A Review on Web-Based Attendance Management System

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Abstract: There have been many proposals to optimize the students’ management system in higher education. Managing student attendance during lecture periods have become a difficult challenge. Manual calculation of attendance produces errors and wastes a lot of time. This proposed system manages the student’s attendance in a web portal and the records of the attendance will be stored in a database. The attendance of the students will be further forwarded to their HOD (Head OF Department), class teacher and their parents/guardians. This system will use MySQL for database. The template of the website will be built using HTML and CSS (Cascading StyleSheet) code. JavaScript will be added to improve the use of the system. Student’s details will be stored in the database. Also, it will contain the details of the teachers according to their subjects and the classes they teach. The system will be responsive which can be used in mobile phones. Also, the development of this project will be user friendly by facilitating with clear and understandable tabs. Hence, this website will be beneficial to institutes.

Keywords: Website, Student’s attendance, MySQL database, HTML, CSS, PHP, JavaScript

1. Introduction

The proposed system is web based which will be fully responsive and the user can use it in their mobile, tablets and computers. The records will be kept safe and secure and the attendance information of students of all the classes can be accessed easily. This system will reduce the chances of errors in attendance calculations. The data will be stored in the database and the data from the previous year can also be accessed. The ‘presence’ in the class is denoted by (P) and ‘absence’ denoted as (A). The mobile application automatically calculates the percentage according to the data. The percentage less than 80% is marked by red color and others marked as green. At the point when a student is effectively signed in, the student gets the entrance to the primary page that shows a menu containing an arrangement of features provided to the student [4]. The attendance management system will be developed using HTML, CSS, Java Script, MySQL and PHP. Our developed project will be secure by authentication and authorization technique.

1.1 Attendance management

Attendance management is the act of managing the presence and absence of students or employees in a school, institution or a managing company and offices. The current world uses various attendance managing technologies from biometric machines to applications. There is a compelling need for a well-designed attendance management system so that the records of their participation are efficiently managed; especially in the case of the lecture has large numbers of participants. Therefore, many systems to optimize the students’ attendance management so far have been proposed. Following are the important factors of this project:

- Authentication
- Authorization
- CSS
- HTML
- JavaScript
- MySQL

Authentication: Authentication is the process of determining whether someone or something is who or what it declares to be or not. Authentication provides access control for systems by checking to see if a user’s data match the data in a database of authorized users or in a data authentication server.

Authorization: It is the function of specifying access rights to resources related to information security and computer security in general and to access control in particular. More formally, “to authorize” is to define an access policy.

CSS: It stands for Cascading StyleSheet. CSS is used to control the style of web document in a simple and easy way.

HTML: It stands for HyperText Markup Language. With CSS and JavaScript, it forms a triad of cornerstone technologies for the WWW. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages.

JavaScript: JavaScript is a lightweight programming language. It is designed for creating network-centric applications. It is contemplimentary to and integrated with Java.

MySQL: MySQL is an open source relational database management system which is an abbreviation for Structured Query Language. MySQL is free and open-source software.

2. Literature Survey


In this paper, the architecture and design specifications of Student Attendance Marker Application on an Android platform are presented. The authors with their team have
In this paper, a novel framework for the attendance management is proposed, which consists of a mobile device and a web application. They have adopted the combination of a mobile device and web application. They have used the WAMP (Windows Web Development) server using phpMyAdmin service.

[2] Jun Lio, “Attendance Management System using a Mobile Device and a Web Application”, Department of Socio-informatics, Faculty of Letters Chuo University 742-1 Higashinakano, Hachioji-shi, Tokyo 192-0393, Japan, 2016. In this paper, a novel framework for the attendance management is proposed, which consists of a mobile device and a web application. They have adopted the combination of a mobile device and web application. They have used the WAMP (Windows Web Development) server using phpMyAdmin service.

This paper involves research and survey to identify how usage of mobile phones at education institutions can be made under the control of authorities and how 1000s of lecture hours can be saved in a year using this device. They propose a mobile application which will help institution authorities to control the students' mobile phones and attendance will be taken by the students itself for saving the time of taking attendance.

In this paper, the system is able to mark attendance, marking intruders’ entry, attendance percentage calculations, send emails, and send SMS to the guardian to keep them updated about their child’s attendance at the Institute. The designed system has an online access from any place and any moment which may extraordinarily assist the course teacher with keeping track of their student’s attendance. The system employs in Android API level 19. The application is implemented in eclipse android ADT bundle as IDE. The system used the internal SQLite database as phone database and www.golapmilonkuet.byethost16.com as web server database. The server holds MySQL database.


Table 1: Inferences drawn from Literature Survey

<table>
<thead>
<tr>
<th>Author name and publication</th>
<th>Title of the paper</th>
<th>Techniques used</th>
<th>Limitation</th>
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<tbody>
<tr>
<td>Mohammad Ausaf Anwar, Durgaprasad Gangodkar, Department of Computer Science Engineering, Graphic Era University, Dehradun, Uttarakhand, India, 2015.</td>
<td>Design and Implementation of Mobile Phones based Attendance Marking System.</td>
<td>WAMP, SQLite,</td>
<td>More prone to hacking or being misused by other physical attacks.</td>
</tr>
<tr>
<td>Jun Lio, Department of Socio-informatics, Faculty of Letters Chuo University 742-1 Higashinakano, Hachioji-shi, Tokyo 192-0393, Japan, 2016.</td>
<td>Attendance Management System using a Mobile Device and a Web Application</td>
<td>Monaca-application</td>
<td>There is no increase of the feedback comments.</td>
</tr>
<tr>
<td>Mahesh G, Jayahari KR, Kamal Bijlani Amrita e-Learning Research Lab (AERL) Amrita School of Engineering, Amritapur, Amrita Vishwa Vidyapeetham, Amrita University, India, 2016.</td>
<td>A Smart Phone Integrated Smart Classroom</td>
<td>Face recognition, Android</td>
<td>Automatic switching of profile to airplane mode in Android versions 4.1 i.e. Jelly Bean and above are restricted by Android due to security reasons.</td>
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3. Proposed Methodology

Fig 1 is the flowchart of our proposed system. The figure depicts how our system will run. The course teacher enters the system through a login page by providing his/her required information. Only the course teacher has full access to the system and can change the data in the system. After the teacher takes attendance of a class the data will be stored in the database of the web server. At the end of the semester calculation of attendance is done and if the student has less than 80% attendance in a class, message will be sent to the HOD, class teacher and the student’s parents/guardians.

![Flowchart for our proposed system](image)

**Fig 1: Flowchart for our proposed system**

**Steps to developing the system:**

**Step 1:** Students details are collected from I, II & III year of CCCT College, along with the details of the teachers and parents/guardians.

**Step 2:** In this step students’ data will be stored according to their course and semester including their parents’ details. Teachers’ data will be stored according to the subject they teach and classes they take.

**Step 3:** The website will be designed using HTML, JavaScript and CSS as the front-end tools.

**Step 4:** The data of the attendance will be stored in MySQL as the database. PHP will be used as the back-end design.

**Step 5:** The system will contain all the data from the previous years and the present data. The system can be hosted in the college website.

**Step 6:** After the website is done and a mobile application can also be made which will work on Android platform only.

4. Conclusion

This system is web-based attendance management system which will be developed using PHP, CSS, HTML and JavaScript. The course teacher can easily monitor the attendance of students which may develop the excellence of instruction because the fewer time required to collect and process data. Implementing the system in educational environment helps the user to identify attendance, calculate percentage. SMS and Email messages are sent via the system automatically to inform parents so that they can get notified about their child’s progress in the institution. The system will be responsive which can be used in mobile phones.

**References**


