



PIET Maintenance Portal

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Abstract

The PIET Maintenance Portal is a web-based application developed for a college maintenance department to automate and streamline their work processes. This paper presents the design and implementation of the PIET Maintenance Portal, including the product backlog and sprint backlogs for four sprints. The portal allows users to submit maintenance requests online, which are then assigned to maintenance coordinators for scheduling and completion. The portal also includes features for tracking work progress, managing faculty members and departments, and sending notifications to users via email and text messages.

The design and implementation of the PIET Maintenance Portal were carried out using a combination of Agile and Waterfall methodologies, and the portal was developed using technologies such as HTML, CSS, JavaScript, PHP, and MySQL. The paper concludes with a discussion of the benefits of the PIET Maintenance Portal for the college maintenance department, including increased efficiency, improved communication, and enhanced customer satisfaction.

Keywords

HTML, CSS, JavaScript, Maintenance Portal.

Objective

The aim of the PIET Maintenance Portal is to provide a web-based solution to manage and track maintenance issues in the institute. The objective is to simplify the process of reporting maintenance issues by allowing faculty members to report problems quickly and easily. This portal will help the maintenance department to prioritize and address the reported problems efficiently, reducing the response time and ensuring timely resolution of issues.

Introduction

The maintenance of buildings and infrastructure is an essential part of ensuring their longevity and safety. However, managing maintenance requests and coordinating with maintenance personnel can be a challenging task, especially in large organizations such as educational institutions. This paper presents the development and implementation of the PIET Maintenance Portal, a web-based system designed to streamline maintenance request management and facilitate communication between stakeholders.

The PIET Maintenance Portal was developed for use at Panipat Institute of Engineering and Technology (PIET), an educational institution located in Haryana, India. The portal allows faculty and staff to submit maintenance requests through an easy-to-use web interface, providing detailed information about the nature of the problem and the location of the issue. Maintenance personnel can access the portal to view and prioritize

requests, assign tasks to appropriate team members, and update the status of each task.

The portal also includes features to enhance communication between stakeholders. Users receive automated updates via email and SMS at each stage of the maintenance process, from request submission to task completion. Additionally, a dashboard is provided for administrators to monitor the status of all maintenance requests and generate reports to analyze maintenance trends and performance.

The development of the PIET Maintenance Portal was carried out using a collaborative, iterative approach involving key stakeholders, including faculty, staff, and maintenance personnel. The system was designed to be user-friendly, with a simple and intuitive interface that requires minimal training for users. The portal was implemented using modern web technologies and is hosted on a secure server, ensuring data confidentiality and accessibility from any location with an internet connection.

Software Requirements

The PIET Maintenance Portal will be a web-based application built using the following software requirements:

- **Programming Languages:** The backend of the portal will be built using PHP, while the frontend will be built using HTML, CSS, and JavaScript.
- **Web Development Framework:** The portal will be built using the Laravel framework, a free, open-source PHP web application framework.
- **Database Management System:** The portal will use MySQL as the database management system.
- **Web Server:** The portal will be hosted on a web server, such as Apache or Nginx.
- **Development Tools:** The portal will be developed using a code editor, such as Visual Studio Code, and version control tools, such as Git.

Hardware Requirements

The PIET Maintenance Portal will be a web-based application that can be accessed through a web browser. The following are the hardware requirements for the portal:

- **Server:** The portal will be hosted on a server with sufficient storage space and processing power to handle the incoming requests and store the data.
- **Network Infrastructure:** The server should have a reliable network connection with sufficient bandwidth to handle the incoming traffic.
- **Client Devices:** The portal can be accessed through any device with a web browser, such as a laptop, desktop computer, tablet, or mobilephone.

- **Printer:** The maintenance department may require a printer to generate reports and documents related to the maintenance issues

Literature Survey

A. “Web Application Architecture” [1]

Web application architecture refers to the framework that enables interactions between the various components of a web application. A web application is a client-server application that is designed to run on the internet, using middleware systems, user interfaces, and databases to facilitate its functioning.

Web applications typically comprise server-side scripts that are responsible for data storage and processing, and client-side scripts that are responsible for presenting the data to users. The server-side scripts are run on the server and are responsible for processing requests from clients, while the client-side scripts run on the user's device and are responsible for presenting the data in a user-friendly manner.

Overall, web application architecture is an essential aspect of web development, as it provides a structured framework for designing and building complex web applications that can be used by millions of users around the world.

“A Beginners Guide to Web Application Development” [2]

Web application development can be a complex process, but there are various options available to developers when it comes to choosing a development platform. One of the first decisions that developers need to make is whether to code the application from scratch, use a framework, or use a web development platform.

Coding the application from scratch provides the greatest flexibility but is also the most time-consuming and challenging option. This approach allows developers to create a custom application tailored to their specific needs, but requires expertise in programming languages and technologies.

Overall, the key to successful web application development is choosing the right development platform for the job at hand. By considering the pros and cons of each option and evaluating the specific needs of the project, developers can select the most appropriate approach and ensure the success of their web application.

B. “Building Your First Web Application” [3]

This tutorial provides a basic introduction to web application development using PHP. The tutorial guides the reader through the process of creating a simple web application that takes user input and determines whether it is a country or not.

The tutorial assumes no prior knowledge of PHP or any other programming language, but some familiarity with HTML is helpful. The reader is guided through the process of writing the code for the web application step by step.

Overall, this tutorial provides a simple but effective introduction to web application development using PHP. While it is a basic example, it demonstrates the core principles of web application development and provides a solid foundation for more complex projects in the future.

Benefits of SocketOS

The PIET Maintenance Portal provides several benefits to both the maintenance team and the faculty members. First and foremost, it simplifies the process of submitting and tracking maintenance requests. Faculty members

can easily submit requests and track the status of their requests in real-time, eliminating the need for manual follow-up.

The portal also helps in optimizing the maintenance process by streamlining the workflow. Maintenance coordinators can efficiently assign tasks to the team members, track work progress, and ensure timely completion of maintenance requests. This ensures that maintenance tasks are completed efficiently and effectively, leading to increased productivity and improved operations. Another significant benefit of the PIET Maintenance Portal is the ability to generate detailed reports and analytics. These reports provide valuable insights into the maintenance process, including the number and types of requests, time required for completion, and more. Such insights can help in identifying potential bottlenecks and inefficiencies in the maintenance process, enabling the maintenance team to take proactive measures to address them.

Moreover, the portal provides a central repository for storing all maintenance-related information, including past requests, work progress, and completion status. This allows maintenance coordinators and team members to access this information at any time, improving collaboration, and facilitating effective communication.

Conclusion

In conclusion, the PIET Maintenance Portal is an efficient and effective solution for the maintenance management system of the Panipat Institute of Engineering and Technology. The portal has been designed to streamline the maintenance request process, reduce response time, and enhance communication between the maintenance staff and the faculty members. The use of this portal has resulted in improved maintenance service delivery, reduced downtime, and increased operational efficiency. It has also provided a centralized platform for tracking, monitoring, and reporting maintenance requests. The successful implementation of the PIET Maintenance Portal serves as an excellent example of how technology can be leveraged to improve the overall functioning of an educational institution.

References

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