A

Mini Project Report on

Campus Connect: A Structured Student management solution

Submitted in partial fulfillment of the requirements
for the degree

Second Year Engineering – Computer Science & Engineering (Data Science)
by

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CERTIFICATE

This to certify that the Mini Project report on "Campus Connect" has been submitted by Richa Tiwari (23107042), Ranjana Yadav (23107059), Riya More (23107014), Rohit Yadav (23107053) who are bonafide students of A. P. Shah Institute of Technology, Thane as a partial fulfillment of the requirement for the degree in **Computer Science & Engineering (Data Science)**, during the academic year **2024-2025** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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This project would not have come to fruition without the invaluable help of our guide **Campus Connect**. Expressing gratitude towards our HOD, **Prof. Anagha Aher**, and the Department of Computer Science Engineering & Engineering (Data Science) for providing us with the opportunity as well as the support required to pursue this project. We would also like to thank our project coordinator **Prof. Aavani Nair** who gave us his valuable suggestions and ideas when we were in need of them. We would also like to thank our peers for their helpful suggestions.

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Chapter 1

Introduction

Campus Connect is a software designed to help educational institutions manage student activities easily and efficiently. It allows administrators to handle tasks like tracking attendance, keeping student records, checking academic performance, and sending important messages to students. With this system, all student-related information is stored in one place, making it simple to manage and update. It reduces manual work, avoids mistakes, and ensures everything runs smoothly. The importance of efficient student management in educational institutions is emphasized, with a focus on the challenges posed by outdated or manual systems.

1.1. Purpose:

The basic purpose behind this application is to automate the administrative tasks related to managing student data in educational institutions. It centralizes information such as personal details, academic records, grades, attendance, and schedules, making it easily accessible to students, teachers, and administrators. By automating processes like grading, attendance tracking it reduces errors, saves time, and enhances overall efficiency. Additionally, it improves communication between students and teachers while ensuring data security and better academic planning.

1.2. Problem Statement :

Educational institutions, ranging from schools to universities, face challenges in efficiently managing large volumes of student data using manual systems. The traditional methods often involve paperwork, spreadsheets that can lead to errors, inefficiencies, and delays in processing important student-related information. Issues such as inaccurate record-keeping, difficulty in tracking student progress and poor communication between students, faculty, and administrators can negatively impact the administrative operations. So there is a need for an automated solution to manage student information, track academic performance and facilitate communication between staff and students. A Student Management System can address these issues by centralizing data, automating routine tasks, and providing real-time access to essential information, ensuring that both students and administrators can operate more efficiently and effectively. The system will not only reduce administrative burdens but also improve the accuracy of student records, streamline communication, and ultimately contribute to a more organized and productive educational environment.

1.2. Objectives:

The project has following objectives to be fulfilled:

1. To efficiently view, update, and manage the attendance of all students by providing a digital platform that allows staff and HOD to mark attendance.
2. To efficiently search, update, and delete student information by providing a centralized system.
3. To view student performance by providing a detailed dashboard that tracks academic attendance.
4. To send notifications and announcements to students by providing a centralized communication system.

1.3. Scope:

1. Can support automation in generating reports for attendances.
2. Can help maintain and update students and staff information without manual errors.
3. Can reduce paperwork by storing all records digitally in a secure database.
4. Can ensure secure login access with role-based functionalites for HOD, staff, and students.
5. Can streamline communication through an instant notification system for students and staff.

Chapter 2

Proposed System

To tackle the challenges of manual student data handling, attendance tracking, performance evaluation, and communication in educational institutions, we propose a comprehensive software solution. This system aims to automate and simplify essential administrative tasks, offering a more efficient, accurate, and user-friendly experience for both students and administrators.

System Architecture:

• Frontend: Developed using python with a user-friendly interface that allows user and administrators to interact seamlessly with the system.

• Backend: The backend is built with Python and takes care of all the behind-the-scenes work like logging users in, handling requests, and talking to the database to store or retrieve information. It makes sure everything runs smoothly and securely.

Key Pages and Functionality:

- **Login Page:** Allows users(HOD, Staff, Students) to securely log into the system. Password encryption and authentication and Role-based redirection after successful login.
- **Registration Page:** Allows students and staff to register with necessary details.
  approval by admin and Secure data validation to prevent unauthorized access.
- **User Page:**

  Personalized dashboard for each user role:

  1. HOD Dashboard**:** Manage students, staff, notifications, attendance reports.
  2. Staff Dashboard: Apply for leave, mark attendance, update profile, send notifications.
  3. Student Dashboard**:** Apply for leave, check attendance reports, receive notifications.

User Interface Design:

- The system features a simple and intuitive layout that ensures easy navigation for users.
- The dashboard is designed with a clean interface, providing role-based access for HOD, Staff, and Students. The design focuses on enhancing usability by keeping all essential features easily accessible.
- The interface is fully responsive and interactive, allowing seamless access across mobile and desktop devices .

2.1. Features and Functionality:

- Secure Login Access**:** Provides secure login access to HOD, staff, and students
- HOD Dashboard Management**:** Allows HOD to manage students, staff, notifications, and attendance reports through a dedicated dashboard.
- Online Leave Management**:** Enables students and staff to apply for leave online.HOD can review, approve, or reject leave requests with a simple interface.
- Notification System**:** Provides a notification system for HOD and staff to send important messages and updates to students.
- Staff Dashboard Functionality**:** Enables staff to apply for leave, mark student attendance, send notices, and update their profile from their dashboard.

Chapter 3

Project Outcomes

A Student Management System helps schools and colleges manage student and staff data more easily. It saves time by keeping all records in one place, making it simple to find and update information. Using a digital system also reduces mistakes

1. Efficient Management of Student and Staff Data:

- Reduced time and effort required for administrative tasks.
- Centralized storage of student and staff records with easy access.

2. Enhanced Accuracy and Reduced Errors:

- Eliminates inefficiencies caused by manual record-keeping and have digital attendance which reduce errors.

3. Improved Accessibility and Security:

- Secure login for different user roles (HOD, Staff, Students) with restricted access based on roles and Protection of sensitive data through authentication mechanisms.

4. Student and Staff Empowerment:

- Self-Service Portals: Students can check attendance/notices independently, reducing dependency on administrative staff.
- Transparency: Real-time access to academic records

Chapter 4

Software Requirements

The Campus Connect: Student Management System requires a combination of frontend, backend, database, and development tools for smooth operation. The frontend is built using python for an interactive user experience. The backend is built using MySQL serves as the database to store student, staff, and attendance records securely.

Operating System:

- Windows 11.

Python Environment:

- Python(3.12.0).

Database Management System:

- MySQL(8.0.9)

Chapter 5

Project Design

The Campus Connect: Student Management System follows a structured design approach to ensure efficiency, scalability, and user-friendliness. The system is based on a three-tier architecture, consisting of the frontend, backend, and database layers. The frontend provides an intuitive and responsive user interface, while the backend handles authentication, business logic, and database interactions. The database layer stores and manages all essential information, including student records, attendance, and notifications**.**

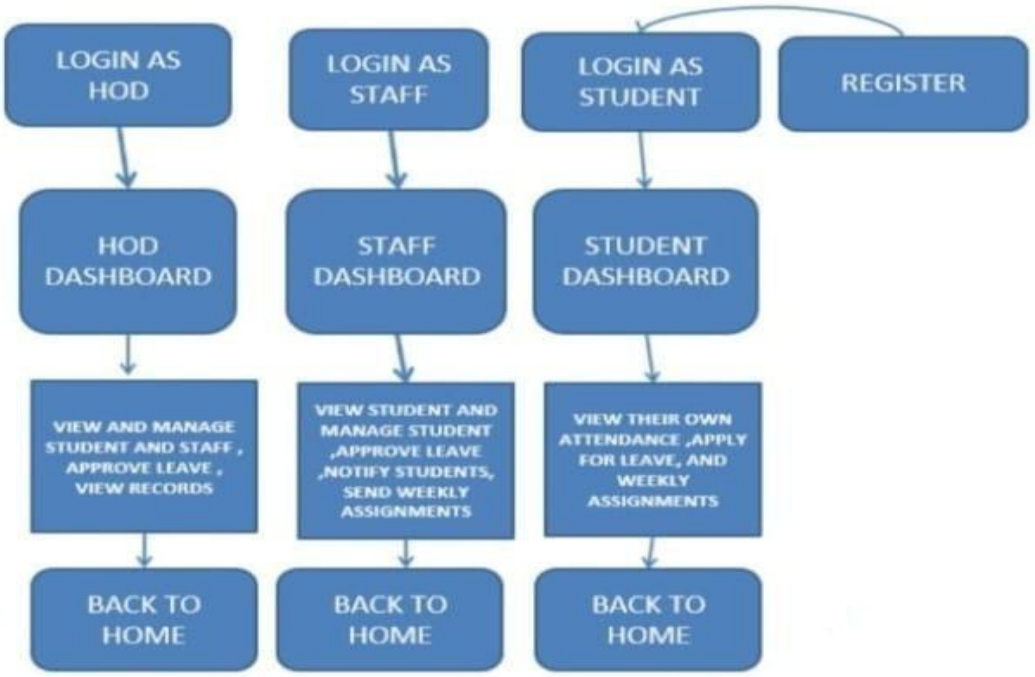

Fig 5.1 Project Design

In Fig.5.1, the project design represents the role-based navigation of the system. After login, users are redirected based on their roles. HODs manage staff, students, notifications, and attendance. Staff handle student records, notifications, and attendance, while students can view their details, notifications, and attendance reports.

Chapter 6

Project Scheduling

The project schedule for Campus Connect was organized over 15 weeks using a Gantt chart. It began with topic selection, team formation, and requirement analysis in the initial weeks. System design, including UI planning and database schema, was completed by Week 4. Development of frontend, backend, and role-based dashboards was carried out between Weeks 5 and 8. Database integration and implementation of features like attendance and leave management followed. Testing, debugging, and interface refinement were done in Weeks 9 to 11. The final weeks focused on documentation, internal submission, and viva preparation, ensuring timely and successful project completion.

Fig. 6.1 Gantt Chart

Following is the detail of the Gantt Chart:

The project scheduling for Campus Connect:Student Management System was carefully designed using a Gantt chart to ensure timely execution and effective resource management. Spanning over a 15-week academic semester, the schedule was divided into distinct phases. The initial stage included topic selection and team formation in Week 1, followed by requirement analysis in Week 2. During this phase, both functional and non-functional requirements were gathered, and the overall objectives and scope of the system were defined in consultation with the project guide. This foundation was essential for a clear and organized development path.

From Week 3 to Week 4, the focus shifted toward system design. The team worked on planning the software architecture, designing the database schema, and creating user interface layouts. Development began in Weeks 5 and 6 with the implementation of the frontend and backend. Key features such as role-based dashboards for HOD, staff, and students, along with login authentication and attendance tracking, were developed. Week 6 also marked the integration of the MySQL database. In Weeks 7 and 8, the team worked on leave management, performance tracking, and enhancing communication features like notifications.

From Week 9 was allocated for testing and bug fixing to ensure the system was stable and functional. Weeks 10 and 11 were focused on improving the user interface and optimizing system responsiveness. The final development phase took place in Weeks 12 and 13, involving comprehensive testing and the preparation of documentation, including technical reports and interface screenshots. Week 14 was reserved for the internal project demonstration, and Week 15 focused on final review and viva preparation. This structured approach helped the team manage tasks efficiently, stay on schedule, and complete the project successfully with the help of a well-planned Gantt chart.

Chapter 7

Results

The Student Management System was successfully implemented and tested, showing positive results in improving administrative efficiency. The system performed well in managing student records, tracking attendance, and facilitating communication within the institution.

Fig 7.1 Home page

In Fig 7.1, the CampusConnect login page provides access for HOD, staff, and students,with a registration option for new users. It has a simple, user-friendly design.

Fig 7.2 HOD Logic Page

In Fig 7.2, this is a HOD login page displaying placeholder credentials and a misspelled "LOGIN HOD" button. It includes redundant login links and a Home option.

Fig 7.3 HOD Dashboard

In Fig7.3, the HOD Dashboard of CAMPUSCONNECT, a Student Management System with options for managing students, staff, attendance, notices, and notes.

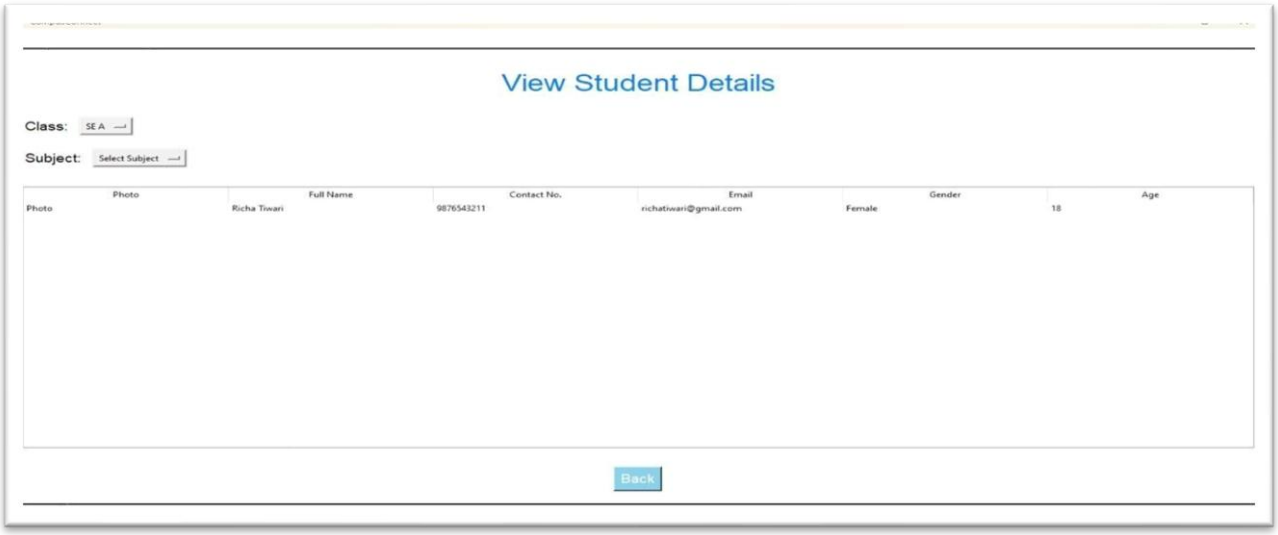

Fig 7.4 View Student Details

In Fig7.4, the "View Student Details" section of CAMPUSCONNECT, where the HOD can filter students by class and subject. It displays student information, including photo, name, contact number, email, gender, and age. A "Back" button is available for navigation.

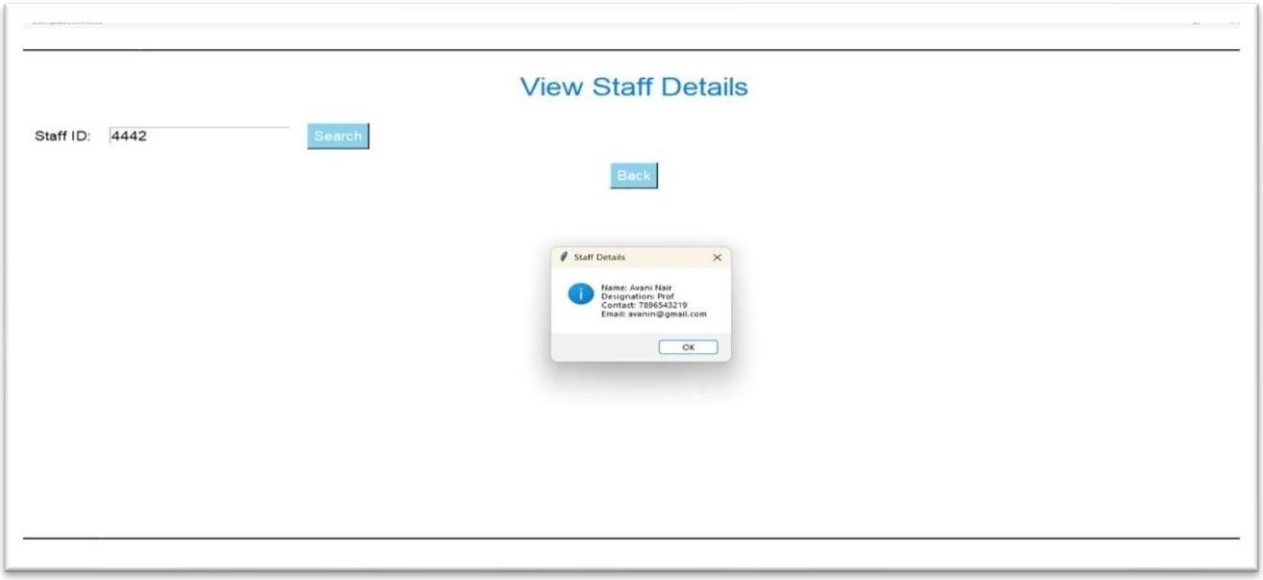

Fig 7.5 View Staff Details

In Fig7.5, the “View Staff Details” section of CAMPUSCONNECT, where the HOD can search for a staff member using their ID. A pop-up window displays the staff member’s name, department, contact number, and email. A "Back" button is provided for navigation.

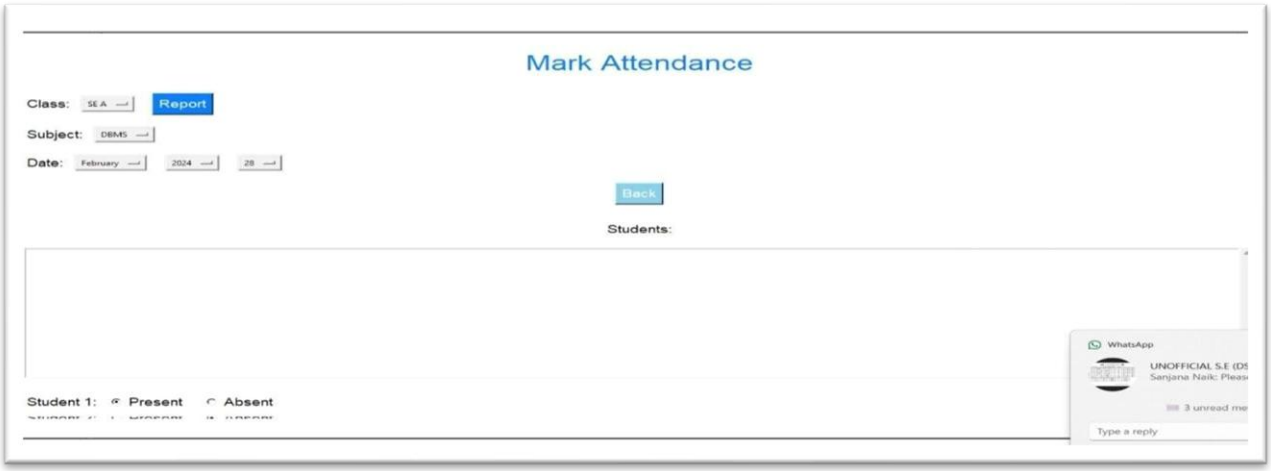

Fig 7.6 Mark Attendances

In Fig7.6, the "Mark Attendance" section of CAMPUSCONNECT, where the HOD can select a class, subject, and date to mark student attendance. Options are available to mark students as present or absent, and a "Report" button is provided for generating attendance reports. A "Back" button allows navigation.

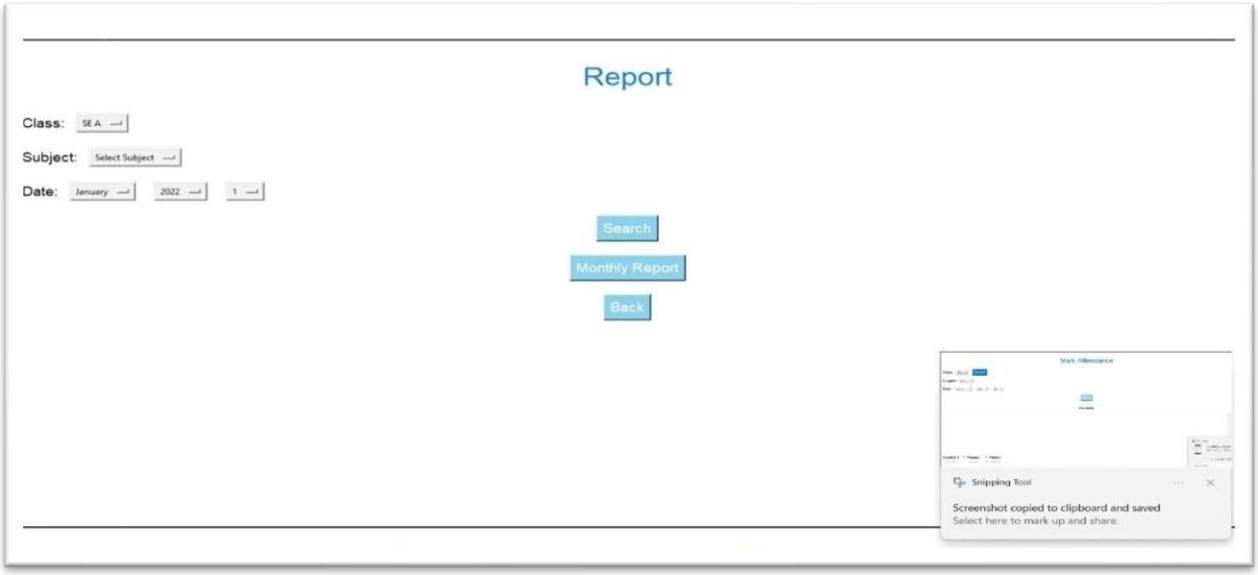

Fig 7.7 Report

In Fig7.7, the "Report" section of CAMPUSCONNECT, where the HOD can select a class, subject, and date to generate attendance reports. There are options to search for specific records or generate a monthly report, along with a "Back" button for navigation.

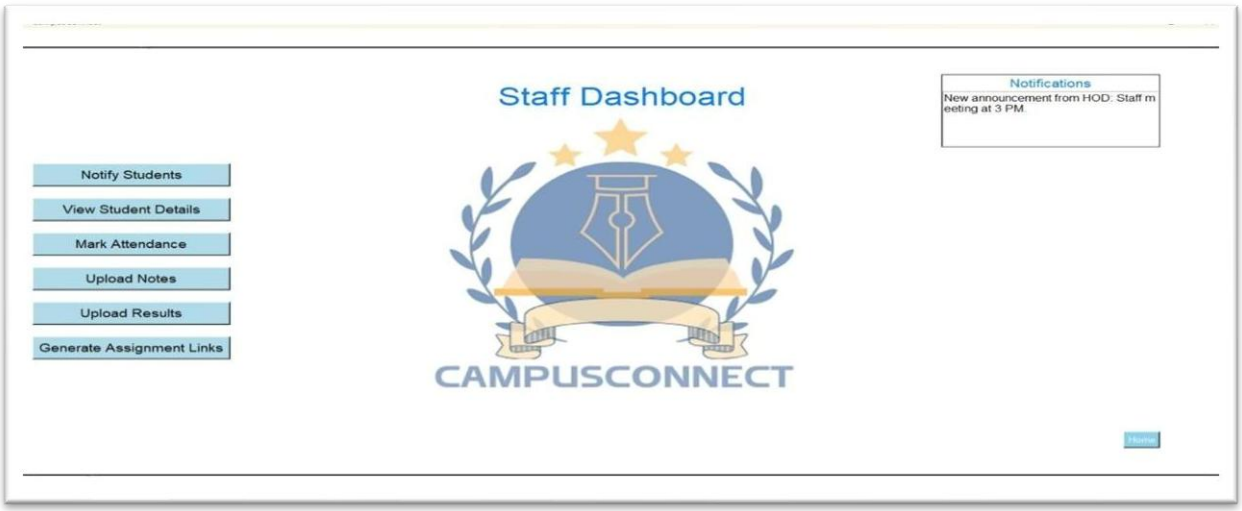

Fig 7.8 Staff Dashboard

In Fig7.8, the "Staff Dashboard of CampussConnect, where staff can notify students, view student details, mark attendance, upload notes and results, and generate assignment links.

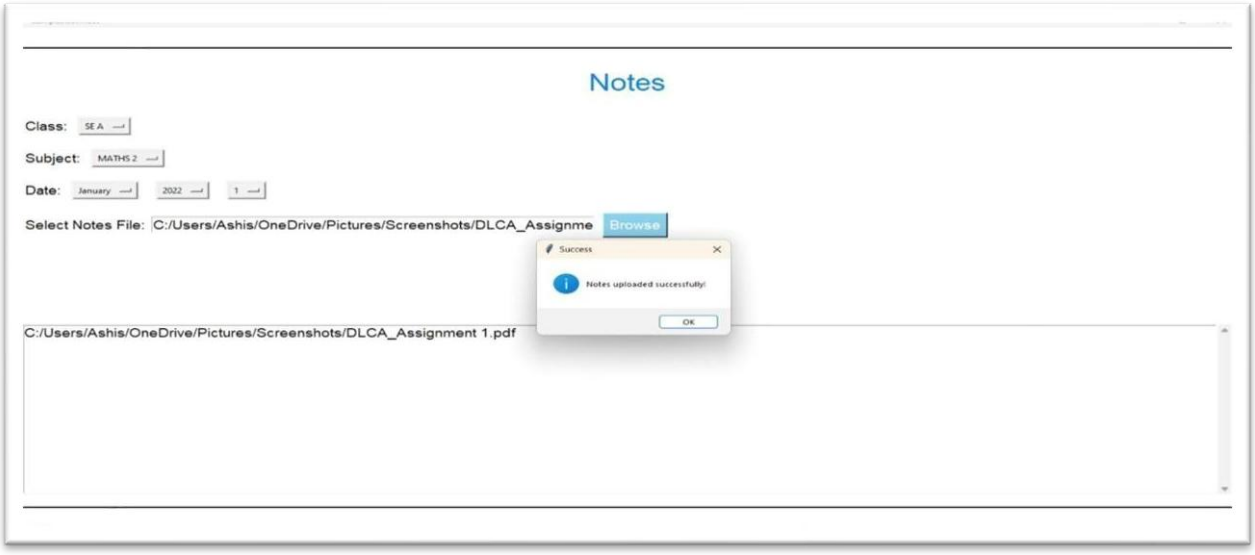

Fig 7.9 Notes

In fig 7.9, this section allows staff to upload study materials for students. They can select the class, subject, and date, then browse and upload a file. Once uploaded, the system confirms the success of the operation. This feature ensures easy sharing of academic resources, improving accessibility for students.

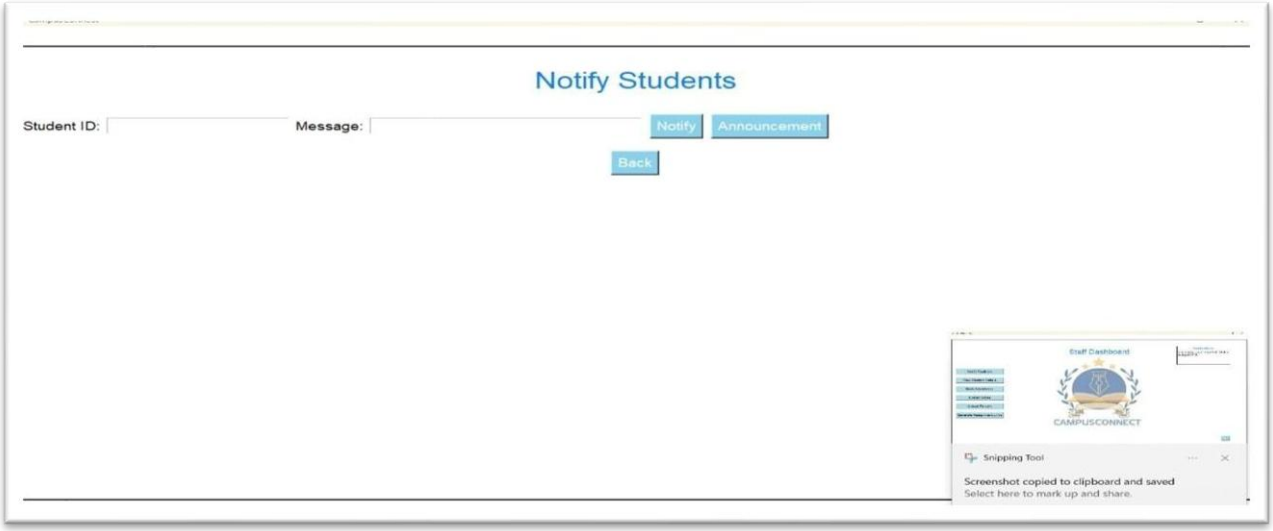

Fig 7.10 Notify Students

In Fig 7.10, the "Notify Students" screen in the CampusConnect with fields for Student ID and Message, along with "Notify," "Announcement," and "Back" buttons. A "Staff Dashboard" preview is also visible.

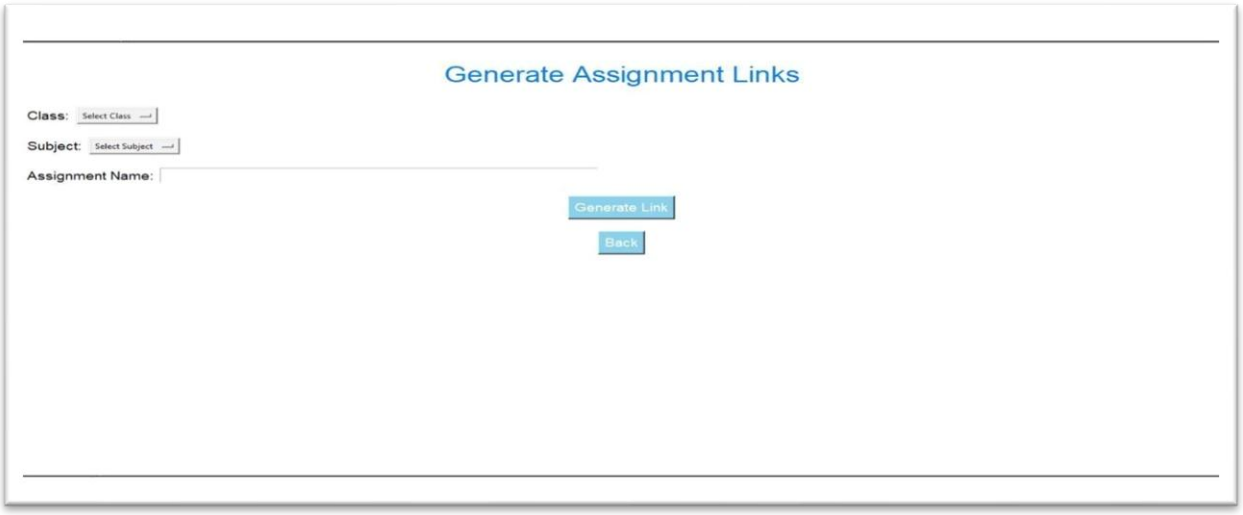

Fig .11 Generate Assignment links

In Fig 7.11, the "Generate Assignment Links" screen in the CampusConnect software. It has dropdowns for selecting a class and subject, a text field for entering the assignment name, and two buttons labeled "Generate Link" and "Back."

Fig 7.12 Monthly Attendances

In Fig7.12, the "Monthly Attendance" screen provides an overview of student attendance for the month, with an option to download reports for record-keeping. These features help streamline communication, assignment distribution, and attendance tracking efficiently**.**

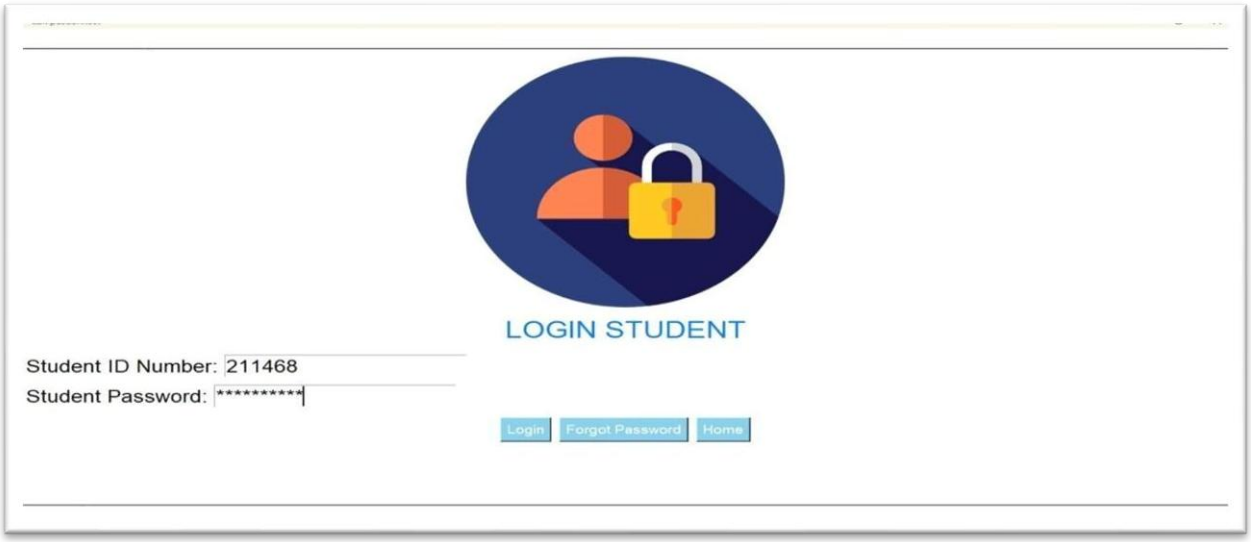

Fig 7.13 Login Student

In Fig 7.13, the student login screen in CampusConnect, where students can access their accounts by entering their Student ID Number and password. The design includes a secure login interface with options to log in, reset a forgotten password, or return to the home page. The interface ensures that students can securely access their academic information and other resources within the system.

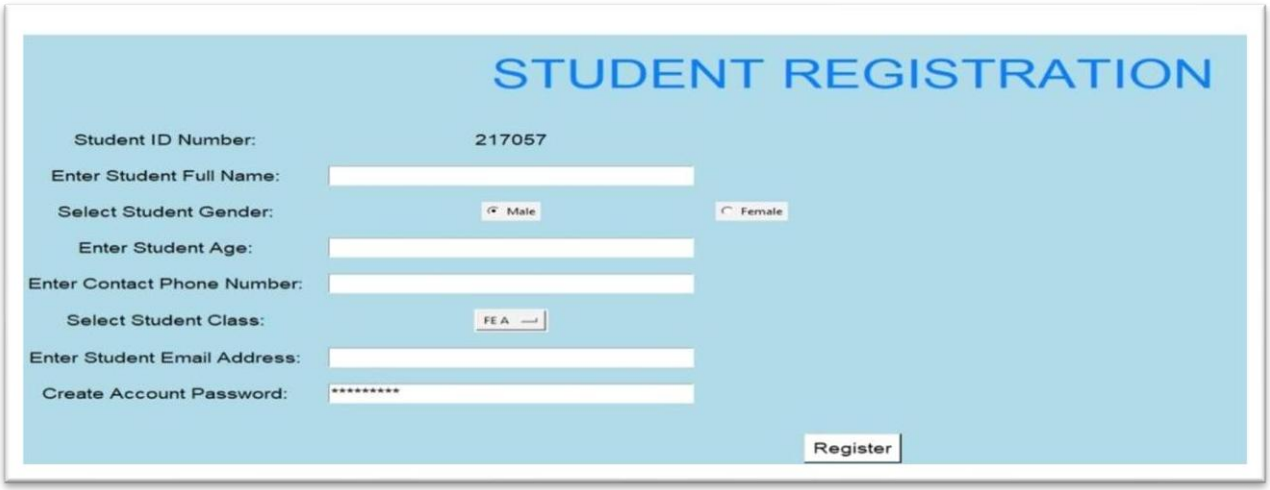

Fig 7.14 Student Registration

In Fig 7.14, Student Registration Form This form allows students to register by entering essential details like ID, name, gender, age, contact number, class, email, and password. It includes validation for accuracy and security. Once registered profile, students can access their dashboard for attendance, notifications, and management.

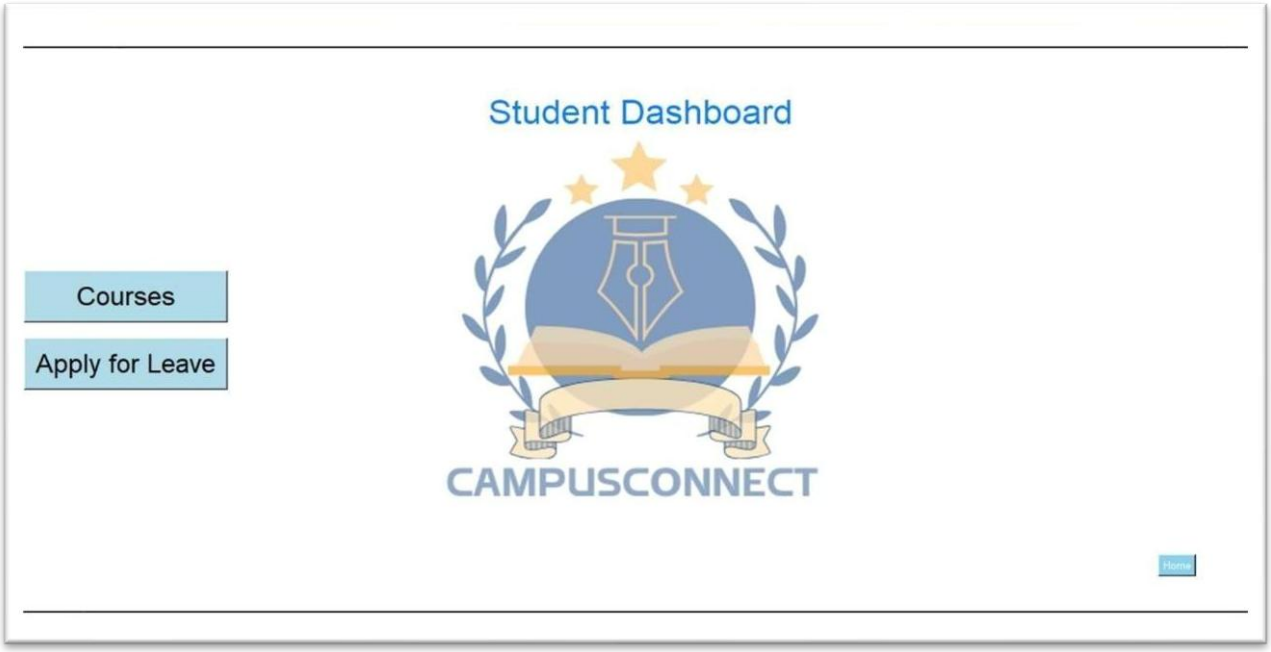

Fig 7.15 Student Dashboard

In Fig 7.15, the Student Dashboard of CampusConnect, which serves as the main interface for students. It provides easy access to key functions such as viewing courses and applying for leave. The design is simple and user-friendly, allowing students to navigate quickly and manage their academic tasks efficiently**.**

Fig 7.16 Apply For Leave

In Fig 7.16, the "Apply for Leave" page in CampusConnect, where students can request leave by selecting the start and end dates, choosing a reason from a dropdown menu, The interface is simple

Fig 7.17 Registration

In Fig 7.17, the Registration page of CampusConnect, where users can sign up either as students or as staff. It provides a straightforward interface for new users to create their accounts and gain access to the platform. The design ensures a smooth registration process, making it easy for students and staff to get started with their respective roles.

Fig 7.18 AOA Details

In Fig 7.18, the AOA Details page in CampusConnect, where students can manage their academic activities related to the Analysis of Algorithms course. It provides options to submit assignments, view attendance records, access notes, and refer to the lab manual. This interface ensures that students can conveniently access and manage course-related materials and tasks from one place.

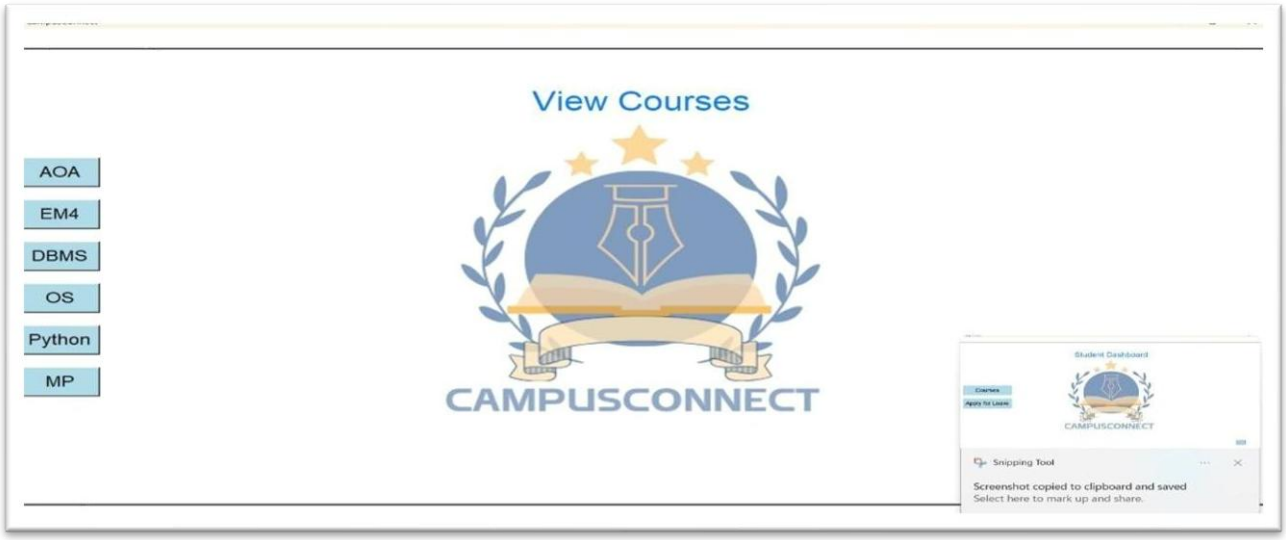

Fig 7.19 View Details

In Fig 7.19, the "View Courses" page in CampusConnect, where students can access various subjects such as AOA, EM4, DBMS, OS, Python, and MP. By selecting a course, students can explore related materials, assignments, and attendance records. This page provides a structured way to navigate through academic subjects efficiently.

Chapter 8

Conclusion

The Campus Connect: Student Management System provides an efficient and structured approach to managing academic activities within an institution. By implementing rolebased access, the system ensures that HODs, staff, and students can seamlessly perform their respective tasks. HODs can oversee staff and student records, manage notifications, and track attendance, while staff members handle student records and attendance management. Students can easily access their attendance reports and important notifications, improving transparency and communication.

With a user-friendly interface, secure database management, and interactive dashboards, the system enhances the overall efficiency of student administration. The integration of modern web technologies ensures scalability, allowing institutions to adapt to future needs. By automating key processes, the system minimizes manual workload, reduces errors, and provides a seamless experience for all users, making it a valuable tool for academic institutions.

References

[1]Abror Abduvaliyev, Al-Sakib Khan Pathan, Jianying Zhou, Rodrigo Roman and WaiChoong Wong,"On the vital Areas of Intrusion Detection Systems in Wireless Sensor networks", IEEE Communications Surveys & Tutorials, Accepted For Publications, 2013-in press.

[2]H.H. Soliman, et al,"A comparative performance evaluation of intrusion detection techniques for hierarchical wireless sensor networks", Egyptian Informatics Journal (2012) 13, 225238.

[3]Giannetsos Athanasios, "Intrusion Detection in Wireless Sensor Networks", Master THESIS, Carnegie Mellon University, April 8, 2008.

[4]K.Fall and K.Varadhan,"The NS Manual", http://www.isi.edu/nsnam/ns/doc/ns doc.pdf., 1 Feb 2014.