An Integrated Web-Based Campus Management System

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Abstract—**An integrated web-based campus management system was developed to solve the problem of using many different applications for different tasks in educational institutions. The system has two independent modules: Attendance Management and Event Management. In the Attendance Management module, teachers can mark attendance online for lectures, and students can view their attendance history date-wise or lecture-wise. After attendance is marked, students can also provide feedback for each lecture. Based on this feedback, the administration can take necessary actions for improvement. In the Event Management module, users can book halls/venues with the resources that are needed for any event at the institute. The admin checks these requests and can approve or reject them. Entirely authorized events are shown in the event calendar, and during the booked time, no different events can be scheduled. The admin can also download reports related to attendance, feedback, and hall booking history for future reference or analysis. This system helps campus administration work with further transparency, efficiency, and accountability while providing a user-friendly platform for all users.**

Index Terms—**Campus Management System, Web-Based Application, Attendance Management, Resource Management, Event Booking, Feedback System, Online Reports, Automated Notifications**

I. INTRODUCTION

An integrated web-based campus management system, aims to address these challenges by providing a centralized platform for managing campus activities efficiently. The system includes two independent modules:

- Attendance Management Module: Faculty can mark attendance online for their respective lectures. Students can view their attendance on a date-wise or lecture-wise basis through their logins. Students can submit feedback for each lecture, enabling the administration to take the necessary actions. The admin and faculty can generate careful attendance report.

- Event Management Module: Faculty and students can submit hall booking request with the necessary resources. The administrator can approve or reject requests, with automated email notifications sent to the requester. Authorized bookings are displayed in an event calendar to avoid scheduling conflicts. The admin can download reports of all events for monitoring and analyses.

1.1 Research Objectives

To design and develop a concentrated web application for campus management. This was used to automate attendance marking and feedback collection. To integrate hall and event resource booking with approval workflows. To enhance transparency between students, faculty, and administration. To provide real-time reports for performance tracking and planning.

1.2 Project Scope and Direction

The project focuses on automating key campus operations, including attendance management, student feedback collection, and event/hall booking.

Scope of the project:

- Primary Users: Students, faculty and administrative staff, each with special access rights to ensure data privacy and decent functionality.

- Platform Accessibility: The system is web-based and available through any up-to-date browser, making it platform-independent and convenient for both on-campus and remote access.
- Modular Design: The system is organized into separate modules for attendance management, feedback collection, and event management, allowing easy maintenance, scalability and future expansion.

Project Direction:
- Mobile Application Integration: Extend system functionality to Android and iOS platforms, enabling students, faculty and administrators to access the platform on the go.
- Multi-Channel Alerts: Use WhatsApp, SMS, or in-app push notifications for event approvals, deadlines, or feedback requests.

1.3 Impact, Significance, and Contributions
The proposed integrated web-based campus management system has multiple layers of impact and significance for educational institutions, students, faculty, and administrators.

- Reduction of Manual Work and Human Errors: Traditional attendance and event management systems often rely on manual registers, spreadsheets or standalone software. This manual approach is prone to errors such as fallacious data entry, absent records, or duplicate entries. By automating attendance marking, event booking, and report generation, the system reduces human errors, ensuring true and dependable data.
- Enhanced Transparency: All activities, including attendance marking, feedback submission, and hall bookings, are recorded in a centralized database. Admins, faculty, and students can track the status of each action in real time, promoting accountability. For example, students can view whether their feedback has been received and acted upon, while faculty can verify attendance submissions.
- Efficient Communication and Notifications: Real-time email notifications for event approvals, rejections, and different updates ensure that users are informed instantly. This reduces the need for continual manual follow-ups, phone calls, or emails and improves overall communication efficiency.

- Scalability: The system is designed as a web-based platform with a standard architecture, allowing easy expansion for large institutions or additional features.

II. LITERATURE REVIEW

- In the Smart Attendance Management System (SAMS) [1]. The authors proposed a biometric-based attendance system that reduces proxy attendance. The system works expeditiously to identify students using biometric devices but requires expensive hardware and lacks real-time data processing.
- College Management System [2] This system provides a single platform to maintain the records of students, staff, departments, and college activities. However, it does not support event or resource booking or a student feedback system.
- Online Seminar Hall Booking System [3] A system allows users to book seminar halls online, providing a simple booking interface. The limitation is the absence of charged email notifications or alerts, which are essential for confirming bookings in real-time.
- Conference Room Booking System Across Multiple Ministries/Departments in Different Buildings [4]. The proposed system centralizes conference room bookings across binary buildings and departments, improving coordination. However, it does not allow the booking of additional resources, such as projectors or audio systems.
- Recognition and Maintenance of Attendance Management System using AI and ML via Biometric System. This study proposed an AI and ML-based biometric attendance system that accurately recognizes faces and reduces manual errors. However, the system depends on high quality biometric hardware and extensive training datasets, which increases cost and implementation complexity. From the reviewed works, it is apparent that no exclusive system integrates attendance management, feedback collection and event/resource booking into an integrated platform. The proposed system bridges this gap by offering a centralized, automated and ascendible solution.

III. METHODOLOGY

- The project follows an organic web-based development approach, integrating attendance and event management modules into an exclusive platform.
- The system was developed using a modular design, where each module (attendance, feedback, hall booking) functions independently but communicates with a centralized database for consistency.
- Requirement Analysis was performed to understand the needs of students, faculty and administration, including attendance tracking, feedback collection, hall/resource booking, and report generation.
- System Design includes designing the database schema, user interfaces, and workflows for different user roles (admin, faculty, student), ensuring smooth interaction between modules.
- The frontend was developed using HTML, CSS, JavaScript, and Bootstrap to create a responsive and user-friendly interface available on any device.
- The backend was implemented using PHP to handle server-side logic, including attendance marking, event approvals, feedback processing, and report generation.
- The MySQL database stores all user data, attendance records, feedback, event bookings, and reports in a centralized and secure manner.
- An email notification system is integrated to provide real-time updates to students and faculty regarding approval or rejection of hall/resource booking requests.
- Testing and Validation were conducted at each stage to ensure proper functionality, including attendance accuracy, feedback collection, event booking approval, and report generation.
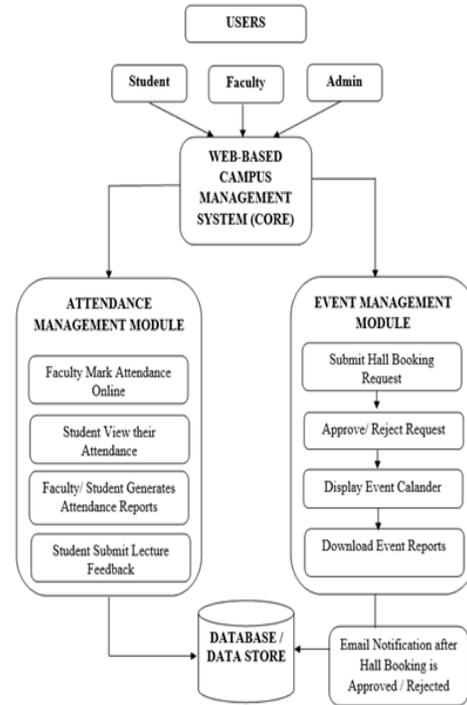

Fig. 1.1. Block Diagram of System

IV. BLOCK DIAGRAM

4.1 Attendance Management Module
Process Flow:

- Subject Creation and Assignment by Admin: The admin creates all subjects in the system and assigns each subject to the respective faculty members. The admin also maps each subject to the pertinent student.
- Attendance Marking by Faculty: Faculty members can log in to the system and mark attendance by selecting parameters such as Subject, Date, Section, and Time Slot. Once the attendance is submitted, the record is mechanically stored in a concentrated database.
- Student Feedback Submission: After attendance is marked, students can view their lecture-wise or date-wise attendance from their login panel. For each lecture attended, students can submit feedback regarding the session. This feedback is obvious to the administrator for performance evaluation and quality improvement.
- Report Generation: All users (Admin, Faculty, and Students) can generate and download attendance reports in Excel format for record keeping and analysis.

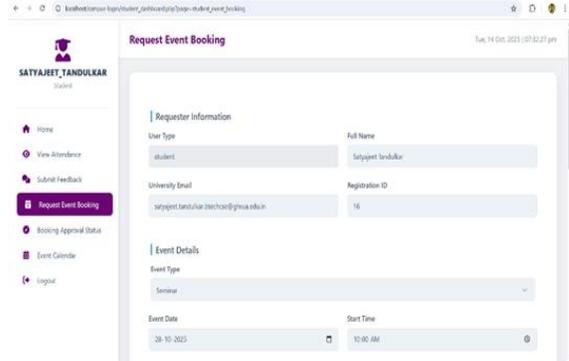4.2 Event Management Module

Process Flow:

- Event Request Submission: Both faculty and students can log in to the system and submit event hall booking requests. During submission, they are necessary to fill in a request form specifying essential details such as: Event name and purpose, Date, time, and duration, Venue/hall necessary and additional resources needed (e. g., projector, microphone, sound system, chairs, etc.).

- Request Approval by Admin: Once the event request is submitted, it is sent to the admin for a review. The admin evaluates the availability of halls and resources and either approves or rejects the request. Based on the decision, an automated email notification is sent to the requester (student or faculty).

- Event Calendar Display: After approval, the event details are automatically displayed on the Event Calendar within the system. This feature helps prevent scheduling conflicts, as no different event can be booked for a comparable hall and time slot.

- Status Tracking: Faculty and students can view the current status of their booking requests (Approved, Pending, or Rejected) from their login dashboard.

- Report Generation: The admin can generate and download detailed reports of all event bookings in Excel format for record-keeping.

V. TOOLS AND TECHNOLOGIES USED

| Component	Tool / Technology Used
Frontend	HTML5, CSS3, JavaScript, Bootstrap
Backend	PHP
Database	MySQL
Email Notification	PHPMailer
Reporting	PHP
Server / Hosting	Apache (XAMPP) / Localhost
Tools	VS Code, phpMyAdmin
Browser Compatibility	Chrome, Firefox, Edge

VI. RESULT

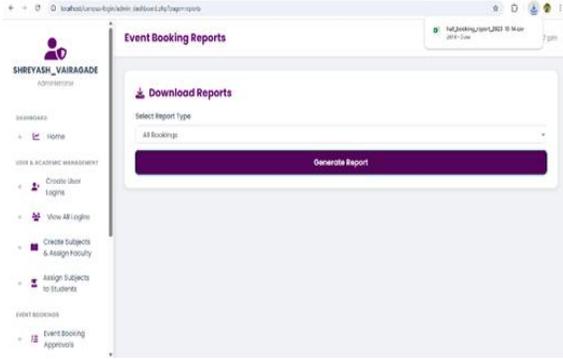- Event Management Module (Snapshot 6.1-6.7): Snapshot 6.1. Login Page – User login
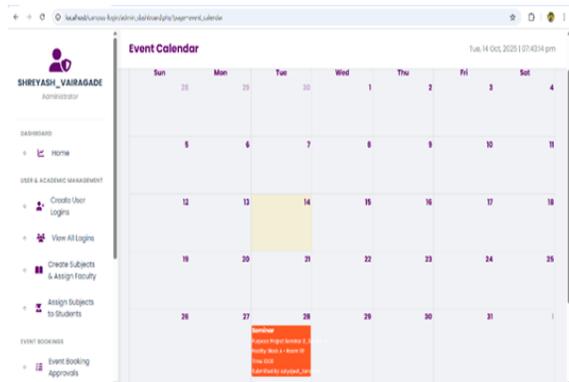
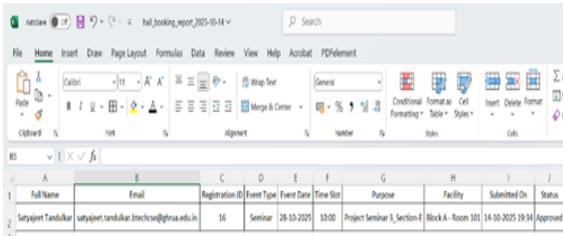Snapshot 6.2. Hall Booking Request – Form submission by student
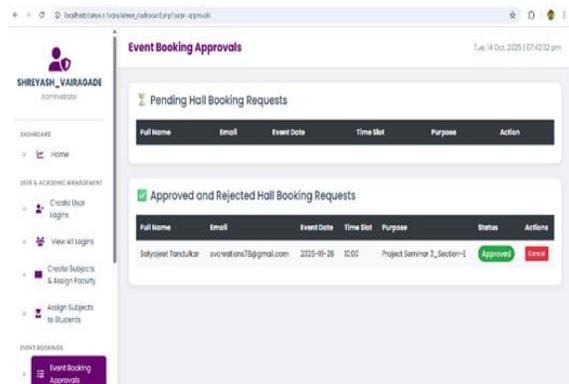
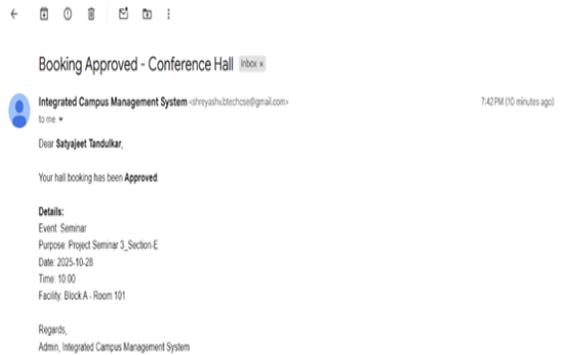Snapshot 6.3. Admin Approval – Admin dashboard to approve or reject hall booking requests.

Snapshot 6.4. Event Calendar Update – Approved events displayed in the system calendar.

Snapshot 6.5. Download Hall Booking Reports – Admin panel option to download booking history.
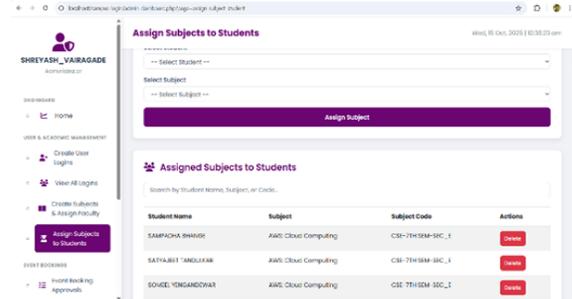

Snapshot 6.6. Hall Booking Report (Excel) – Generated an Excel report of approved/rejected bookings.
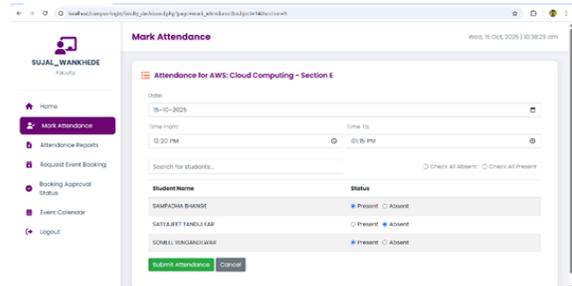

Snapshot 6.7. Email Notification – Automatic email sent to the requester regarding approval/rejection.
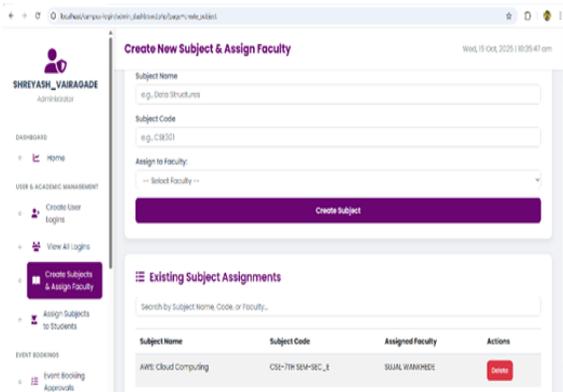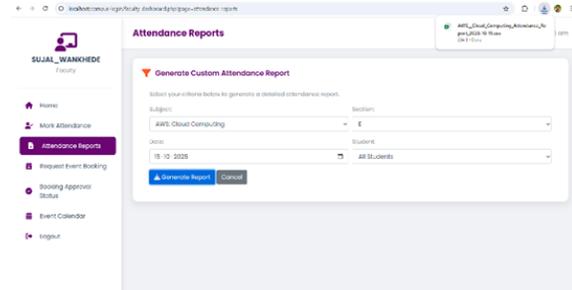

- Attendance Management Module (Snapshot 6.8 – 6.15):

Snapshot 6.8. Subject Creation & Assignment – Admin creates subjects and assigns faculty.
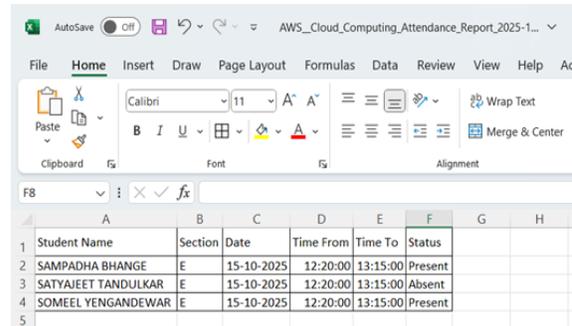

Snapshot 6.9. Assign Subjects to Students – Admin maps subjects to enrolled students.
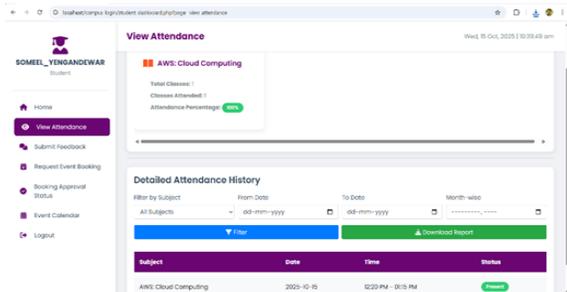

Snapshot 6.10. Mark Attendance – Faculty marks attendance lecture-wise and date-wise.
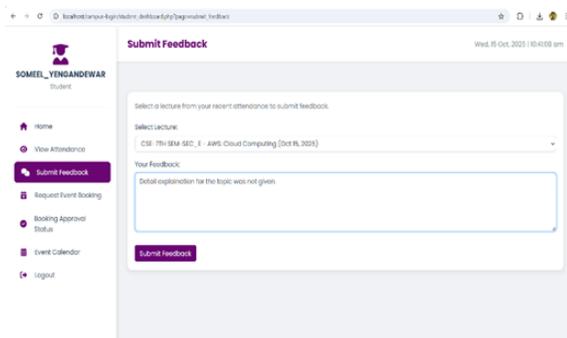
Snapshot 6.11. Download Attendance Report – Faculty can download attendance in Excel format. (This feature is also available for admin and student)
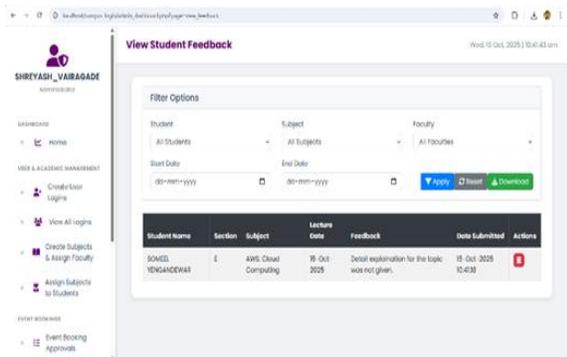
Snapshot 6.12. Attendance Report (Excel) – Generated an Excel report of student attendance.

Snapshot 6.13. Check Attendance – Students view attendance for selected date or lecture.

Snapshot 6.14. Submit Feedback – Students submit feedback for individual lectures.

Snapshot 6.15. View Feedback – Admin views student feedback for performance evaluation.

VII. CONCLUSIONS

The Integrated Web-Based Campus Management System successfully automates and streamlines essential theoretical activities such as attendance management and event booking. By combining both modules into an exclusive platform, the system eliminates manual work, reduces errors, and enhances coordination among students, faculty, and administrators. Real-time notifications, feedback mechanisms, and report generation features ensure transparency and efficient communication. Overall, the system provides a reliable, user-friendly, and paperless solution that improves campus operations and promotes digital transformation in educational institutions.

REFERENCES

[1] D. Band, G. Agrawal, H. Deo, V. Dhengekar, R. Dadanje, and Y. Thakare, "Smart attendance management system (SAMS): Attendance tracking process in educational institution," Int. Res. J. Eng. Technol. (IRJET), vol. 11, no. 4, pp. 1414–1420, Apr. 2024.

[2] S. Salokhe, S. Patil, S. Patil, T. Salavi, S. Mali, and R. Nejkar, "College management system," Int. Res. J. Eng. Technol. (IRJET), vol. 8, no. 7, pp. 365–368, Jul. 2021.

[3] K. Gowtham, K. Ranjith, and M. U. Moorthi, "Online seminar hall booking system," Int. Res. J. Eng. Technol. (IRJET), vol. 7, no. 3, pp. 100–102, Mar. 2020.

[4] C. Bulla, P. M. S., P. Kabade, and P. Madiwal, "Conference room booking system across multiple ministries/departments in different buildings," IAETSD J. Adv. Res. Appl. Sci., vol. 4, no. 1, pp. 203–205, Jan.–Jun. 2017.

[5] S. M. Kirsur, "Recognition and Maintenance of Attendance Management System using Artificial Intelligence over Machine Learning via Biometric System," PriMera Sci. Eng., vol. 2, no. 2, pp. 40–47, Feb. 2023.

[6] A. Firdonsyah and N. A. Putri, "Meeting Room Booking System with WhatsApp Notification Feature Using Extreme Programming Methods in RS Muhammadiyah Lamongan," Sinkron: J. Penelit. Tek. Inform., vol. 9, no. 3, pp. 1036–1049, Mar. 2025.

[7] F. A. Pratama, S. P. D. Kristiana, and C. M. Lukito, "The Implementation of SST as the System of Room Reservation for Students' Organization at Atma Jaya BSD Campus," SISFORMA, vol. 9, no. 1, pp. 45–52, Jan. 2024.

[8] A. Aljahdhami, "AI-Based Hall Reservation System," J. Student Res., vol. 14, no. 2, pp. 101–108, Feb. 2025.

[9]   A. Williams, "Delivering effective student feedback in higher education: An evaluation of the challenges and best practice," Int. J. Res. Educ. Sci., vol. 10, no. 2, pp. 473–501, Apr. 2024.

[10]   R. K. Yadav, "Securable virtual student's feedback system to prevent unethical comments," Int. J. Adv. Comput. Eng. Technol., vol. 11, no. 1, pp. 1–6, Oct. 2024.

[11]   E. Cabı, "The impact of a learning analytics-based feedback system on students' academic achievement and self-regulated learning," Int. Rev. Res. Open Distrib. Learn., vol. 26, no. 1, pp. 1–16, Jan. 2025.

[12]   J. Weidlich and M. Bastiaens, "Highly informative feedback using learning analytics," Educ. Technol. Res. Dev., vol. 73, no. 1, pp. 1–20, Feb. 2025.

[13]   J. Willis, "Towards faster feedback in higher education through weekly dialogic feedback loops," Australas. J. Educ. Technol., vol. 37, no. 4, pp. 1–15, Dec. 2021.

[14]   M. J. M. Leenknecht et al., "Students' feedback seeking behaviour in undergraduate education: A systematic review," Stud. High. Educ., vol. 48, no. 1, pp. 1–16, Jan. 2023.