WEB-INTEGRATED STUDENT ATTENDANCE AND MARKS TRACKING SYSTEM

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Abstract : The primary aim of this project is to design and implement a responsive web application compatible with mobile devices, facilitating the efficient tracking of student attendance and academic performance. This software addresses the challenges associated with manual maintenance of attendance registers, minimizing errors that may arise from human factors. Automation is introduced for seamless collection of attendance data and calculation of cumulative scores, alleviating the burden of manual processes.

Furthermore, the system extends its functionality to manage examination marks, providing a comprehensive solution for academic record keeping. Students benefit from the convenience of easily accessing and monitoring their attendance records and marks at any time. By leveraging technology, this application aims to enhance accuracy, accessibility, and overall efficiency in the administration and tracking of student attendance and academic performance.

IndexTerms - **Web application, Attendance, Cumulative, Marks, Reports.**

I. INTRODUCTION

In the current manual attendance system, the process relies on traditional pen-and-paper methods, leading to inherent challenges in accuracy when calculating cumulative attendance. Additionally, the evaluation of overall student performance based on examination scores becomes a laborious task within this framework. Recognizing these inefficiencies, our proposed platform serves as a comprehensive solution designed to streamline the management of attendance and student marks. This system aims to provide a robust mechanism for monitoring student performance and regular attendance, facilitating seamless collaboration among faculty, administrators, and parents.

Our proposed work introduces a significant reduction in paper consumption, offering on-demand report generation without compromising accuracy. The key objectives of this endeavor include the automation of the attendance collection system, ensuring precision in calculating cumulative attendance, monitoring examination performance, and generating reports on attendance and marks with enhanced effectiveness. Furthermore, the system promotes automatic information sharing with students and parents, fostering a more transparent and efficient communication channel within the academic ecosystem.

II. LITERATURE REVIEW

Ekta Chhatbar et al. contributed to the field by developing an attendance monitoring system, emphasizing the collection of attendance data exclusively. Notably, their work delved into the security aspects at the administrator level, providing insights into the crucial considerations in ensuring a secure attendance monitoring environment.

Dhanashree Amit gupta et al. designed a student attendance system utilizing ASP.NET, with a specific focus on attendance monitoring and the implementation of check-in eligibility criteria. Their project was distinguished as a desktop application, showcasing an intricate understanding of system architecture through the incorporation of an ER (Entity-Relationship) diagram, along with meticulous attention to the implementation details.

K. Akhila et al. studied the Indian education system and developed an android application. The core idea of this paper is to implement some of the emerging technologies like mobile computing. This paper discussed the framework of collecting attendance information using mobile phones.

Vibhav Bajpai et al. contributed significantly to the literature by implementing a system that not only tracked but also marked students' (or employees') attendance. Their work underscored the broader implications of attendance data, illustrating its role in evaluating the quality of an institution, facilitating timely administrative and financial decisions, and aiding in the planning of events that require participant counts and other institutional activities. This perspective reflects the multifaceted utility of attendance systems beyond the routine monitoring aspect.

Darshan Kumavat et al. developed a system for Replacing the pen and paper method of taking attendance. It generates the attendance of the student on the basis of presence in class. This system is maintained on the monthly basis of student's attendance. The system developed makes use of PostgreSQL as back end and PHP as front end.

III. EXISTING SYSTEM AND PROPOSED WORK

a) Existing system : In the existing system, registers were carried to classrooms, and attendance was written with a pen, a tedious process. Monitoring student attendance percentages at the beginning of the institution proved difficult, but sending timely information about absent students to their parents was impractical. Retrieving information from these handwritten registers was equally cumbersome. Preparing various reports are time consuming and requires more administrative staff.

b) Proposed System : Addressing the shortcomings of the existing system, the proposed system offers a transformative solution. This project aims to streamline workflow and save valuable time by generating accurate attendance reports. Timely notifications about absent students are dynamically delivered to parents. The system boasts a user-friendly interface, making it easily accessible. Efficient report generation is an additional benefit.
The software is meticulously crafted with MySQL serving as the robust backend database, HTML and CSS form the dynamic front end, and PHP proficiently handles server-side scripting. This comprehensive technology stack ensures a powerful and responsive application, seamlessly integrating database functionality, user interface design, and server-side logic for a cohesive and efficient software solution.

Advantages
1. User-friendly interface and rapid attendance entry.
2. Real-time data sharing with parents, eliminating delays.
3. Instant report generation in various formats for swift access and analysis.
4. Effortless monitoring across all hierarchical levels.

In the proposed system, teachers are required to undergo a simple registration process within the online platform. Upon successful registration, they can seamlessly log in using their unique credentials. Once logged in, teachers gain the ability to create classes and courses, providing a user-friendly interface for efficient organization and management. The system further facilitates importing student data, streamlining the process and ensuring that necessary information is effortlessly integrated, as illustrated in Fig-1.

Fig-1 Proposed System

IV. IMPLEMENTATION

An intuitively designed system has been developed to monitor attendance and grades across two modules. This user-friendly interface ensures a seamless experience for both administrators and users. Additionally, an Application Programming Interface (API) has been meticulously crafted, empowering students to effortlessly access and share relevant information with their parents. This robust integration not only streamlines the tracking of academic progress but also fosters effective communication between educational stakeholders, enhancing the overall efficiency and transparency of the system.

4.1 Registration and login credentials
To obtain registration and login credentials, teachers are required to visit the website www.mmsp.in/smsc. Here, they will initiate the registration process to secure their unique login details. The user-friendly Registration and Login pages, depicted in Fig-2, serve as the entry points, guiding teachers through a secure journey to access the system. This ensures a straightforward and efficient onboarding experience for educators as they navigate the initial steps to engage with the system.
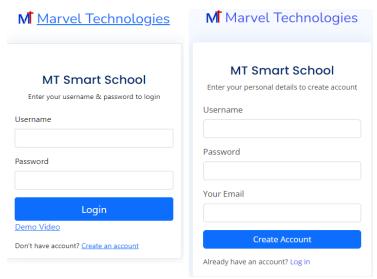
Fig-2 Login and Registration

4.2 Initial Settings

4.2.1 Create Class : By utilizing the interface presented in Fig-3, teachers can effortlessly initiate and complete the class creation process.
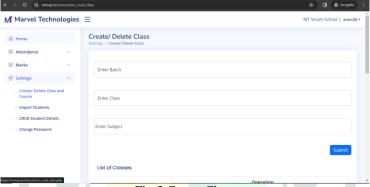

Fig-3 Create Class

4.2.2 Import students : Importing the student list for the corresponding class is accomplished through the user-friendly interface presented in Fig-4.
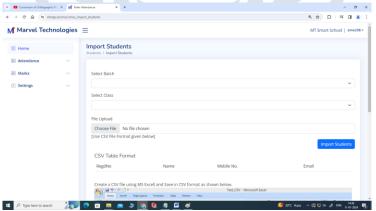

Fig-4 Import students

4.2.3 CRUD Student data : This page depicted in Fig-5 provides a comprehensive platform for the creation, reading, updating, and deletion of student data.

Fig-5 CRUD Student data

4.3 Attendance Module

4.3.1 Enter Attendance : To streamline the attendance tracking process, begin by selecting the date, batch, class, subject, and the number of periods. Initially, all students are automatically marked as present by default, optimizing efficiency. Subsequently, any absences can be easily identified and marked through a user-friendly interface, as depicted in Fig-6.
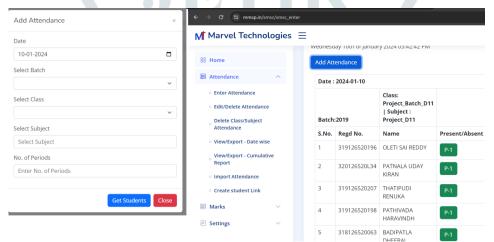

Fig-6 Enter Attendance

4.3.2 Edit Attendance : Any necessary corrections to the attendance records can be easily made using the 'Edit Attendance' option, as illustrated in Fig-7.
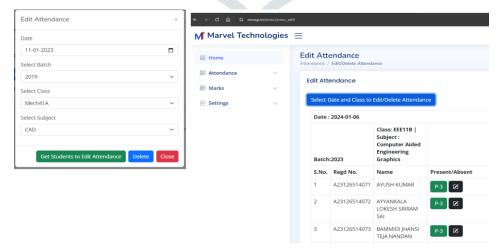

Fig-7 Edit Attendance

4.3.3 Reports : Effortlessly generate comprehensive attendance reports by utilizing the 'Date-wise' and 'Cumulative' options, as demonstrated in Fig-8 and Fig-9, respectively.
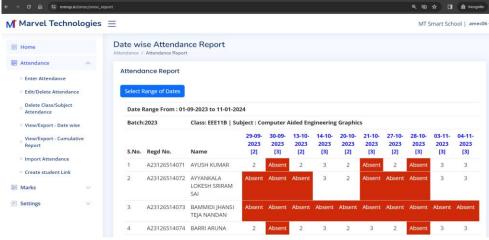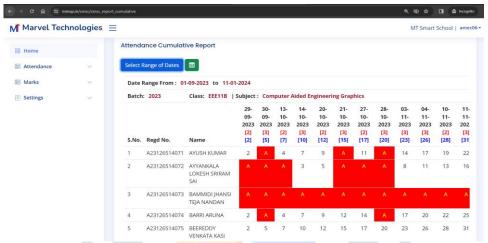
Fig-8 Date wise Report

Fig-9 Cumulative Report

4.4 Marks Module

4.4.1 Enter/ Edit Marks : Creating the exam and entering the marks can be done using the Enter marks page and Edit Marks page as shown in Fig-10.
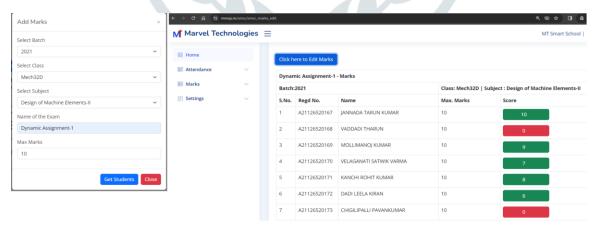

Fig-10 Enter/ Edit Marks

4.4.2 Marks Report : Exams wise overall marks report can be generated as shown in Fig-11.
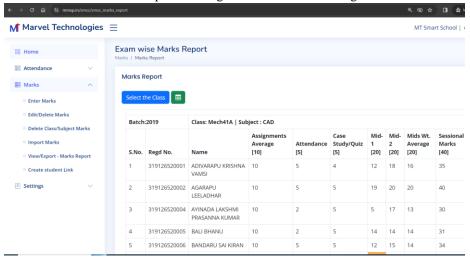

Fig-11 Marks Report

4.5 4.   Student API URL : An URL can be generated as shown in Fig-12 to share the attendance and marks data with students and their parents.
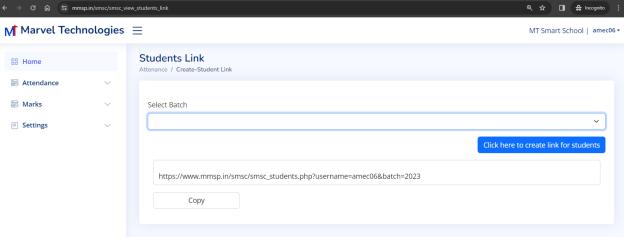

Fig-12 Student API generator

V. CONCLUSION

A web-integrated student attendance and marks tracking system was successfully developed, utilizing MySQL as the backend, HTML and CSS for the frontend, and PHP for server-side scripting. Hosted on the web server at www.mmsp.in/smsc, the system underwent rigorous testing with real-time data, providing teachers with an effortless user experience. Its straightforward implementation makes it an ideal solution for educational institutions.

VI. REFERENCES

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