account. The smart ticketing system can help to reduce wait times, improve the efficiency of the fleet, and provide a more convenient and seamless experience for passengers.

In conclusion, the use of web applications in bus transportation has become increasingly popular in recent years. These applications can help to improve the efficiency and safety of bus transportation, provide real-time information to passengers, and automate many of the processes involved in managing a fleet of buses. The project aims to improve the bus transportation system provided by Poornima College by developing a digital system to update and maintain daily bus records. The literature review has shown that there are several web applications that can be used to improve bus transportation, including bus fleet management systems, real-time passenger information systems, automated bus routing systems, and smart ticketing systems. By using the right web application, the bus transportation system can be streamlined, and efficiency and safety can be improved.

Benefits of Poornima Bus System

The proposed digital system for updating and maintaining daily bus records at Poornima College will bring numerous benefits to the college's transportation system. Some of these benefits include:

1. **Improved Efficiency:** The digital system will eliminate the time-consuming and error-prone manual process of recording bus km, timing, driver, and bus data. The system will automate and streamline the process of recording and maintaining bus records, which will save time and reduce errors. This will enable the college to

optimise its resources, enhance the efficiency of its operations, and improve the quality of service it provides to its students and staff.

2. **Accurate Attendance Records:** The digital system will also record student attendance on the bus. This will enable the college to maintain accurate attendance records, which can be used for reporting and analysis. The attendance records will also help the college identify students who are regularly absent from the bus and take appropriate action.

3. **Data-Driven Decision Making:** The digital system will store all the data related to the college's bus transportation system online on a central server. The college administration can generate essential reports from the recorded data, including attendance reports and performance reports. These reports will enable the college administration to make data-driven decisions and optimise the transportation system's performance.

4. **Improved Safety:** The digital system will also improve the safety of the college's transportation system. The system will record driver data, bus data, and timing data, which will enable the college to ensure that its buses are in good condition, drivers are well-trained, and buses are on time. This will improve the safety of the college's transportation system and reduce the risk of accidents.

5. **Improved Communication:** The digital system will enable better communication between the college administration, bus drivers, and students. The system will send notifications to students and drivers about bus schedules, changes in schedules, and other important information. This will enable the college to communicate important information more effectively and efficiently.

6. **Environmental Benefits:** The digital system will also bring environmental benefits to the college. The system will enable the college to optimise its bus routes, which will reduce the number of

buses on the road and reduce the college's carbon footprint.

Conclusion

In conclusion, the development of a digital system for updating and maintaining daily bus records at Poornima College will bring significant improvements to the college's transportation system. The system will replace the manual process of recording bus data with an automated process that will save time and reduce errors, resulting in improved efficiency and optimised use of resources.

The digital system will also record student attendance and provide accurate and reliable data for reporting and analysis, enabling data-driven decision-making by the college administration. Additionally, the system will improve the safety of the transportation system by recording driver data, bus data, and timing data, enabling the college to ensure that its buses are in good condition, drivers are well-trained, and buses are on time. The system will also enable better communication between the college administration, bus drivers, and students, resulting in more effective and efficient communication of important information. Finally, the system will contribute to environmental sustainability by optimising bus routes, reducing the number of buses on the road, and reducing the college's carbon footprint.

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