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CORE (Classroom Oversight & Reporting Engine)

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Abstract - *This cloud-based system offers an easy and reliable approach for colleges to manage student attendance and Internal Assessment records efficiently. It securely stores student and parent information in a centralized database and allows faculty members to record attendance for both theory and laboratory sessions through an online interface. Parents receive daily attendance updates, while monthly attendance helps find students who don't have enough attendance for their Internal Assessments. IA-1 and IA-2 marks are recorded, automatically averaged, and included in a clear and well- organized Excel report generated at the final day of the semester. We have used HTML, CSS, JavaScript, PHP, and MySQL, the system improves accuracy, transparency, and communication across the entire academic management process.*

1. INTRODUCTION

With the increasing use of digital technique in education, colleges are shifting from paper registers and disconnected spreadsheets. Traditional manual methods often delay communication, lead to mistakes, and make it difficult to access accurate information when needed. To overcome these limitations, the proposed cloud-based system brings student details, attendance tracking, and Internal Assessment (IA) mark management together into a single, easy-to-use digital platform.

By using this website, lecturers can enter period-wise attendance for both theory and laboratory classes directly through an online interface. Parents receive automated daily attendance updates of their ward, even help them to know about regularity and discipline. The system also performs monthly attendance checks to identify students who fall short of the required attendance for IA eligibility and notifies parents in advance. In addition, IA-1 and IA-2 marks are stored, averaged, and included in a detailed Excel report generated at the final day of the semester.

Designed with simplicity, clarity, and security in mind, the platform provides the following features:

- Centralized storage of student information
- Real-time attendance monitoring
- Automatic IA eligibility verification
- Daily attendance notifications to parents
- Semester-end Excel report generation with IA averages
- A secure and accessible web interface for all users

1.1 Research Objectives

The main objectives of this research project are:

- To build a cloud-based platform that securely stores student and parent information in a systematic and easily accessible manner.
- To simplify the method of marking attendance for teachers by enabling online attendance recording for both theory and laboratory classes.
- To automatically analyze monthly attendance and identify students who do not meet the required criteria for Internal Assessments.
- To use PHP and MySQL for managing attendance data, calculating Internal Assessment averages, and generating academic reports.
- To design a clear, responsive, and user-friendly interface using HTML, CSS, and JavaScript for smooth interaction.
- To provide timely email notifications and generate Excel reports to keep parents and faculty regularly informed.

1.2 Operational Modes

User-Facing Features

- Online attendance marking that allows faculty to record attendance conveniently
- Parents get daily messages about their child's attendance.
- Monthly attendance status view for monitoring student regularity
- Access to Internal Assessment (IA) marks for students and parents
- Option for students to submit reasons for absence through the system
- Ability to download attendance and academic reports in Excel format

Backend Features

- Automatic analysis of attendance data on a monthly basis
- Efficient data handling and processing using PHP and MySQL
- Real-time email notifications for attendance and alerts
- Automatic generation of Excel reports for academic records
- Secure cloud-based hosting to ensure data safety and continuous access.

2 SYSTEM ARCHITECTURE AND METHODOLOGY

The cloud-based Attendance and Internal Assessment Management System is designed using a clear and well- structured architecture that links the user interface, backend processing, database storage, and notification services. All users including teachers, students, parents, and administrators access the system through a web portal. Things like marking attendance, adding IA marks, or sending requests through the browser are handled by the backend system.

The backend, developed using PHP, manages all core operations such as validating user input, updating records, and communicating with the MySQL database. Student information, attendance data, timetables, and Internal Assessment records are stored securely and retrieved whenever required. When faculty members mark attendance, the system updates the records immediately and sends email notifications to parents.

A background processing component periodically reviews attendance data, calculates monthly attendance percentages, and identifies students who don't have the required attendance for Internal Assessments. It also prepares data for report generation. Internal Assessment scores including IA-1 and IA-2, once entered, are processed to calculate averages, which are then included at the end-of- semester Excel report.

The frontend is developed using HTML, CSS, and JavaScript to present information in a clear and user-friendly manner. Users can easily view attendance summaries, Internal Assessment results, eligibility status, and download reports.

All system layers work together efficiently to ensure fast response times, accurate data handling, and smooth access across devices. This coordinated design makes the system reliable, efficient, and suitable for everyday academic use.

System Architecture Overview

- Input Layer:
  Gathers student details
  Accepts daily attendance records
- Processing Layer:
  Checks attendance patterns Detects shortages Calculates IA averages Prepares summary data
- Backend Layer:
  Handles system operations through PHP Organizes and protects all records in MySQL
- Frontend Layer:
  Offers an easy-to-use HTML/CSS interface Uses JavaScript to show updated information
- Data Flow:

1. Users enter attendance, IA marks, or student information through the online portal.
2. The backend processes the input and saves it securely in the database.

3. The system analyzes attendance and updates IA eligibility and report data.
4. The frontend displays the latest results, summaries, and downloadable reports to users.

2.1 Dataset Preparation

The dataset for the Attendance and IA Management System was prepared to reflect everyday academic activity in a college setting. Student records were created with essential details such as their personal information, parent contacts, class schedules, and assigned subjects. Attendance was taken for both theory and lab classes so the system could know which type of class the student attended.

To ensure the dataset represented real usage, entries were gathered from various semesters and sections, showing different attendance patterns. Each record was cleaned, checked, and formatted so that dates, times, subjects, and student IDs followed a consistent structure. IA information was also organized by recording IA1 and IA2 marks in a clear, uniform format to support accurate average calculations.

Whole data is then collected into daily attendance logs, monthly summaries, IA eligibility results, and final report details. This structured preparation allows the system to produce reliable outputs, generate clear Excel reports, and support features like email notifications to parents and students.

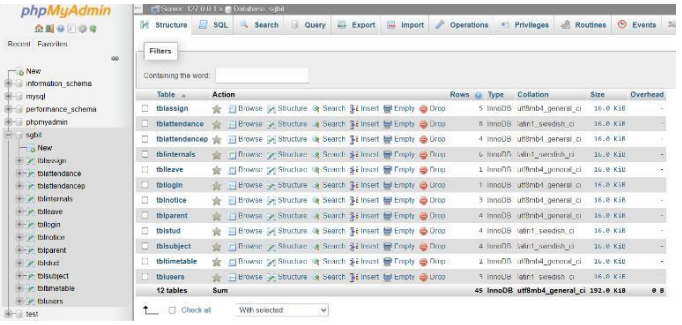


Figure 2.1.1: Database

2.2 Software Implementation

- **Backend Logic (PHP)**
  The PHP backend handles the main functions of the system, such as checking attendance entries, updating student information, and calculating attendance percentages and IA averages. It also prepares the final Excel reports and sends email updates to parents whenever important information needs to be shared.
- **Database Management (MySQL)**
  MySQL stores all the structured data used by the system, including student details, parent contacts, attendance logs, timetables, and IA marks. The database is arranged in a clean, efficient format so the backend can retrieve and update information quickly and safely.
- **Email Notification Service**
  This module sends automated emails to parents and students, so that they are alert about daily attendance, IA shortages, and report availability. It helps maintain regular and clear communication throughout the semester.
- **Frontend (HTML, CSS, JavaScript)**
  The frontend provides an easy-to-use interface where teachers, students, and parents can view attendance records, IA marks, summaries, and reports. JavaScript handles live updates and interactions, while HTML and CSS ensure the layout remains simple, responsive, and user-friendly.

3. RESULTS AND PERFORMANCE ANALYSIS

The evaluation of the cloud-based Attendance and IA Management System showed that it integrates well into day- to-day academic tasks and handles its core functions with ease. Teachers were able to record attendance for both theory and lab classes without interruptions, and the system reflected these updates instantly. Because of this real-time accuracy, students, faculty, and parents could rely on the system to provide the latest information whenever they needed it. Daily attendance emails reached parents consistently, helping maintain clear and timely communication between the institution and home.

The system also demonstrated strong accuracy in all its calculations. Monthly attendance percentages, IA averages, and eligibility results were produced correctly and matched the values obtained through manual checks. Administrators were able to generate Excel reports quickly, and each file displayed information that accurately reflected the database. This confirmed the reliability of the system when handling academic data and producing official records. During performance testing, the platform remained stable even when multiple users were active simultaneously. Pages loaded smoothly, and navigation between different sections was quick, indicating that the backend is well-built and able to manage regular academic traffic without slowing down. User experience testing also produced positive feedback. Most users found the layout simple to understand, and they could complete common tasks such as checking attendance summaries, viewing IA marks, approving absence requests, or downloading reports without difficulty. The clean and organized interface contributed to a comfortable experience for teachers, students, and parents alike. Overall, the testing confirmed that the Attendance and IA Management System is reliable, accurate, and easy to use. Its fast processing, dependable calculations, and intuitive interface make it a strong and practical tool for managing academic records and improving communication across the institution.

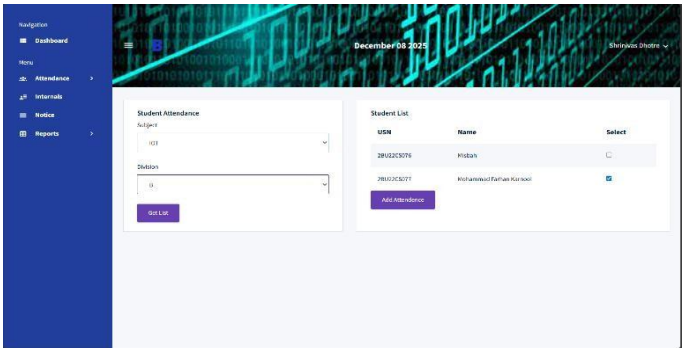


Figure 3.1: Add Attendance

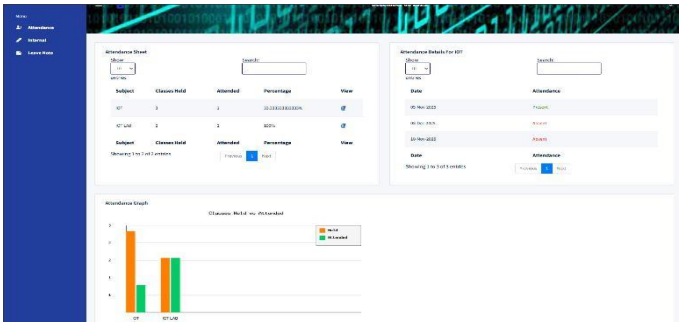


Figure 3.2: Overview of the Students overall attendance

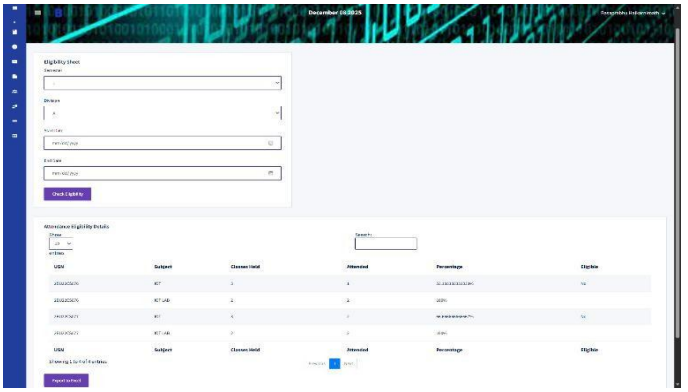


Figure 3.3: Attendance Eligibility Report

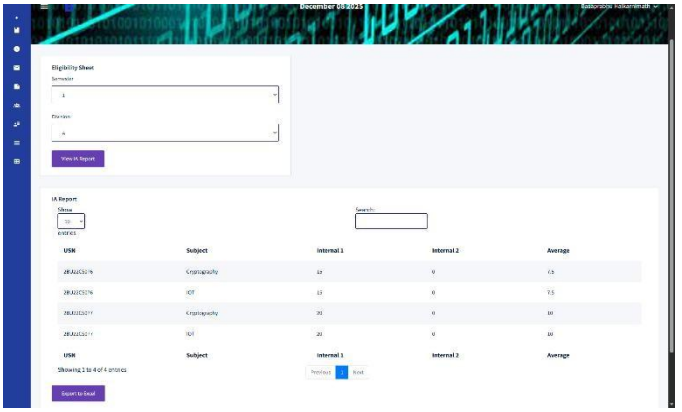


Figure 3.4: Internal Marks Average

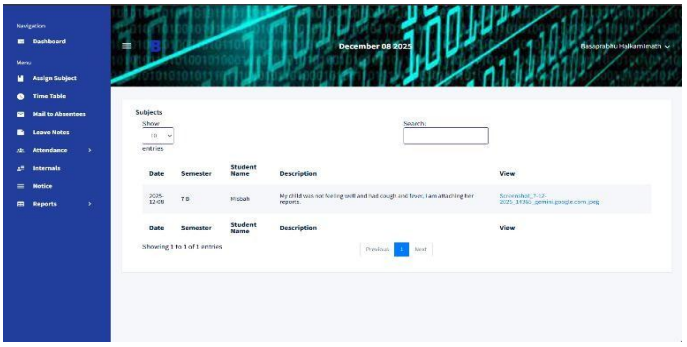


Figure 3.5: HOD will receive leave notes

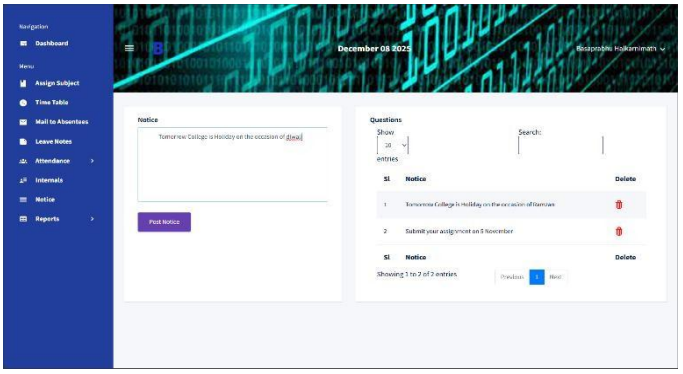
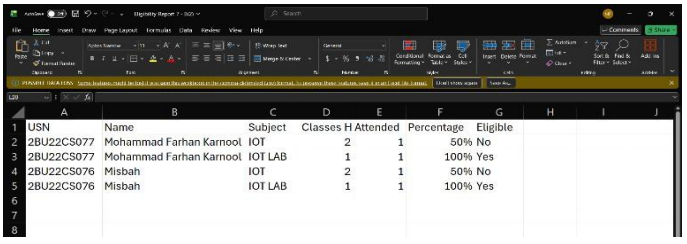


Figure 3.6: Add Notice



	A	B	C	D	E	F	G	H	I	J
1	USN	Name	Subject	Classes H	Attended	Percentage	Eligible			
2	2BU22CS077	Mohammad Farhan Karnool	IOT	2	1	50%	No			
3	2BU22CS077	Mohammad Farhan Karnool	IOT LAB	1	1	100%	Yes			
4	2BU22CS076	Misbah	IOT	2	1	50%	No			
5	2BU22CS076	Misbah	IOT LAB	1	1	100%	Yes			
6										
7										
8										

Figure 3.7: Eligibility Report Excel Sheet

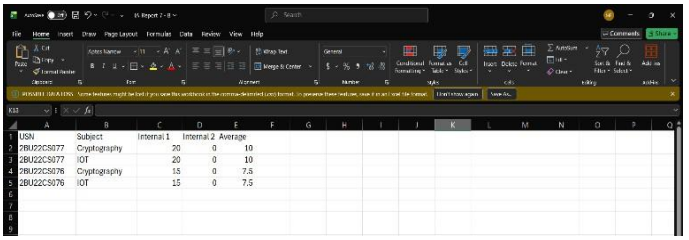


Figure 3.8: Internal Marks Excel Sheet

4. CONCLUSIONS

The cloud-based Attendance and IA Management System show how a simple digital platform can make every day academic tasks easier and more organized. The combination of a PHP– MySQL backend with a clear, easy-to-use interface allows teachers to record attendance quickly while keeping parents informed through timely email updates. The system handles monthly attendance checks, highlights IA shortages, and creates end-semester Excel reports that include IA averages and eligibility details.

Its flexible design also helps in future improvements, such as mobile app support or additional communication features. Overall, the system proved to be reliable, straightforward, and helpful for regular use in a college environment.

A key advantage of the system is its ability to grow and adapt. Its design makes it suitable for future improvements such as mobile app integration, advanced analytics, or additional communication tools to support teachers, students, and parents even more effectively. Throughout testing, the system proved stable, accurate, and easy to navigate. Overall, it offers an organized, reliable, and modern solution for managing attendance and IA records within a college environment

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