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A Streamlined, Integrated Academic Management Portal for Faculty Access

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Abstract

In today's rapidly evolving educational scene, increasing productivity and improving educational outcomes depend on the efficient management of academic resources and administrative responsibilities. This project proposes a streamlined and integrated academic management portal to provide faculty members with efficient access to required tools and resources. It is now possible for faculty to utilize a simplified integrated academic management portal. The site for managing attendance and marks is run by faculty members, and its target market is educational institutions. In contrast to fully automated systems, this allows faculty members to manually record attendance and enter grades while still offering the convenience of digital record-keeping. This study offers an integrated, simpler academic management system that is accessible solely to faculty. Through a plethora of features created with faculty members' needs in mind, the portal aims to enhance the comfort and efficiency of academic administration. Centralized access to course materials, student records, grading schemes, and communication tools are crucial components of a single platform. Faculty members are capable of handling attendance-related issues, efficiently managing administrative tasks, compiling reports, and creating defaulter lists based on attendance or grades for criteria. The interface of this portal is user-friendly. by combining manual input with computerized functionality. This portal shows how technology-driven solutions can improve institutional efficiency, accountability, and transparency in school administration reform. This website helps the faculty members' academic development.

Keywords: Faculty access, Academic management, digital record-keeping, defaulter list, Criteria, Attendance

INTRODUCTION

At this moment, a lot of educational establishments universities, colleges, and schools rely on standard methods to track students' attendance during lectures. This frequently entails multi-step, manual paper-based procedures such as writing down names, getting signatures, storing data, and manually computing attendance percentages over different time frames like weeks, months, or semesters as well as year. These processes require duplicate documentation, take time, and require a significant number of humans to strictly enforce attendance regulations. Every class in a semester needs to use this manual method again, which takes a lot of time in situations when there are many students.

This conventional method of tracking attendance is widely used however it has a lot of disadvantages. For instance, it might be difficult and distracting to distribute daily attendance forms to a lot of students in the classroom. Roll calls are viewed as needless time wasters, and there is a chance that students will deliberately write false attendance records on paper forms. All pertinent attendance information is lost if these documents are lost. In addition, the fact that paper records are used makes them vulnerable to

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manipulation. Teachers must put in a lot of physical humans and time- consuming calculations to analyze attendance, which takes a lot of effort [7-8].

The administration of academic resources and administrative activities is crucial in promoting productivity and improving educational outcomes in the ever-changing world of higher education. Simplifying and streamlining the academic administration process with a faculty-only portal is a big step forward for institutional support of the academic purpose and efficiency optimization.

To access this portal, users must first register an account using the necessary credentials. Upon successful registration, users can log in using their credentials. Upon logging in, users are directed to the dashboard, which displays information such as the number of present and absent students for the current day out of the total number of students enrolled.

Users have the option to retrieve various reports, including attendance reports, which provide details on student attendance. Furthermore, faculty members may keep informed and connected through the portal's mobile-friendly interface, whether they are on campus or off, which encourages flexibility and adaptability in the demanding academic climate of today. The portal frees up faculty members' time for teaching and intellectual endeavors by centralizing administrative duties like grading, attendance monitoring, and curriculum management. This improves the educational experience for students [9-10].

This site is intended to make complicated administrative activities that frequently burden faculty members easier to handle, with the goal of increasing productivity and fostering collaboration. Through the integration of many capabilities, including research support, student data access, course management, and communication tools, the portal provides educators with a unified platform that is specifically designed to fulfill their needs.

We explore the key components and advantages of this kind of portal in this introduction, highlighting its function in creating a climate that is favorable to academic achievement and creativity. The adoption of digital transformation in educational institutions is ongoing, and one important step in improving efficiency, transparency, and faculty satisfaction is the establishment of an all-inclusive academic management portal.

Additionally, users can access comprehensive reports containing information on all students, as well as reports specifically identifying defaulters, high achievers, slow learners, and failed students. These reports are generated instantly, providing quick access to the required data. Furthermore, users can choose to download the reports in either PDF or Excel format for convenient storage and analysis.

LITERATURE REVIEW

To measure students' performance in both academic studies and classroom activities, Md. Milon Islam et al. [1] tackle the crucial topic of student attendance tracking. The fact that university laws require minimum attendance percentages (e.g., 60%, 70%, or 80%) for students to be able to sit for exams makes this an especially serious matter. Course instructors may monitor and manage student attendance records with ease thanks to the designed system, which is online accessible at any time and from any location.

Using radio frequency identification (RFID) technology combined with an internet hotspot, Barnabas Ndlovu Gatsheni et al. [2] have creatively automated the class attendance record. As students enter the classroom, this system automatically records their attendance by electronically gathering data from their ID cards. By providing precise and timely attendance records, this technology improves data collecting efficiency and does away with the need for manual attendance taking, which could lead to an improvement in the quality of instruction.

In this study, Benfano Soewito et al. [5] describe an innovative attendance system that combines smartphone features, such as a payment system, with GPS and fingerprint technologies. This novel method seeks to address current issues related to attendance monitoring. According to the research, fingerprint scanners in smartphones are expected to become widely used in the upcoming years, which will increase the viability and efficiency of the suggested system.

Satyanarayana Ashwin and Candido Cabo [6]. In this Innovative Practice Full Paper, examine the effects of Learning Communities (LCs) on student performance results, attendance, and retention in first-year computing courses. Students enrolled in two or more courses in several disciplines over a semester who are connected by a common academic theme are called Learning Communities (LCs).

By integrating robust attendance tracking functionalities into the larger educational administration framework, Zengguang Zhang et al.'s [3] system aims to fill the gap left by existing instructional organization administration frameworks, which typically prioritize record management, curriculum design, course administration, and related aspects while neglecting comprehensive attendance management. This approach to improving attendance tracking systems is novel, as Zhang et al.'s study involved the development of an attendance administration system using VisualStudio.NET and Oracle.

A brand-new fingerprint gadget was unveiled by Mohamed Basheer K P et al. to be used with their special fingerprint attendance system [4]. Students touch the sensor on the device with their finger to verify their presence. However, this strategy has practical hurdles due of the uneven reliability of fingerprint scanners.

By placing their finger on the device's sensor, the students confirm their essence. However, because fingerprint scanners don't always identify right away, this approach isn't really feasible.[8] developed an approach for automating student attendance. Every student in this system has an ID with a barcode that is re ad by a smartphone app. This system allows a student to carry another student's ID, fooling the attendance system.

FEATURES OF THE APPLICATION

Optimized Interface

Faculty members can use and complete administrative duties with ease. the portal's user- friendly interface.

Digital Record-Keeping

The portal allows digital record-keeping of grades and attendance, eliminating paperwork and increasing accuracy compared to old manual methods.

Manual Input

Faculty members can choose to manually enter grades and record attendance in addition to using automated features that accommodate a range of needs and preferences.

Administrative Management

With the use of the portal, faculty members can efficiently handle a variety of administrative tasks, such as generating defaulter lists, reporting, and attending to attendance-related issues.

Real-Time Reporting

Access to the data required for analysis and decision-making is facilitated by the instantaneous generation of attendance reports and other thorough reports.

Custom Reports

Users can create reports that are particular to their needs by basing them on criteria like high achievers, defaulters, slow learners, and failed students.

Download Options

Reports are available for download in PDF and Excel formats, making it easy to store, share, and do additional analysis as needed.

Enhanced Transparency and Efficiency

The incorporation of technology -driven solutions improves accountability, transparency, and institutional efficiency in the procedures related to school administration.

TECHNICAL IMPLEMENTATION

MySQL Database and SQLite Database

The Student Attendance System, which is web based, has a strong connection to the MySQL database. Four main tables have been created in our database to hold the captured data. All student's attendance data, including dates and other details, is kept in a table known as the attendance table. The information gathered by the application is stored in the database. Another row in the database, the teacher table, is used to store the instructor's nuanced details, such as name, ID, address, email, phone number, and so on, that are part of their profile. The course info table contains course data, such as the course code, the scheduled classroom environment, and the start and end times of the class. All the student's specific information is contained in the student data table. The Attendance database contains the investigated student's attendance information in the interim. For information collecting purposes, a set of predefined SQL queries is integrated into regular capacities, enabling straightforward information additions, refreshments, and recoveries for both web servers and phones.

Web Application

The Web application is implemented in eclipse using Java language as well as Java Script. The system used the internal SQL Yog database for web server. The server holds MySQL database.

Graphical User Interface (GUI)

A course instructor can access the application user interface by logging in to the framework using a login page and entering the required information. This type of validation is essential to prevent unauthorized access. The technology is fully accessible to the course instructor. The framework's data can be modified and moderated by the course instructor.

SYSTEM TESTING AND RESULTS

The purpose of the system testing (Figure 1) for the student administration site was to assess its features, such as the ability to track attendance, create PDFs, and create default lists. Different test cases were created and run using a combination of black-box and white-box testing approaches to evaluate the portal's performance according to several criteria. The attendance tracking function tracked student attendance accurately, with very few errors found, according to the results. Furthermore, the functionality for creating PDFs was able to produce attendance reports and defaulter lists according to the given criteria, proving its dependability and effectiveness.

The examination of the test outcomes revealed various advantages of the student management system, including its strong functionality and precise data generation. Nevertheless, a few areas that needed work were also found, such as little interface bugs and chances for optimization to produce PDFs more quickly. All things considered, the results of the system testing offer insightful information about the functionality and performance of the portal, setting the stage for next improvements and optimizations that will further improve user experience and administrative effectiveness.

There are two options for faculty to record student attendance: present or absent. However, faculty can only selectone of the options. They can create a PDF of this attendance list for any day and any subject at any time based on this data. We have developed a service that allows faculty to request a PDF of the student defaulter list based on attendance criteria, and with only one click, the faculty can have the list.

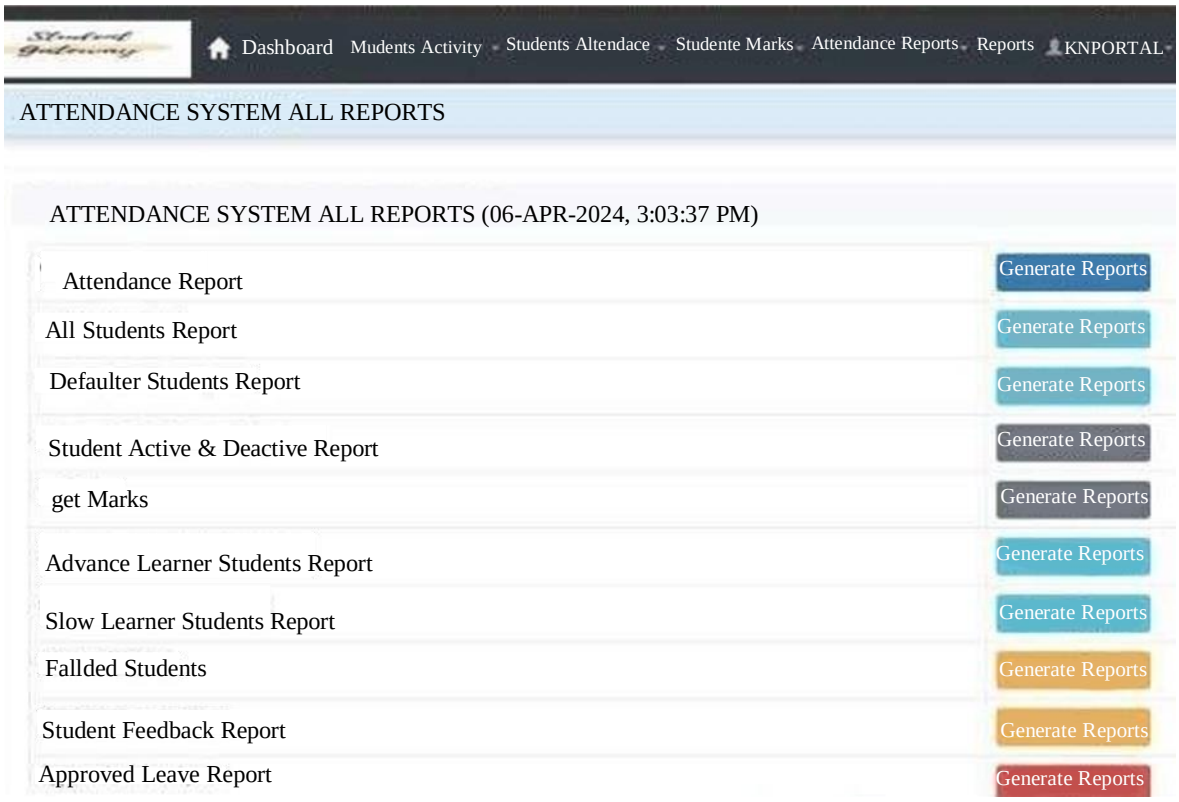

Figure 1. Generate PDFs from particular report.

CONCLUSIONS

To sum up, the creation and testing of the web-based student management portal constitutes a major advancement in the simplification of administrative procedures in educational establishments. The adept integration of functionalities like attendance monitoring, PDF production, and the ability to separate student data for advanced learners and defaulters shows the portal's potential to improve accuracy and efficiency in managing student information. But the testing procedure also identified areas that needed work, emphasizing how crucial it is to keep improving to satisfy consumers' changing needs. Going forward, it is imperative to tackle the issues that have been discovered and integrate feedback from users to enhance the functioning and usability of the portal.

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