ONLINE STUDENT ATTENDANCE MANAGEMENT SYSTEM

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ABSTRACT

Manual attendance control has been used in most educational institutions for many years. So we proposed a "web-based attendance Management System" to address the issues with manual attendance. The Attendance Management System is built on a web server that may run on any machine. PHP is used as a server-side language in this application; MySQL and PHP are used as back-end design tools, while HTML, CSS, and JavaScript are used as front-end tools. A database on a distant server is communicated with the system. It eliminates the human paper-based effort and estimates the attendance percentage of the students automatically. The system provides the end-users with an interactive design and a user-friendly interface which contains automated processing of attendance management.

Keywords: PHP, Attendance, XAMPP, SQL, Student Attendance System

I. INTRODUCTION

Attendance is taken manually in most educational institutions. It is not only time consuming, but also insecure, unreliable, and susceptible to loss. Some universities utilize punch cards for attendance, which makes it difficult for teachers to keep track of a large number of students because a student can use a punch card to help other students or a buddy punch their card, even if the other student is absent or late in class, making it unreliable. To overcome these difficulties we have developed a superior web-based system that is totally responsive and can be used on mobile devices, tablets, and various computer systems. In this system, records are kept secure. The attendance information of individual students or all students in a certain class may be accessed quickly and conveniently, and the report is generated automatically.

The key features of the system we created are that it is web-based and fully responsive and flexible. It can be accessed from any computer, no matter where it is. Its goal is to provide a web-based attendance programmed that will allow the department to track student information such as subjects, faculties, and related fields. The daily attendance of students is taken automatically by selecting the student's name and programmed. Initially, there are icons of the students displayed in green color representing present for all students if the student was absent then we can click on the particular icon of the student to mark absent, and the information is saved in the database by clicking the save button. Here we can make use of the all present and All Absent buttons the attendance report will be generated automatically without the need for human intervention, and it will be accurate and error-free.

II. LITERATURE SURVEY

Punch cards, also known as Hollerith cards, were utilized for data storage in the early years, and companies were able to save and access data by inserting the card into a computer system [1]. It is still one of the most often used attendance systems today. Employees use this card to clock in and out; all they have to do is wave the punch card near a reader, and the reader will confirm the employee's presence [2]. Many desktop attendance programmers have been developed. Some instances are as follows: 1. a desktop programmed was created to track student attendance on a daily basis. Then the information for a specific class is then kept by the operators that the teacher will supply. The software was created by Saurabh Kumar Jain, Uma Joshi, and Bhumpesh Kumar Sharma. They employed the following technologies in their application: Language: VB.NET and Backend: MS-Access [3]. 2. Jainetal has created a desktop program that when a faculty opens the application, program will display a list of all students registered for a particular course. The attendance is taken by clicking the icon of the student and then pressing the submit button to

mark their presence [4]. 3.Muhammad, Ahmad Shakur Idris, Abu-Bakr Sadiq Hassan, Muhammad Ibrahim Hakimi, and Muhammad Zakaria Abatch developed a desktop programmed. Visual Basic.Net [5] is the programming language utilised. There has been numerous research [6, 7, 8, 9, 10, 11, 12] on the topic of sentiment analysis and opinion mining in relation to the attendance system.

III.PROPOSED WORK

The proposed system has three roles Student, faculty and Admin. The whole system is used and managed by these three roles. These three roles are in charge of using and managing the entire system. Persons with access to the database will be able to retrieve the information stored there. The Admin role has complete access to the system; the Faculty role has partial access to the system and can add student data, but they are limited to certain data. The Student has limited access to the majority of the data and can only read his profile. Every data is subjected to three operations: r-Read, w-Write, and x-Execute.
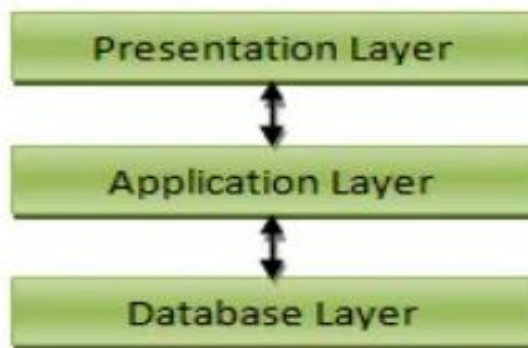
Admin have 7 modules they are Academic year management (rwx), Subject Management (rwx), Faculty Management (rwx), Student management (rwx), Transfer Management (rwx), Attendance (rwx) and Reports (r_x). The faculty has 2 modules: Attendance (rw_) and reports (r__). The Student has 2 modules: View Profile (r__) and Report (r__). The data can never be changed or altered by students; the changes can only be made by the authorised faculty or admin.
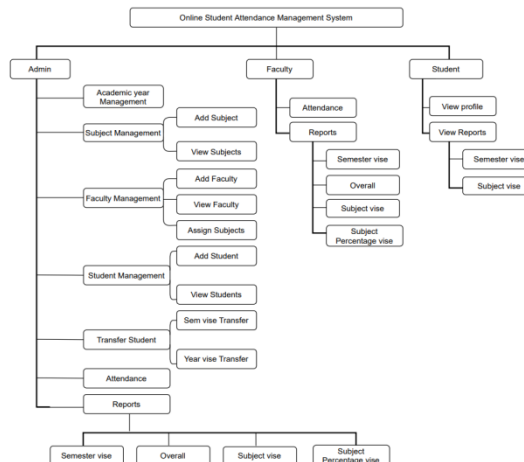
These 3 roles must get authenticated by their username and password before accessing the data. The authentication system is encrypted so it cannot be understood by anyone who is involved in MIMA (Man In The Middle Attack) After completion of authentication if the authentication is valid the user gets logged in or if the authentication is not valid the user gets redirected to a homepage with a prompt "invalid username/password". The user had a session opened with the server; now the user can access his modules. After completion of the tasks the user can log out by clicking the logout button then the session will be closed.

The student screen will provide information about student's data such as Student Name, DOB, Gender, Email, Phone, Semester in the form of rows and columns. The faculty information is taken such as their first and last names, email, and phone number. The name and programmed are automatically pulled from the database on the Attendance screen. Initially, there are icons of the students displayed in green color representing present for all students. If the student was absent then we can click on the particular icon of the student to mark absent. Here we can make use of the all present and All Absent buttons. Information is saved by selecting the save button.

Every student's data is stored in a relational database, which was created using the Mysql server. The records are retrieved and processed using logical gates in accordance with the query. The database has been normalized in accordance with the specifications. A confirmation will be made at the end of each successful transaction. If an error occurs, the rollback command is executed, and the data is restored to its previously committed state. The database is built to keep all of the ACID properties. The database is not publicly accessible; it is kept in a private subnet where no one can access it except the application server.
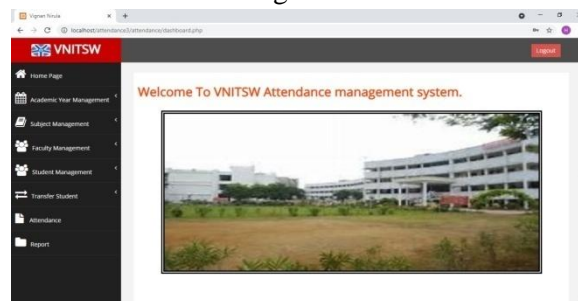
IV.RESULTS AND DISCUSSIONS

The proposed system, which is also secure and maintains concurrency, can generate reports for every individual student. The screenshots of our system are:
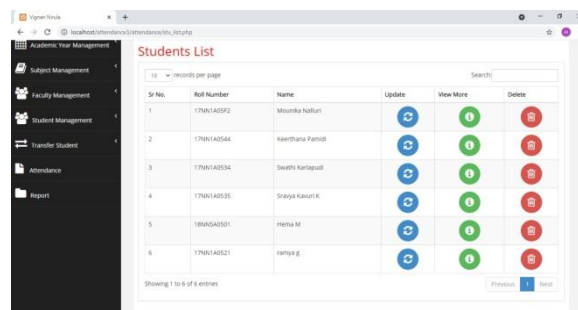
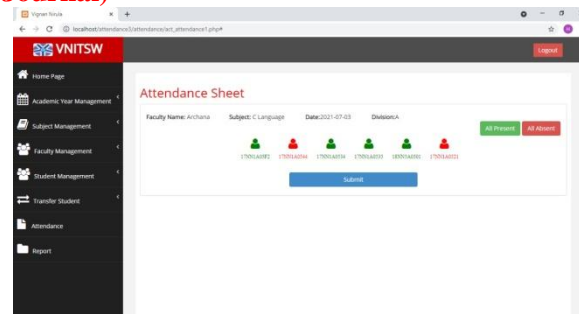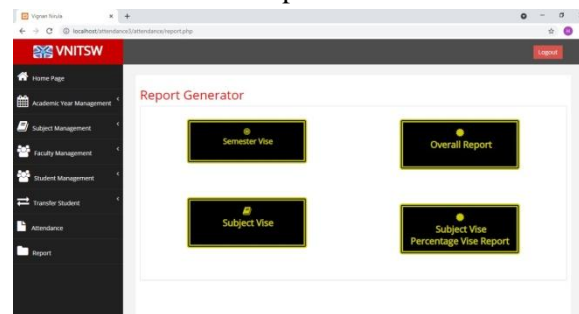For Admin/Staff Login:
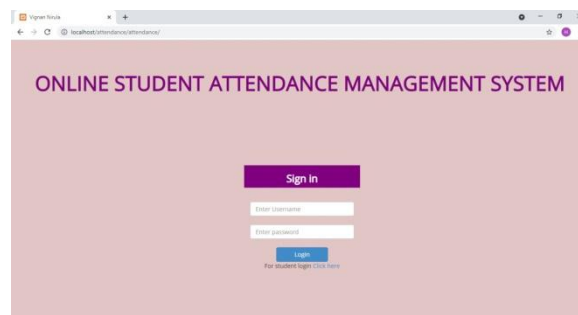
Home Page of Admin:

Here we can see the list of the students added to the database.

Marking Attendance:

Reports:

In the same way, faculty can also log in and mark the attendance of students and generate reports. The student can log in to generate reports such as subject wise and semester wise.

The system operates in different types of environments and maintains a consistent database. The data is highly secure and can only be accessed by people who have been authenticated.

V. CONCLUSION

In this article, the web-based attendance management system is developed using PHP server-side scripting language and CSS, HTML, JavaScript for designing which fully meet the system's goals. This system overcomes many attendance limitations, saves a significant amount of time, and reduces errors that may occur during attendance calculation. The system we created is fully responsive and can be used on mobile devices, tablets, and various operating systems. Other advantages include automated and web-based access for ease of use. It is a dynamic and adaptable system that eliminates paperwork and the possibility of errors when taking attendance on paper. It is very user-friendly and convenient. Current and previous records can be accessed in a prompt and immediate manner.

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