INTERNSHIP MANAGEMENT SYSTEM

A Project report submitted in partial fulfilment of the requirements for the award of the Degree

of

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

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GITAM
(Deemed to be University)
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DECLARATION

I/We hereby declare that the project report entitled "**INTERNSHIP MANAGEMENT SYSTEM**" is an original work done in the Department of Computer Science and Engineering, GITAM School of Technology, GITAM (Deemed to be University), submitted in partial fulfilment of the requirements for the award of the degree of B.Tech. in Computer Science and Engineering. The work has not been submitted to any other college or University for the award of any degree or diploma.

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CERTIFICATE

This is to certify that the project report entitled "**INTERNSHIP MANAGEMENT SYSTEM**" is a bonafide record of work carried out by **Sravan Namani(222010301001), Bolgum Hemanth Goud(222010301016), Govindaraju Venkata Naga Srinadh(222010301029), SV Nirnai(222010301037), Avinash Mattupalli(222010301051)** students submitted in partial fulfilment of requirement for the award of degree of Bachelors of Technology in Computer Science and Engineering.

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Sincerely,

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1. INTRODUCTION

The Internship Management System (IMS) is a cutting-edge platform designed to simplify and enhance the process of organising and managing internships for students. Its intuitive website interface makes internship management efficient and accessible to all stakeholders, offering tailored logins for students, faculty members, and higher authorities. This personalised access ensures that each user group benefits from specialised features, contributing to a seamless and productive internship experience.

One of the standout features of IMS is its student-faculty mapping functionality, which establishes a vital link between students and dedicated mentors. This fosters effective communication and collaboration throughout the internship journey, enhancing support and facilitating the exchange of knowledge and expertise. Moreover, IMS incorporates features such as an internship application portal, a robust notification system, and centralised student marks viewing, ensuring transparency, efficiency, and accountability across the internship process.

Additionally, IMS offers a comprehensive suite of resources to support student learning and project development during internships. With a dedicated Resource Centre providing access to learning materials categorised by technology, students can acquire the necessary knowledge and skills to excel in their internship projects. The platform also includes tools like a Documents Manager and Resume Builder, enabling students to manage their documents securely and create impressive resumes for internship applications. Combined with social media integration for enhanced visibility and networking opportunities, IMS serves as a holistic platform empowering students, faculty, and higher authorities alike in facilitating a rewarding internship experience

Furthermore, IMS incorporates a dynamic dashboard that generates comprehensive reports based on various metrics such as weekly progress, final presentations, and overall performance evaluations. Leveraging data visualisation techniques, this dashboard provides stakeholders with clear insights into areas of improvement, timeliness of report submissions, and the overall structure of final reports based on assigned marks. This analytical feature enables efficient monitoring and assessment of student progress, facilitating informed decision-making processes and enhancing the overall effectiveness of internship management.

Moreover, IMS offers a seamless integration with social media platforms such as LinkedIn and Instagram, allowing users to share their internship experiences and accomplishments with their professional networks. This feature not only enhances students' visibility within their respective industries but also fosters a sense of community engagement and professional development. By leveraging the power of social media, IMS enables students to showcase their skills, projects, and achievements to a wider audience, thereby enhancing their networking opportunities and advancing their career prospects in the competitive job market.

2. LITERATURE SURVEY

Several studies have been conducted on improving internship processes and management systems. N Hasti (2019) from the University of Computer Indonesia developed a web-based internship information system using a descriptive research method and a Prototype Method for system development.

Hyrmet Mydyti (2020) and Arbana Kadriu from SEE University in North Macedonia emphasised the role of an Internship Management System (IMS) in enhancing communication and processes among students, educational institutions, and businesses. The study surveyed different research studies from Kosovo, North Macedonia, and Albania, revealing positive responses and interest in implementing an IMS.

Sadia Anjum (2020) evaluated the impact of internship programs on the professional and personal development of business students in Pakistan. The study involved 800 undergraduate business students from 15 Pakistani universities, using a structured questionnaire and employing descriptive analysis.

A mixed-methods study addressed challenges in existing academic literature on internships, using thematic analysis, chi-square, and hierarchical linear modelling. Findings revealed variations in internship participation based on race, institution, enrollment status, and academic program. The study proposed a processual model for examining internships and discussed implications for career advisors, faculty, and educational leaders.

Research by Wahyu Hardyanto, Aji Purwinarko, Sudana, and Eko Supraptono (2018) focused on developing a Management Information System (MIS) for internships. The study was conducted at the International Conference on Science and Education and Technology and aimed to streamline the internship process and enhance communication between educational institutions and industries using the waterfall model.

Mydyti, Hyrmet, Kadriu, and Arbana (2020) from IRENET highlight the crucial role of internships in enhancing post-graduation employability and workforce integration. Educational institutions strive to provide opportunities for students, fostering awareness of market demands and skill development. Companies, in turn, benefit by gaining practical skills from interns and identifying talents that align with their culture.

The study underscores the need for an Internship Management System (IMS) to streamline connections between Students, Businesses, and Educational Institutions. The absence of an IMS makes this connection cumbersome and time-consuming. The IMS serves as a tool to simplify the exploration of professional learning experiences for students, aiding in talent identification and reducing time and effort. This system proves essential in fostering new perspectives and aligning talents with internal company dynamics.

Mohammed ELhaouari (May 2016) initiated a research project addressing challenges in the Internship Management System at Hassiba Ben Bouali University of Chlef. The proposed system aims to automate the generation of internship offer letters, improve data independence and access, facilitate online application submission and status tracking, and enhance the visibility of changes with individual user accounts.

Yannuar, Badar Hasan, Abdullah, and Hakim (December 2018) studied challenges faced by students in internships, emphasising difficulties in securing suitable placements, lack of information and guidance, and the impact of choosing an internship location. The study highlights the role of web-based internship platforms in education and advocates thorough testing for quality and security.

Marco Jr. Nañadiego Del Rosario and Ronnel A. Dela Cruz (January 2022) explored Internship Management Information Systems with Lean Management. Using the RAD model, their findings show efficient modules for monitoring and supervising the internship program. The system obtained positive evaluations based on the ISO 25010 software quality model for Product Quality.

The following are some of the main approaches towards Internship Management:

2.1. Faculty Mentoring

According to Hora et al. (2020) from the University of Wisconsin–Madison, the role of supervision and mentoring in internship programs is a well-explored aspect. Studies consistently show that supervisor mentoring, involving clear guidance and feedback, correlates with positive outcomes such as intern satisfaction, commitment to the internship sponsor, and a positive attitude toward the hosting industry. McHugh (2017) emphasised the significance of supervisor support for management student interns, linking it to higher perceived developmental value and increased satisfaction.

2.2. Integration with academic programs

Another significant aspect of internships involves connecting an internship and students' academic programs. Indeed, one of the central assertions of work-based learning programs is that students, when placed in "real-world" environments where they must address genuine practical problems and apply their academic knowledge to the workplace, experience benefits in both academic progress and career development (O'Neill, 2010). However, there is often no assurance that the tasks assigned to interns will be directly related to their previous coursework, and it is not uncommon for interns to spend weeks in work unrelated to their career aspirations (Perlin, 2012). Unfortunately, beyond research in fields where internships are more structured, such as medical education (Scicluna et al., 2014), there is limited research examining the nature of coordination between academic programs and internships and its impact on student outcomes.

2.3. Design Patterns

Mydyti et al. (2020) highlight the prevalence of design patterns in software development, mainly focusing on their application in implementing data structures. The study delves into behavioural, structural, and creational design patterns, emphasising reusability, storage, and independence.

Behavioural patterns, such as Iterator, Template Method, Visitor, Strategy, Comparator, and State, enhance communication, interaction, and dynamic interfaces in data structure models. Structural patterns, like Flyweight, Bridge, Adapter, Decorator, and Composite, improve class and object composition in larger structures. Creational patterns, including Abstract, Factory, Singleton, and Builder, contribute to better instantiation and abstract behaviour.

The study goes further to classify patterns, address challenges, explore trends, and propose new approaches for design patterns. A comprehensive comparison evaluates their usage, categories, and critical elements, highlighting the benefits of web applications like reusability, consistency, flexibility, speed, scalability, and security. Best practices related to Creational, Behavioral, and Structural Design Patterns are discussed.

In addition, the study compares approaches like MVC, Factory, and Abstract, identifying MVC as the most popular in web-based application development due to its reusability, flexibility, easiness, and manageability (Hameed et al., 2014).

3. SYSTEM ANALYSIS

3.1. Scope and Methodology

The Internship Management System project aims to upgrade how internships are managed in academic institutions, making tasks easier for administrators and enhancing students' learning experiences. It includes essential features like a Resource Centre with learning materials, a Document Management system to store important internship documents, and a Resume Builder tool to help students create polished resumes based on their experiences. The system also simplifies access to internship opportunities and provides useful performance reports, along with better communication channels through personal chats and automated feedback emails.

In developing this system, we follow a clear step-by-step process. We start by understanding what each feature needs and creating a straightforward design. Our technical tools include Django for the backend, HTML, CSS, JavaScript, and Bootstrap for the frontend, and SQLite for managing data efficiently. We're also open to feedback, continuously improving the system based on user input.

The technical framework of the Internship Management System leverages the strength of Django for the backend operations, ensuring scalability and maintenance ease. On the frontend, the combination of HTML, CSS, JavaScript, and Bootstrap ensures a user-friendly interface that caters to diverse user needs. The database management relies on SQLite, optimising data handling and retrieval. The project's methodology emphasises iterative development cycles, stringent testing, and continuous user engagement to refine and improve the system. By employing a phased deployment strategy and comprehensive user training, the project aligns with the institution's overarching goals of fostering a conducive learning atmosphere and comprehensive student development.

3.2. Problem Statement

Inefficiencies, communication gaps, and manual administrative burdens currently mar the management of internships within educational institutions. In contrast, faculty members need help coordinating and overseeing the internship process effectively. Additionally, higher authorities like HODs and Coordinators face challenges in streamlining the allocation of students to internships and monitoring the program's progress. These challenges collectively hinder the seamless integration of practical experiences into the educational journey.

Furthermore, the absence of a dedicated platform results in disjointed communication among Students and Faculty. The manual allocation of students to Faculty by higher authorities consumes valuable time and needs more transparency and optimisation.

These challenges highlight the need for an innovative solution to streamline the internship management process. A comprehensive Internship Management System is required to address the inefficiencies, enhance communication, coordination, and administration, and provide a seamless experience for students, faculty members, and higher authorities. Such a system would bridge the gap between theoretical learning and practical application, ensuring that internships provide valuable skills development and professional growth opportunities.

3.3. Existing Problem

The current management of internships within educational institutions and organisations is riddled with several significant challenges that hinder the seamless integration of practical experiences into students' educational journeys. Foremost among these challenges is the inefficient application process.

Additionally, Faculty members, who play a critical role in guiding students through internships, need help with disjointed processes for proposing internships, reviewing applications, and endorsing eligible candidates. This lack of standardisation in communication and coordination leads to inefficiencies and missed opportunities.

Moreover, higher authorities' manual allocation of students to internships compounds the problem. This process is prone to errors and consumes a significant amount of time, resulting in suboptimal student-internship pairings.

Furthermore, communication gaps among students, faculty members, and higher authorities must be clarified and timely. Students need a clearer view of the status of their internship applications, leaving them uncertain about the progress of their submissions. Inconsistent monitoring of students' progress during internships limits the effectiveness of mentorship and guidance provided by faculty members.

3.4. Proposed Solution

To address the existing challenges in managing internships, the Internship Management System project proposes comprehensive solutions to enhance communication, coordination, and overall user experience. The proposed solutions include

Implementing a student-faculty mapping feature will be a cornerstone of the project. This will assign each student to a specific faculty member who will mentor them throughout the internship journey. This personalised guidance and support system will ensure effective communication, regular check-ins, and tailored feedback, enhancing the overall quality of the internship experience.

Introducing a discussion forum within the platform will foster collaboration between faculty members and students. This space will facilitate open communication, enabling students to seek guidance, ask questions, and share insights with their assigned faculty mentors. Faculty members can provide real-time assistance, clarify doubts, and engage in meaningful discussions to enrich the learning experience.

The proposed solution includes creating a user-friendly website that offers intuitive navigation and precise interfaces for all user roles. Students, faculty members, and higher authorities will find it easy to access relevant information, perform tasks, and interact with the platform. The website's design will prioritise usability, ensuring users of varying technical backgrounds can engage seamlessly.

The array of proposed solutions collectively serves as a robust strategy to remedy the issues of disjointed communication, coordination inefficiencies, and obscured transparency within the ongoing internship management system. By synergistically harnessing the potential of student-faculty mapping, dynamic discussion forums, an intuitive, user-friendly website, and refined submission and review mechanisms, the Internship Management System project aspires to craft a unified and streamlined ecosystem.

4. SYSTEM DESIGN

4.1. Architecture diagram

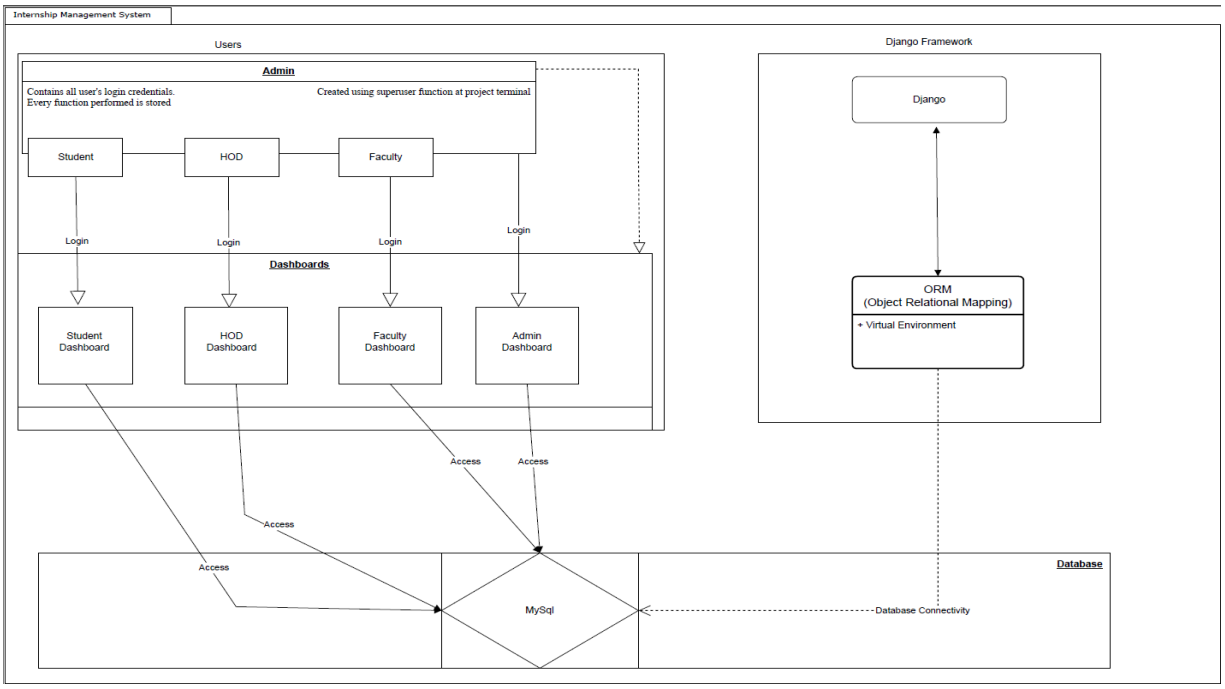


Fig-1: Architecture diagram

The architecture diagram presents an Internship Management System structured to handle various user roles, including Students, HODs, Faculty, and Admins. Each user category has its own dedicated login process leading to a role-specific dashboard, underpinning the system's role-based access control. The dashboards are designed to provide the functionalities pertinent to each role, ensuring users can perform their tasks effectively. The system utilises the Django framework, indicating a robust and scalable backend architecture, which employs Object Relational Mapping (ORM) to facilitate interactions between the application and a MySQL database. This ORM, likely running within a virtual environment, acts as a layer of abstraction, allowing for more secure and flexible database operations. The database connectivity is centralised, suggesting an integrated data management approach where all user actions are tracked and stored, with the Admin having overarching access to the system's functions.

4.2. Database Design

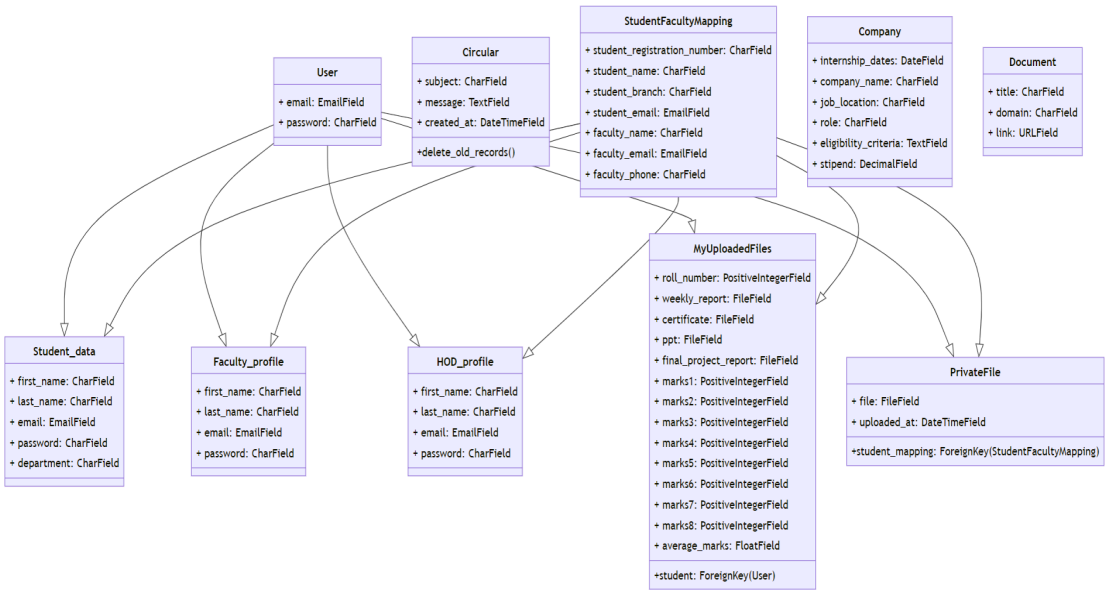


Fig-2: Database Design

The database design outlines a structured schema for an educational or internship management system, centralising around a User entity with common attributes like email and password. Derived entities such as Student_data, Faculty_profile, and HOD_profile extend the User base, indicating an inheritance relationship with additional fields specific to each role. Circular maintains records of messages with a function to delete old records, suggesting timely relevance. The StudentFacultyMapping connects students with faculty, including details like registration number, branch, and contact information. MyUploadedFiles links to the User, capturing a variety of document types and academic marks, indicating student progress. A Company entity contains details pertinent to internships offered, including stipend information, and Document and PrivateFile suggest a system of resource sharing and personal document storage, respectively. This design reflects a multifaceted, role-based system that facilitates both educational administration and internship management.

4.3. Use Case Diagram

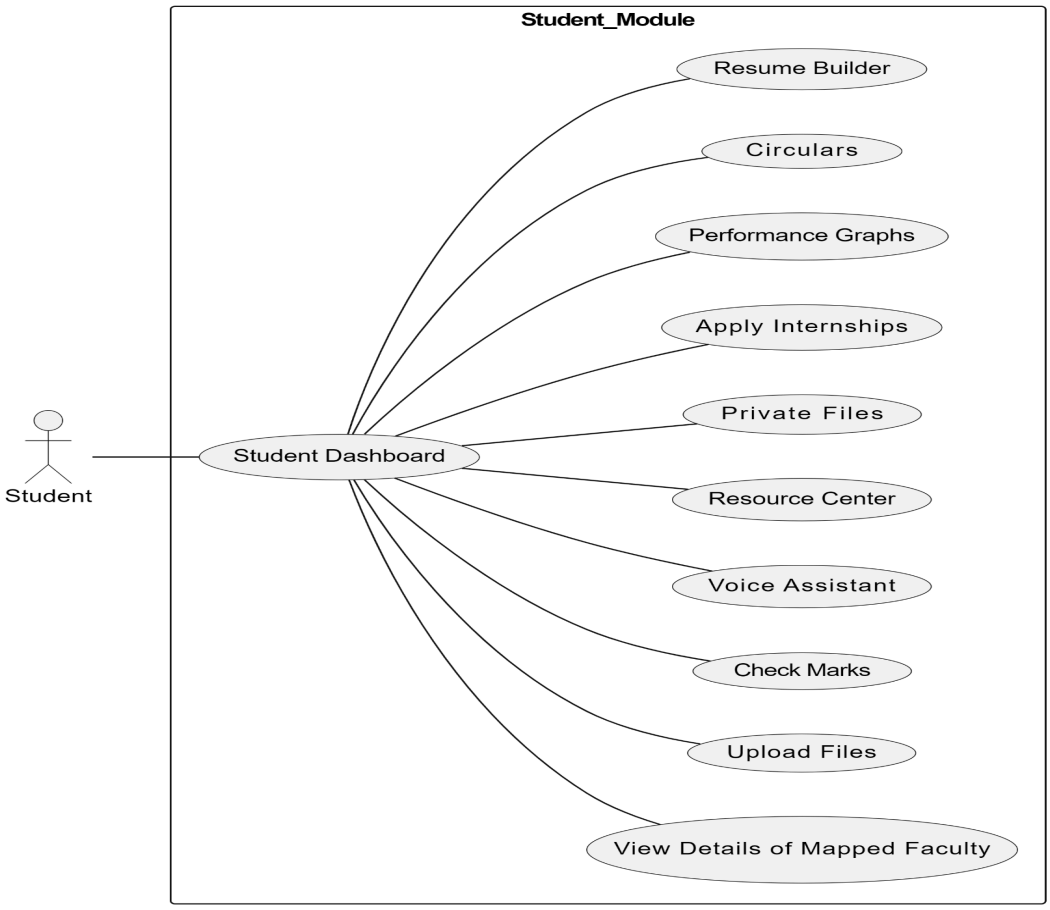


Fig-3: Student Use Case Diagram

The student module of the educational software system boasts a user-centric design, epitomised by the Student Dashboard. Through this central interface, students effortlessly engage with an array of essential features. The Resume Builder empowers students to craft compelling resumes, while Circulars keep them abreast of pertinent updates. Performance Graphs offer visual insights into academic progress, while Apply Internships streamlines internship pursuits. Private Files safeguard personal documents, and the Resource Center enriches learning with diverse materials. Voice Assistant introduces seamless interaction via speech recognition, and Check Marks provides instant academic feedback. Upload Files simplifies submission processes, while View Details of Mapped Faculty facilitates easy access to faculty information.

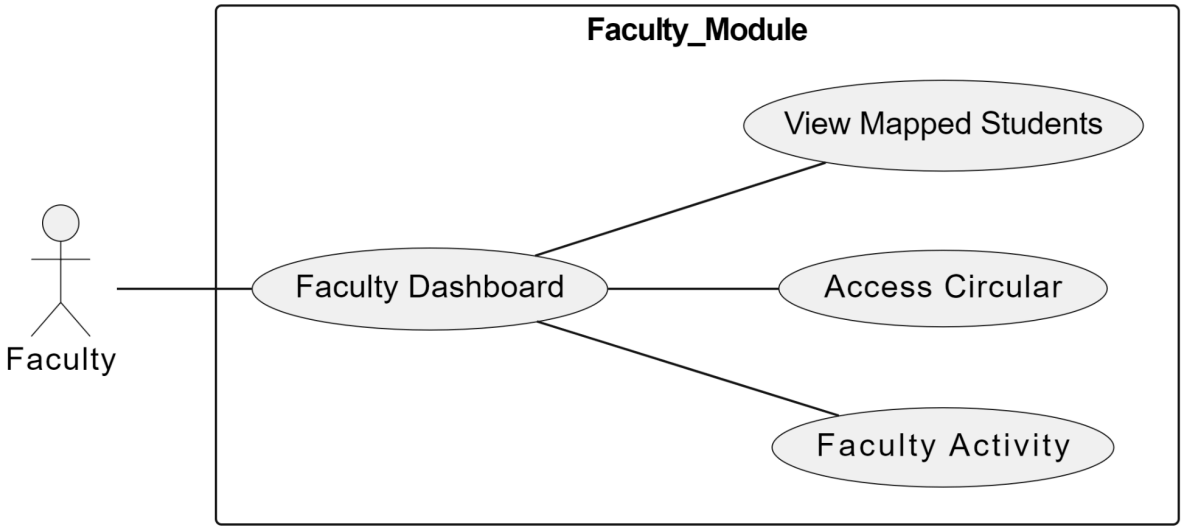


Fig-4: Faculty Use Case Diagram

The Faculty Module within the educational software system is ingeniously crafted around the Faculty Dashboard, a central hub for faculty interactions. Through this interface, faculty members effortlessly engage in core actions pivotal to their roles. 'View Mapped Students' offers insights into assigned students, crucial for monitoring academic progress and providing guidance. 'Access Circular' facilitates communication, ensuring faculty and students stay abreast of vital information and institutional updates. The 'Faculty Activity' feature enables efficient management of teaching schedules, research endeavours, and administrative tasks, enhancing productivity and time management. This user-focused design emphasises streamlined access to essential functionalities, minimising navigation complexities. The system's architecture prioritises a seamless workflow, empowering faculty members to concentrate on their primary responsibilities of teaching, research, and student support.

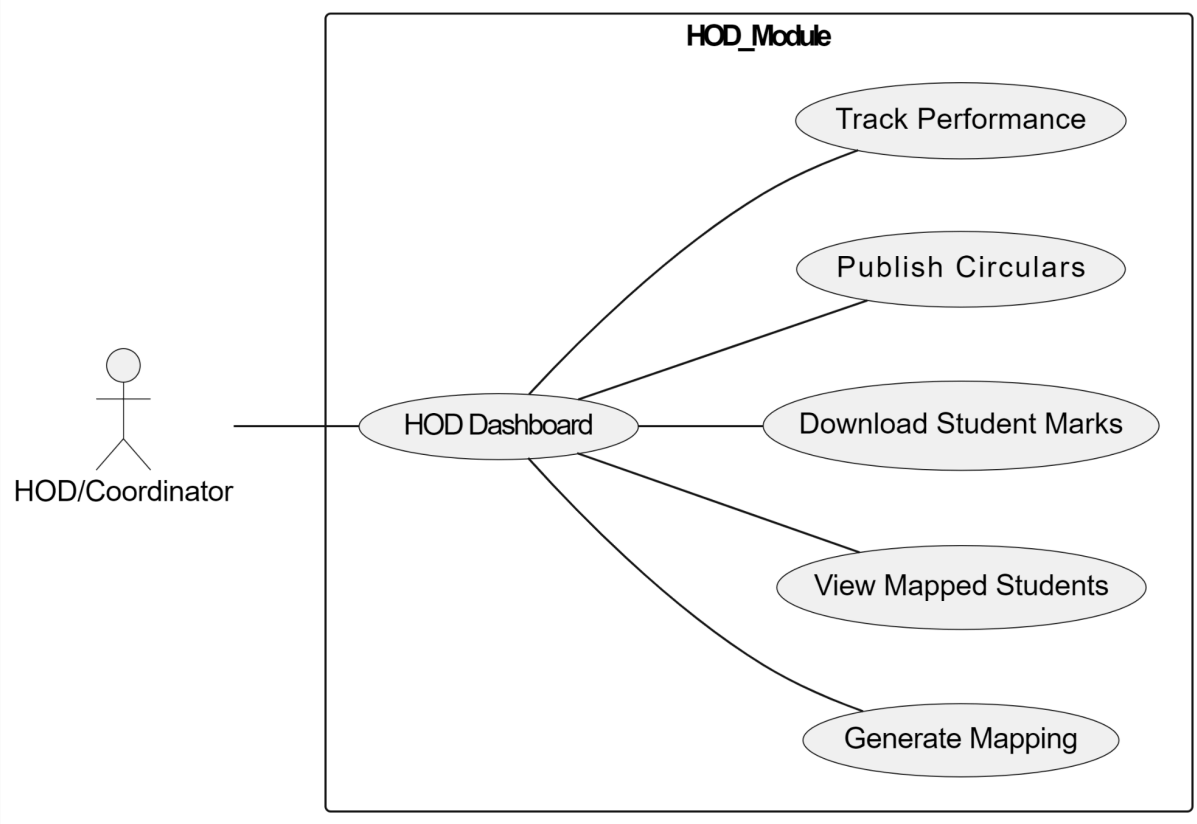


Fig-5: HOD Use Case Diagram

The use case diagram for the Head of Department (HOD) Module unveils a comprehensive array of functionalities tailored to streamline academic management and oversight. Central to this system is the HOD Dashboard, serving as the nucleus for departmental operations. The HOD's capabilities include 'Track Performance,' facilitating meticulous monitoring of faculty and potentially student progress to uphold educational standards and foster improvement. 'Publishing Circulars' empowers the HOD to disseminate crucial information, ensuring department-wide alignment with institutional objectives. 'Download Student Marks' offers insights into academic evaluations, enabling data-driven decision-making for curriculum refinement and student support strategies. 'Viewing Mapped Students' provides clarity on student-faculty relationships, while 'Generate Mapping' allows for strategic assignment adjustments, optimising student-faculty interactions for enhanced academic outcomes.

4.4. Sequence Diagram

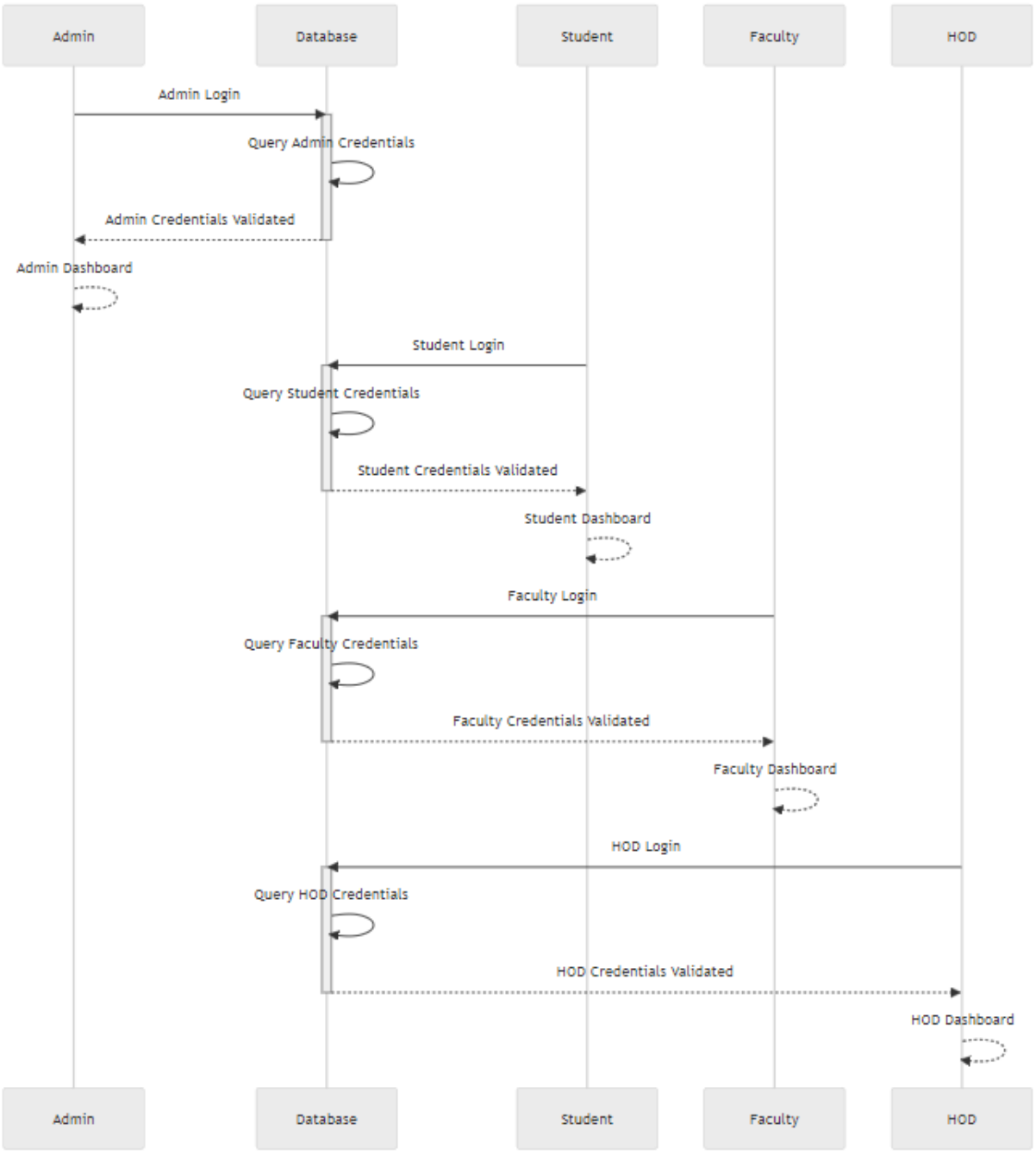


Fig-6: Sequence Diagram

The sequence diagram illustrates the login process for an Internship Management System with four types of users: Admin, Student, Faculty, and HOD. Each user type initiates a login procedure that queries the database for credentials validation. Upon successful validation, the respective user is directed to their specific dashboard. The process is sequential and role-specific, ensuring secure and role-appropriate access to the system's features. This setup highlights the system's emphasis on security and role-based access, where each user category interacts with the system in a similar yet distinct pathway, reflecting a clear and organised approach to user authentication and authorization.

4.5 Activity Diagram

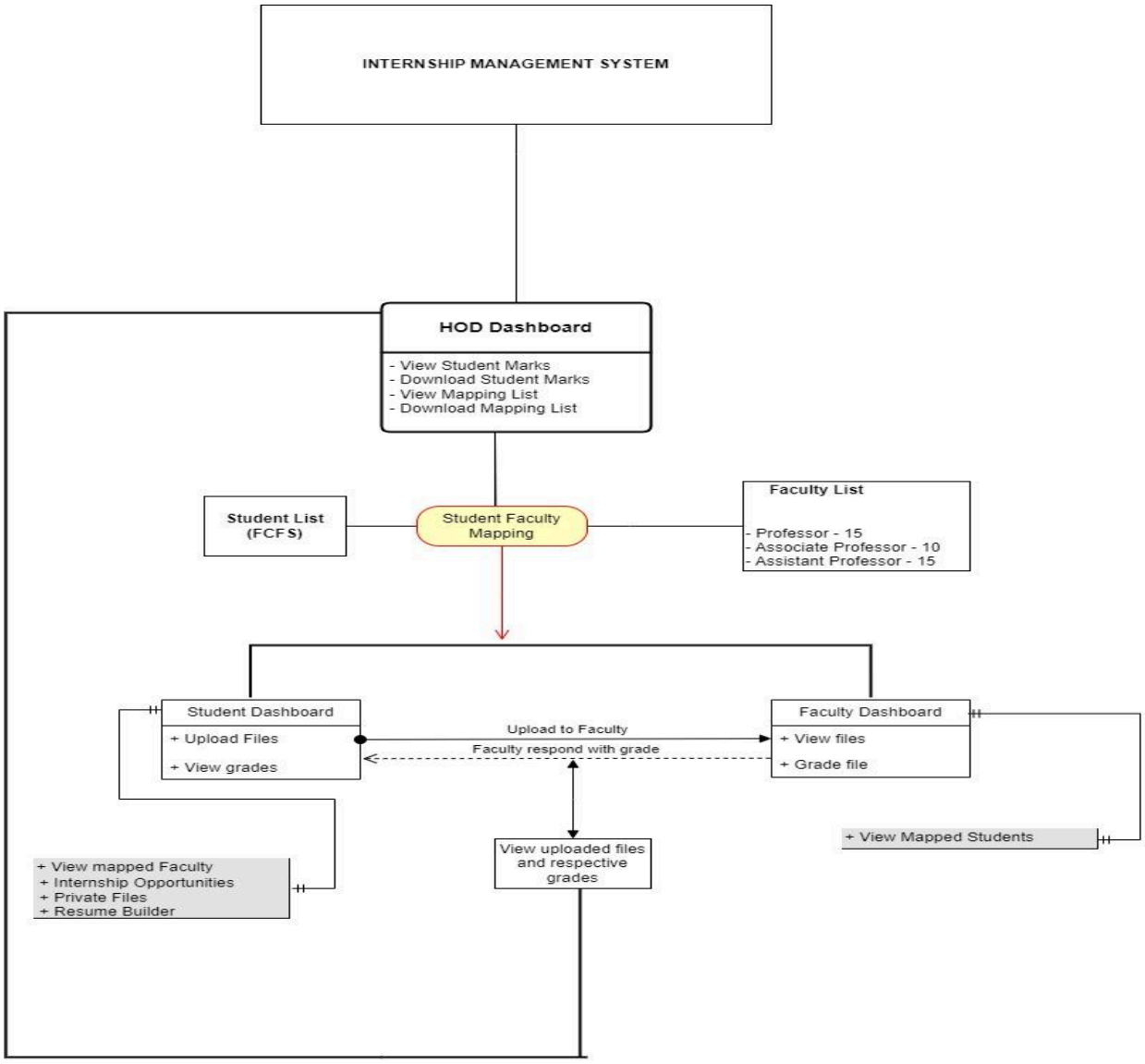


Fig-7: Activity Diagram

The activity diagram illustrates the Internship Management System's dynamic workflow, centred on interactions among the HOD, Student, and Faculty Dashboards. The HOD Dashboard oversees student marks and mappings, while the Student Dashboard facilitates file uploads, grade views, and access to resources. Faculty Dashboards enable grading and mentorship, with a hierarchical faculty structure ensuring balanced student loads. This bidirectional flow fosters structured internship management, emphasising administrative oversight, student engagement, and faculty involvement within a comprehensive system framework.

5. SYSTEM METHODOLOGY

5.1 Software Requirements

Operating System:	Windows, Macos, Linux.
Integrated Development Environment (IDE):	Pycharm IDE
Web Browser:	Google Chrome, Mozilla Firefox, Safari.
Frameworks and Libraries:	Django, Bootstrap, ChartJs.
Frontend Technologies:	HTML5, CSS3, JavaScript.
Testing Framework:	Selenium and coverage.
Version Control:	Github is used for collaboration and version control
Database Management System:	SQLite3 which is included with python by default for development.

5.2 Hardware Requirements

Processor (CPU):	Minimum: Dual-core processor Recommended: Quad-core processor or higher
Memory (RAM):	Minimum: 4GB RAM Recommended: 8GB RAM or higher
Storage:Minimum:	128 GB SSD or HDD Recommended: 256GB SSD or higher for better performance.
Display: Resolution:	1366x768 pixels or higher Recommended: Higher resolution for better user experience.

6. OVERVIEW OF TECHNOLOGIES

HTML5:

HTML is a fundamental technology used in the Internship Management System project for creating the structure and layout of web pages. It is used to define the elements and their organisation within the user interface of the system. HTML tags and attributes are employed to format text, insert images, create forms for user input, and establish hyperlinks to navigate between different pages. Additionally, HTML is instrumental in ensuring the accessibility and compatibility of the system across various web browsers and devices. Overall, HTML plays a crucial role in providing the visual representation and interactive functionality of the Internship Management System, enhancing the user experience and facilitating seamless navigation and interaction within the system.

CSS3:

CSS (Cascading Style Sheets) is utilised in the Internship Management System project to enhance the visual presentation and layout of the web pages. It is used to define the styling and formatting aspects of the system's user interface, including fonts, colours, backgrounds, spacing, and positioning of elements. CSS allows for consistent styling across multiple pages, ensuring a cohesive and professional appearance. It enables the customization of various components such as buttons, forms, tables, and navigation menus, enhancing the overall user experience and visual appeal of the system. By separating the presentation layer from the content layer, CSS simplifies maintenance and allows for easy updates and modifications to the system's design.

Python:

It is used extensively in the internship Management System project for backend development, data processing, and integration tasks. With Python's powerful and versatile capabilities, it serves as the programming language of choice for implementing the system's functionalities and logic. Python, along with the Django framework, allows for efficient database management, handling of user authentication and authorization, and seamless integration of different modules. It enables the development team to write clean and maintainable code, ensuring scalability and flexibility as the project evolves. Additionally, Python's rich ecosystem of libraries and frameworks supports various tasks, such as data analysis for student ratings, generating dynamic web pages, and managing APIs for third-party integrations

Bootstrap:

Bootstrap is utilised in the Internship Management System project to ensure responsive and visually appealing user interfaces. By leveraging Bootstrap's framework, the project's web pages are developed with pre-built CSS styles and components that facilitate consistent and professional-looking designs. Bootstrap's grid system enables the responsive layout of elements across different devices and screen sizes, ensuring an optimal user experience. Additionally, the extensive collection of ready-to-use components, such as navigation bars, forms, buttons, and modals, simplifies the development process and enhances the overall aesthetics of the system. The utilisation of Bootstrap in the project helps to create a user-friendly and visually appealing interface that adapts seamlessly to various devices, enhancing usability and accessibility.

SQLite3:

SQLite3 is used in the Internship Management System project as the database management system. It serves as a reliable and lightweight solution for storing and managing data related to student ratings, academic calendars, timetables, and other essential information. By leveraging SQLite3, the system can efficiently organise and retrieve data, ensuring seamless access and retrieval for users.

The integration of SQLite3 offers several benefits for the project. Firstly, it provides a self-contained, serverless architecture, eliminating the need for complex database setup and administration. This simplifies the deployment process and reduces maintenance overhead. Secondly, SQLite3 supports ACID (Atomicity, Consistency, Isolation, Durability) properties, ensuring data integrity and reliability. This ensures that data modifications occur in a consistent and secure manner, minimising the risk of data corruption. Overall, SQLite3 serves as a robust and efficient database solution for the Internship Management System project, enabling smooth data management and retrieval operations

JavaScript :

JavaScript plays a significant role in enhancing the functionality and interactivity of the Internship Management System project. It is used to create dynamic and responsive web pages, providing a seamless user experience. For instance, JavaScript can be used to validate form inputs, ensuring that users provide accurate and appropriate information when submitting feedback or registering for events. It enables real-time validation, such as checking for required fields, email formats, or password strength, thus improving data accuracy and reducing errors.

7. IMPLEMENTATION

7.1. Features

7.1.1 Internship Opportunities

This feature allows users to apply for internships using a simple and intuitive interface. Internship opportunities are displayed as cards, each containing key details. These details are sourced from a CSV file, ensuring the information is up-to-date and easily manageable.

Key Features:

- ➢ Card-based Interface: Internship details are presented in a visually appealing card format, making it easy for users to browse and select opportunities.
- ➢ CSV Integration: Internship data is sourced from a CSV file, enabling seamless updates and management of internship listings.
- ➢ Apply Functionality: Users can easily apply for internships by clicking on the respective card initiating the application process.
- ➢ Search and Filter: Users can search for specific internships or filter based on criteria such as location, duration, or field of study, enhancing the user experience.

How It Works:

- ➢ Browse Internships: Users can view available internships displayed as cards on the platform.
- ➢ Select an Internship: Users can click on a card to view detailed information about the internship.
- ➢ Apply: To apply, users simply click the "Apply" button on the card, which initiates the application process.
- ➢ Track Application: Once applied, users can track the status of their application through the platform.

7.1.2 Circulars from Faculty and HOD to Students

This feature facilitates seamless communication of circulars from Heads of Departments (HODs) and faculty members to students. This system enhances the dissemination of important information, ensuring that students are well-informed about academic and administrative matters

Key Features:

- ➢ Circular Generation: HODs and faculty members can easily create and distribute circulars to students through the system.
- ➢ Notification Alerts: Students receive real-time alerts about new circulars, ensuring timely communication.
- ➢ Access Control: Circulars are accessible only to authorized users (HODs, faculty, and students) upon logging into the Internship Management System.
- ➢ Archived Circulars: Circulars are archived for future reference, allowing users to access past circulars as needed.

How It Works:

- ➢ Circular Creation: HODs and faculty members can compose circulars using a user-friendly interface within the system.
- ➢ Distribution: Once created, circulars are distributed to students through the system's notification system.
- ➢ Notification: Students receive a notification alert on their dashboard and, if enabled, via SMS about the new circular.
- ➢ Access: Students can access the circulars by logging into the Internship Management System and viewing the circulars section.

7.1.3 View Marks

This feature allows Heads of Departments (HODs) and faculty members to view students' marks in a tabular format. This feature provides a comprehensive overview of student performance, including week-wise marks from week 1 to week 8, PPT marks, report marks, and final marks. Additionally, the system calculates the average marks for each student, facilitating easy assessment of their progress.

Key Features:

- ➢ Tabular Display: Marks are displayed in a structured table format, making it easy to compare and analyse student performance.
- ➢ Week-wise Marks: The table includes columns for week 1 to week 8, showing the marks obtained by each student for each week.
- ➢ PPT and Report Marks: Additional columns display the marks obtained by students for their presentations (PPT) and reports.
- ➢ Final Marks: The table includes a column for the final marks obtained by each student, which is calculated based on the week-wise, PPT, and report marks.
- ➢ Average Marks Calculation: The system automatically calculates and displays the average marks for each student, providing a quick summary of their performance.

How It Works:

- ➢ Accessing the Feature: HODs and faculty members can access the "View Marks" feature from the dashboard or a dedicated section within the system.
- ➢ Selecting a Student: Users can select a specific student by clicking on his roll number to view their marks.
- ➢ Viewing the Table: The system displays a table showing the week-wise marks, PPT marks, report marks, final marks, and average marks for the selected student(s).
- ➢ Analysing Performance: Users can analyze the performance of the selected student(s) based on the marks displayed in the table.

7.1.4 Performance Visualisation Dashboard

This feature includes a comprehensive data visualisation dashboard allowing Heads of Departments (HODs) and students to visualise performance using bar and line graphs. This feature enhances the understanding of student progress and facilitates data-driven decision-making.

Key Features:

- ➢ Bar Graphs: Bar graphs are used to represent the performance of students in different assessment categories, such as week-wise marks, PPT marks, report marks, and final marks. Each bar represents an individual student's performance, allowing for easy comparison. Line Graphs: Line graphs are used to track the progress of individual students over time, showing their performance from week 1 to week 8. This provides a visual representation of student improvement or decline throughout the internship.
- ➢ Interactive Dashboard: The dashboard is interactive, allowing users to select specific students or assessment categories to view. This flexibility enables users to focus on specific areas of interest.
- ➢ Data Visualization: The dashboard uses data visualisation techniques to present complex information in a clear and understandable format. This helps users quickly identify trends and patterns in student performance.

How it Works:

- ➢ Accessing the Dashboard: HODs and students can access the data visualisation dashboard from the menu of their individual dashboards.
- ➢ Selecting Parameters: Users can select the parameters they want to visualise, such as specific students, assessment categories, or time periods.
- ➢ Viewing Graphs: The dashboard displays the data in the form of bar graphs and line graphs, providing a visual representation of student performance.
- ➢ Analysing Performance: Users can analyse the graphs to gain insights into student performance trends and make informed decisions based on the data.

7.1.5 Resource Centre

The IMS includes a comprehensive resource centre designed to provide students with access to various technical documentations across different domains. This feature serves as a digital library, offering students a wide range of resources to enhance their understanding and skills in specific areas of interest.

Key Features:

- ➢ Domain-specific Categories: Documentations are organised into domain-specific categories, making it easy for students to navigate and find relevant resources.
- ➢ Technical Documentations: The resource centre includes a variety of technical documentations, such as guides, tutorials, manuals, and reference materials, covering a wide range of topics and subjects.

How It Works:

- ➢ Accessing the Resource Center: Students can access the resource centre from the main menu of the Internship Management System.
- ➢ Browsing Categories: Users can browse through domain-specific categories to explore the available documentations.
- ➢ Searching for Documents: Students can use the search functionality to find specific documents by entering keywords or applying filters.

7.1.6 Private Files

Our system includes a feature that allows students to securely upload and store various documents, such as resumes, cover letters, internship agreements, and other files in PDF, Word, and other formats. This feature gives students a centralised and private space to manage their important documents throughout their internship journey.

Key Features:

- ➢ Document Upload: Students can easily upload documents from their devices, including resumes, cover letters, internship agreements, and any other relevant files.
- ➢ File Formats: Supports a variety of file formats, including PDF, Word, and others, ensuring compatibility with different types of documents.
- ➢ Centralised Storage: Provides students with a centralised location to store and manage all their important documents, ensuring easy access when needed.
- ➢ Privacy and Security: Ensures the privacy and security of student documents by providing access only to that student and other students cannot access the files uploaded by another.

How It Works:

- ➢ Uploading Documents: Students can upload documents by selecting the file from their device and uploading it to their private storage space.
- ➢ Accessing Documents: Students can access their uploaded documents anytime, anywhere, using the Internship Management System.

7.1.7 Resume Builder Tool

Our system includes a user-friendly resume-building tool to help students create professional resumes based on their internship experiences. This feature streamlines the resume creation process, allowing students to highlight their skills, experiences, and achievements effectively.

Key Features:

- ➢ Easy-to-Use Interface: The resume builder tool features an intuitive interface that guides students through the resume creation process step by step.
- ➢ Sections for Internship Details: Includes specific sections for students to detail their internship experiences, including the internship title, duration, responsibilities, and achievements.
- ➢ Skills and Achievements Highlight: Allows students to highlight their skills and achievements gained during their internship, showcasing their relevant experience to potential employers. Download and Print Options: Provides options to download the completed resume in PDF or other formats, making it easy for students to share their resumes with potential employers or print them for interviews.

How It Works:

- ➢ Entering Personal Information: Students enter their personal information, such as name, contact details, and career objective.
- ➢ Adding Internship Details: Students add details about their internship experiences, including the internship title, duration, responsibilities, and achievements.
- ➢ Highlighting Skills and Achievements: Students highlight their skills and achievements gained during their internship, emphasising their relevance to the desired job position. Downloading or Printing the Resume: Once completed, students can download the resume in PDF or other formats or print it directly for submission or sharing.

7.1.8 Voice Assistant Feature

The Voice Assistant feature in the Internship Management System enhances user interaction by enabling students to control their dashboard using voice commands. By leveraging Speech Recognition, Pyttsx3, and PyAudio libraries, this feature converts spoken language into text, processes user commands, and provides spoken responses, thereby improving accessibility, user experience, and overall efficiency.

Key Features:

- ➢ Speech Recognition: Utilises a library for converting spoken language into text, allowing the system to understand user commands.
- ➢ Pyttsx3: Implements a text-to-speech conversion library, enabling the system to provide spoken feedback or responses to user commands.
- ➢ PyAudio: Facilitates audio input/output handling, managing microphone input and speaker output for real-time interaction with the voice assistant feature.

How it Works:

- ➢ Initialization: Upon accessing the student dashboard, the voice assistant feature initialises, activating the microphone for user input.
- ➢ Speech Recognition: When the user speaks a command, the Speech Recognition library converts the speech into text, allowing the system to interpret the user's request.
- ➢ Command Processing: The system processes the recognized text to determine the intended action or feature requested by the user.
- ➢ Response Generation: Using the Pyttsx3 library, the system generates a spoken response or feedback corresponding to the user's command.
- ➢ Execution: Upon receiving confirmation or additional input from the user, the system executes the requested action, updating the dashboard accordingly.
- ➢ Feedback: The system provides audible feedback to confirm the execution of the command or to prompt the user for further interaction.

7.2. Coding

```python
def main_dashboard(request):
    if request.method == "POST":
        email = request.POST.get("email")
        password = request.POST.get("password")

        # Check if it's a student login
        try:
            student = Student_data.objects.get(email=email, password=password)
            try:
                mapping = StudentFacultyMapping.objects.get(student_email=student.email)
                faculty_name = mapping.faculty_name
                faculty_email = mapping.faculty_email
                faculty_phone = mapping.faculty_phone
                student_name = mapping.student_name
                return render(request, "student_dashboard.html", {
                    "email": email,
                    "faculty_name": faculty_name,
                    "faculty_email": faculty_email,
                    "faculty_phone": faculty_phone,
                    "student_name": student_name,
                })
            except StudentFacultyMapping.DoesNotExist:
                error_message = "Student has no faculty mapping"
                return render(request, "Student_Login.html", {"error_message": error_message})
        except Student_data.DoesNotExist:
```

Fig 8: Logic for Main Dashboard

```python
def generate_mapping_excel(request):
    if request.method == 'POST':
        faculty_file = request.FILES.get('faculty_file')
        student_file = request.FILES.get('student_file')

        if faculty_file and student_file:
            faculty_wb = openpyxl.load_workbook(faculty_file)
            faculty_sheet = faculty_wb.active

            student_wb = openpyxl.load_workbook(student_file)
            student_sheet = student_wb.active

            mapping = {'Professor': 15, 'Associate Professor': 15, 'Asst.Prof': 10, 'HOD': 15}
            faculty_mapping = {}

            faculty_rows = list(faculty_sheet.iter_rows(values_only=True))
            student_rows = list(student_sheet.iter_rows(values_only=True))

            faculty_rows.pop(0)  # Remove header row
            student_rows.pop(0)  # Remove header row

            for faculty_row in faculty_rows:
                designation = faculty_row[4]
                if designation in mapping:
                    num_students = mapping[designation]
```

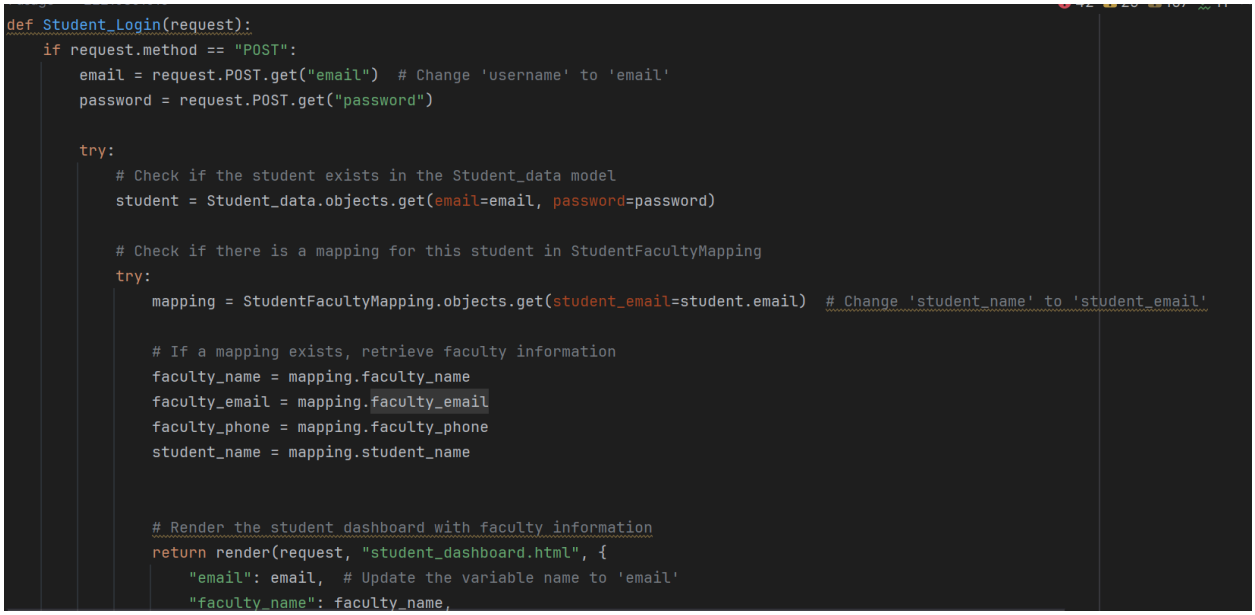
Fig 9: Logic for Student-Faculty Mapping

```python
def download_mapped_excel(request):
    # Retrieve data from the StudentFacultyMapping model
    mapping_data = StudentFacultyMapping.objects.all()

    # Prepare Excel data
    mapped_wb = openpyxl.Workbook()
    mapped_sheet = mapped_wb.active
    mapped_sheet.append(
        ['S.No', 'Registration Number', 'Name', 'Branch/Specialization', 'Student Email', 'Faculty Name',
         'Faculty Email', 'Faculty Phone'])

    for index, entry in enumerate(mapping_data, start=1):
        mapped_sheet.append([
            index,
            entry.student_registration_number,
            entry.student_name,
            entry.student_branch,
            entry.student_email,
            entry.faculty_name,
            entry.faculty_email,
            entry.faculty_phone
        ])

    excel_response = HttpResponse(content_type='application/vnd.openxmlformats-officedocument.spreadsheetml.sheet')
```

Fig 10: Logic for Downloading Mapped Data

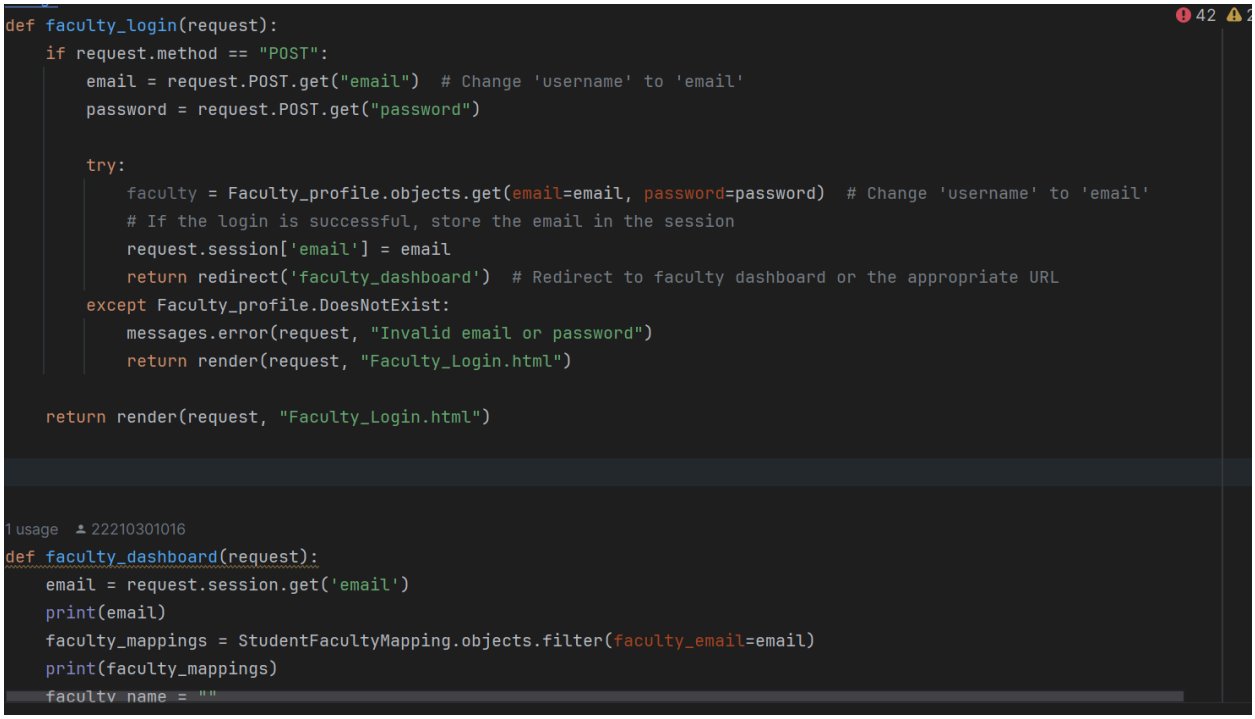
```python
2 usages  22210301016
def faculty_files_view(request):
    files = MyUploadedFiles.objects.all()
    return render(request, 'faculty_files_view.html', {'files': files})


1 usage  22210301016
def faculty_activities(request, roll_number):
    files = MyUploadedFiles.objects.filter(roll_number=roll_number)
    return render(request, 'faculty_activities.html', {'files': files})


1 usage  22210301016
def hod_activities(request,roll_number):
    files = MyUploadedFiles.objects.filter(roll_number=roll_number)
    return render(request, 'hod_activities.html', {'files': files})

from .models import MyUploadedFiles
```

Fig 11: Logic for Activities



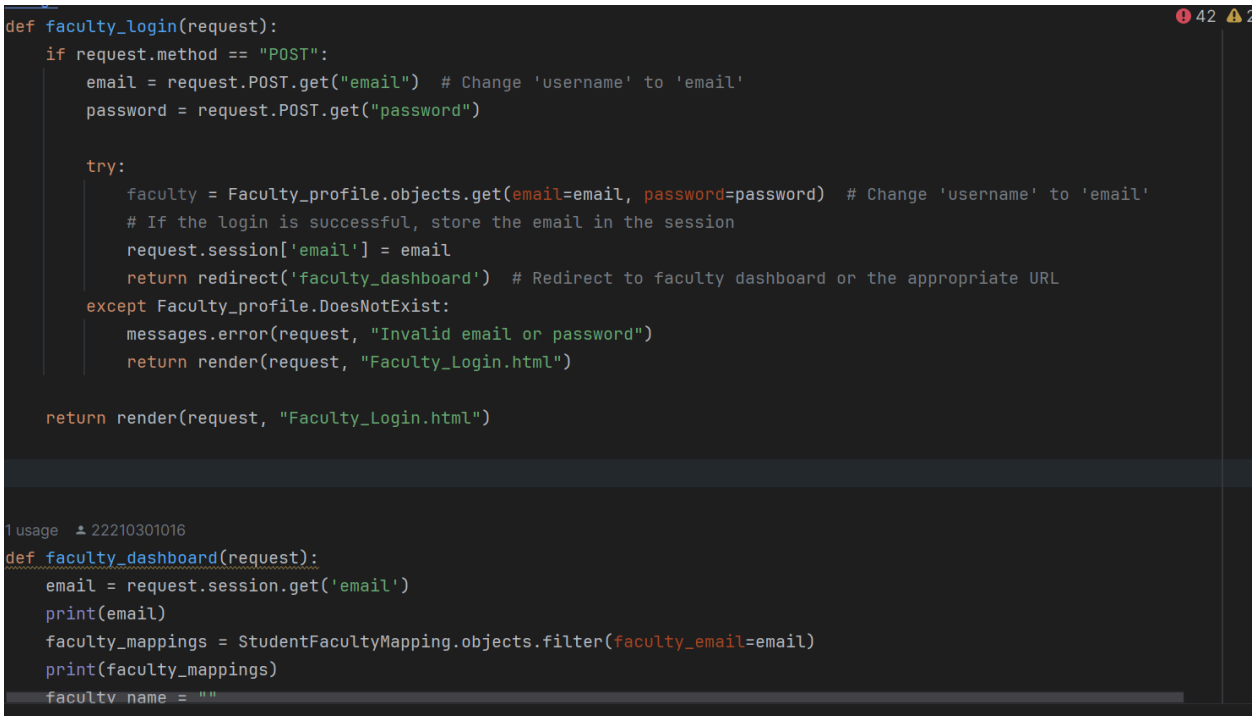
```python
def Student_Login(request):
    if request.method == "POST":
        email = request.POST.get("email")  # Change 'username' to 'email'
        password = request.POST.get("password")

        try:
            # Check if the student exists in the Student_data model
            student = Student_data.objects.get(email=email, password=password)

            # Check if there is a mapping for this student in StudentFacultyMapping
            try:
                mapping = StudentFacultyMapping.objects.get(student_email=student.email)  # Change 'student_name' to 'student_email'

                # If a mapping exists, retrieve faculty information
                faculty_name = mapping.faculty_name
                faculty_email = mapping.faculty_email
                faculty_phone = mapping.faculty_phone
                student_name = mapping.student_name


                # Render the student dashboard with faculty information
                return render(request, "student_dashboard.html", {
                    "email": email,  # Update the variable name to 'email'
                    "faculty_name": faculty_name,
```

Fig 12: Logic for Student Login



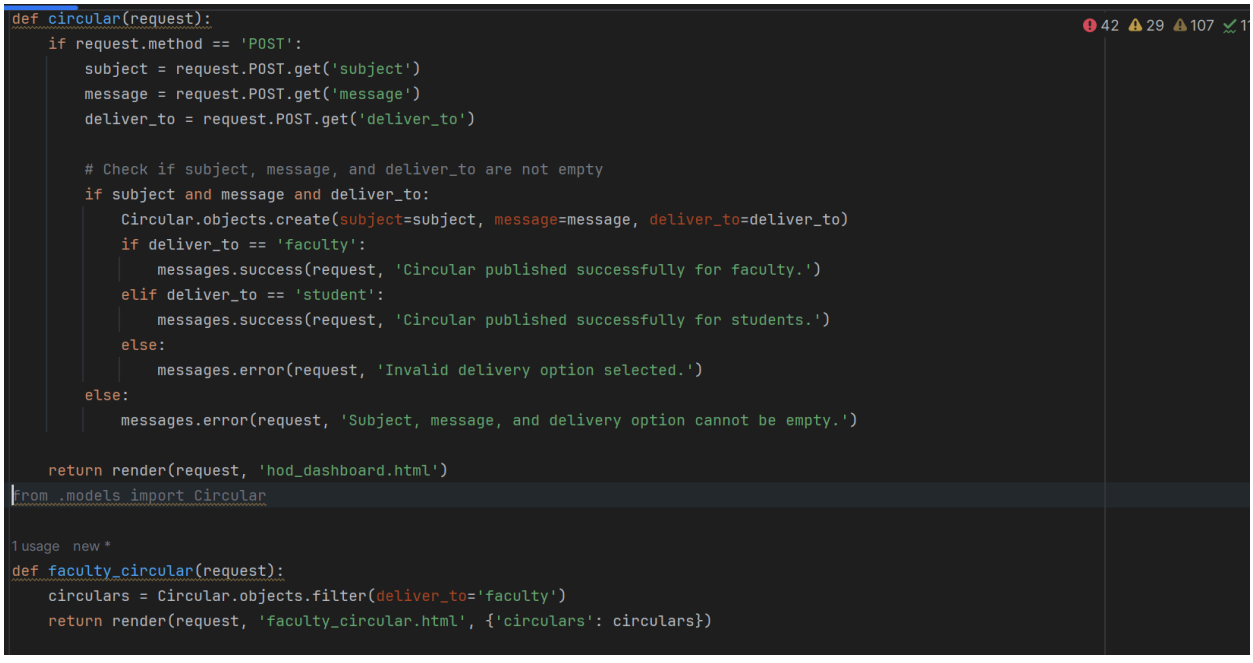
```python
def faculty_login(request):
    if request.method == "POST":
        email = request.POST.get("email")  # Change 'username' to 'email'
        password = request.POST.get("password")

        try:
            faculty = Faculty_profile.objects.get(email=email, password=password)  # Change 'username' to 'email'
            # If the login is successful, store the email in the session
            request.session['email'] = email
            return redirect('faculty_dashboard')  # Redirect to faculty dashboard or the appropriate URL
        except Faculty_profile.DoesNotExist:
            messages.error(request, "Invalid email or password")
            return render(request, "Faculty_Login.html")

    return render(request, "Faculty_Login.html")


1 usage  22210301016
def faculty_dashboard(request):
    email = request.session.get('email')
    print(email)
    faculty_mappings = StudentFacultyMapping.objects.filter(faculty_email=email)
    print(faculty_mappings)
    faculty_name = ""
```

Fig 13: Logic for Faculty Login



```
def faculty_login(request):
    if request.method == "POST":
        email = request.POST.get("email")  # Change 'username' to 'email'
        password = request.POST.get("password")

        try:
            faculty = Faculty_profile.objects.get(email=email, password=password)  # Change 'username' to 'email'
            # If the login is successful, store the email in the session
            request.session['email'] = email
            return redirect('faculty_dashboard')  # Redirect to faculty dashboard or the appropriate URL
        except Faculty_profile.DoesNotExist:
            messages.error(request, "Invalid email or password")
            return render(request, "Faculty_Login.html")

    return render(request, "Faculty_Login.html")


1 usage  22210301016
def faculty_dashboard(request):
    email = request.session.get('email')
    print(email)
    faculty_mappings = StudentFacultyMapping.objects.filter(faculty_email=email)
    print(faculty_mappings)
    faculty_name = ""
```

Fig 14: Logic for Hod Login



```
def circular(request):
    if request.method == 'POST':
        subject = request.POST.get('subject')
        message = request.POST.get('message')
        deliver_to = request.POST.get('deliver_to')

        # Check if subject, message, and deliver_to are not empty
        if subject and message and deliver_to:
            Circular.objects.create(subject=subject, message=message, deliver_to=deliver_to)
            if deliver_to == 'faculty':
                messages.success(request, 'Circular published successfully for faculty.')
            elif deliver_to == 'student':
                messages.success(request, 'Circular published successfully for students.')
            else:
                messages.error(request, 'Invalid delivery option selected.')
        else:
            messages.error(request, 'Subject, message, and delivery option cannot be empty.')

    return render(request, 'hod_dashboard.html')
from .models import Circular

1 usage  new *
def faculty_circular(request):
    circulars = Circular.objects.filter(deliver_to='faculty')
    return render(request, 'faculty_circular.html', {'circulars': circulars})
```

Fig 15: Logic for Faculty Circular

```python
def update_marks(request, file_id):
    if request.method == 'POST':
        file = get_object_or_404(MyUploadedFiles, pk=file_id)
        marks1 = float(request.POST.get('marks1', 0))  # Get marks1 as a float (default to 0 if not provided)
        marks2 = float(request.POST.get('marks2', 0))  # Get marks2 as a float (default to 0 if not provided)
        marks3 = float(request.POST.get('marks3', 0))  # Get marks3 as a float (default to 0 if not provided)
        marks4 = float(request.POST.get('marks4', 0))  # Get marks4 as a float (default to 0 if not provided)
        marks5 = float(request.POST.get('marks5', 0))  # Get marks5 as a float (default to 0 if not provided)
        marks6 = float(request.POST.get('marks6', 0))  # Get marks6 as a float (default to 0 if not provided)
        marks7 = float(request.POST.get('marks7', 0))  # Get marks7 as a float (default to 0 if not provided)
        marks8 = float(request.POST.get('marks8', 0))  # Get marks8 as a float (default to 0 if not provided)

        # Calculate the average marks
        total_marks = marks1 + marks2 + marks3 + marks4 + marks5 + marks6 + marks7 + marks8
        total_reviews = 8  # Assuming there are 8 reviews, update this number accordingly

        if total_reviews > 0:
            average_marks = total_marks / total_reviews
        else:
            average_marks = 0.0  # Avoid division by zero

        # Update the review fields and average marks in the file object
        file.marks1 = marks1
        file.marks2 = marks2
        file.marks3 = marks3
        file.marks4 = marks4
```

Fig 16: Logic for Update Marks

```python
from django.contrib import messages
from .models import Circular

22210301016 *
def circular(request):
    if request.method == 'POST':
        subject = request.POST.get('subject')
        message = request.POST.get('message')
        deliver_to = request.POST.get('deliver_to')

        # Check if subject, message, and deliver_to are not empty
        if subject and message and deliver_to:
            Circular.objects.create(subject=subject, message=message, deliver_to=deliver_to)
            if deliver_to == 'faculty':
                messages.success(request, 'Circular published successfully for faculty.')
            elif deliver_to == 'student':
                messages.success(request, 'Circular published successfully for students.')
            else:
                messages.error(request, 'Invalid delivery option selected.')
        else:
            messages.error(request, 'Subject, message, and delivery option cannot be empty.')

    return render(request, 'hod_dashboard.html')
```

Fig 17: Logic for Circular

```python
from django.shortcuts import render
from .models import MyUploadedFiles

1 usage  22210301016
def student_performance(request):
    if request.method == 'POST':
        roll_number = request.POST.get('roll_number')
        student_files = MyUploadedFiles.objects.filter(roll_number=roll_number).first()
        if student_files:
            marks = [
                student_files.marks1,
                student_files.marks2,
                student_files.marks3,
                student_files.marks4,
                student_files.marks5,
                student_files.marks6,
                student_files.marks7,
                student_files.marks8
            ]
            return render(request, 'performance.html', {'marks': marks})
        else:
            return render(request, 'performance.html', {'error_message': 'Student not found.'})
    else:
        return render(request, 'performance.html')
```

Fig 18: Logic for Student Performance

```python
1 usage  22210301016
def student_private_files(request, email):
    student_mapping = StudentFacultyMapping.objects.get(student_email=email)

    if request.method == 'POST' and request.FILES.getlist('file'):
        for uploaded_file in request.FILES.getlist('file'):
            private_file = PrivateFile(file=uploaded_file, student_mapping=student_mapping)
            private_file.save()

    files = PrivateFile.objects.filter(student_mapping=student_mapping)

    return render(request, 'student_private_files.html', {'files': files, 'email': email})



2 usages  22210301016
def download_file(request, file_id):
    file = get_object_or_404(PrivateFile, id=file_id)
    response = HttpResponse(file.file, content_type='application/octet-stream')
    response['Content-Disposition'] = f'attachment; filename="{file.file.name}"'
    return response
```

Fig 19: Logic for Private Files

```python
from django.shortcuts import render, redirect
from .models import Document

1 usage  22210301016
def resource_center(request):
    if request.method == 'POST':
        # Handle the case where a document link is clicked
        document_id = request.POST.get('document_id')
        document = Document.objects.get(pk=document_id)
        return redirect(document.link)

    # Fetch all documents
    documents = Document.objects.all()

    # Organize documents by domain
    organized_documents = {}
    for document in documents:
        if document.domain not in organized_documents:
            organized_documents[document.domain] = []
        organized_documents[document.domain].append(document)

    return render(request, 'resource_center.html', {'organized_documents': organized_documents})
```

Fig 20: Logic for Resource Center

```python
def resume_builder(request):
    return render(request, 'resume_builder.html')
```

Fig 21: Logic for Resume Builder

```python
def circular(request):
    if request.method == 'POST':
        subject = request.POST.get('subject')
        message = request.POST.get('message')
        deliver_to = request.POST.get('deliver_to')

        # Check if subject, message, and deliver_to are not empty
        if subject and message and deliver_to:
            Circular.objects.create(subject=subject, message=message, deliver_to=deliver_to)
            if deliver_to == 'faculty':
                messages.success(request, 'Circular published successfully for faculty.')
            elif deliver_to == 'student':
                messages.success(request, 'Circular published successfully for students.')
            else:
                messages.error(request, 'Invalid delivery option selected.')
        else:
            messages.error(request, 'Subject, message, and delivery option cannot be empty.')

    return render(request, 'hod_dashboard.html')

from .models import Circular
1 usage  new *
def student_circular(request):
    circulars=Circular.objects.filter(deliver_to='student')
    return render(request,'dashboard.html',{'circulars':circulars})
```

Fig 22: Logic for Student Circular

```python
import speech_recognition as sr
import pyttsx3
from django.urls import reverse

1 usage  22210301016
def speech_recognition_and_execution(request):
    22210301016
    def say(text):
        engine = pyttsx3.init()
        engine.say(text)
        engine.runAndWait()

    22210301016
    def take_command():
        r = sr.Recognizer()
        with sr.Microphone() as source:
            r.pause_threshold = 0.6
            audio = r.listen(source)
            try:
                print("recognizing.........")
                query = r.recognize_google(audio, language="en-in")
                print(f"user said: {query}")
                return query.lower()
            except Exception as e:
                return "some Error has been occurred please wait for some time"
```

Fig 23: Logic for Speech Recognition

7.3. Testing Methodology

7.3.1 Introduction to Coverage Testing

Code coverage is a crucial metric in software development, providing insight into the effectiveness of testing efforts. It measures the percentage of code executed during testing, highlighting areas that require additional testing. By identifying untested code, coverage tools help improve software quality and reduce the risk of undetected bugs in production.

7.3.2 Getting Started with Coverage.py

Coverage.py is a widely used tool for measuring code coverage in Python projects. To begin using Coverage.py, start by installing it using pip. Once installed, you can use it from the command line interface, with options to specify the coverage settings and commands. Basic usage involves running tests with coverage using the `coverage run` command.

7.3.3 Running Tests with Coverage

Running tests with coverage involves executing your test suite while Coverage.py monitors the code execution. This process generates coverage data, which can be analysed to assess the effectiveness of the tests. Coverage options allow for customization of the coverage measurement process, including configuration files to define coverage settings.

7.3.4 Analysing Coverage Reports

Coverage reports provide a detailed breakdown of code coverage, typically in text, HTML, or XML formats. These reports highlight which parts of the code were executed during testing and which were not. Analysing coverage data helps identify areas of the codebase that need additional testing, guiding developers in improving test coverage.

7.3.5 Advanced Usage and Tips

Advanced features of Coverage.py include support for measuring coverage of specific branches, excluding files or directories from coverage analysis, and generating coverage reports in various

formats. Tips for improving code coverage include focusing on critical code paths, writing targeted tests for edge cases, and using mocking and stubbing techniques effectively. coverage tools such as Coverage.py play a vital role in ensuring the quality and reliability of software applications. By measuring code coverage and analysing coverage reports, developers can identify areas for improvement, increase test coverage, and deliver higher-quality software to users.

7.3.6 Introduction to Selenium Testing

Selenium is a powerful automation tool commonly used for web application testing. Its ability to automate browser interactions makes it invaluable for testing web applications across different browsers and platforms. Selenium enables testers to simulate user interactions with web elements, validate application behaviour, and identify defects early in the development cycle.

7.3.7 Selenium WebDriver

Selenium WebDriver is the primary component of Selenium, providing a programming interface for interacting with web browsers. It supports multiple programming languages, such as Python, Java, and JavaScript, making it accessible to many developers. Setting up WebDriver involves installing the necessary drivers for different browsers and configuring the WebDriver environment.

7.3.8 Writing Selenium Tests

Writing Selenium tests involves creating test scripts using the WebDriver API to simulate user interactions with web elements. Test scripts typically include commands to locate elements on web pages using various locators (e.g., ID, class, XPath) and perform actions such as clicking buttons, entering text, and submitting forms. Best practices ensure that Selenium tests are maintainable, reliable, and scalable.

7.3.9 Handling Elements and Interaction

Effective test automation with Selenium requires robust handling of web elements and interactions. Test scripts should employ strategies to locate elements reliably and perform actions accurately across different browsers and environments. Handling interactions such as pop-ups, alerts, and frames requires specialised techniques to ensure seamless test execution.

7.3.10 Advanced Selenium Techniques

Advanced Selenium techniques include working with dynamic elements that change dynamically during test execution and implementing waits to handle asynchronous behaviour. Using the Page Object Model (POM) improves test organisation and maintenance by encapsulating page-specific elements and interactions into reusable components. These techniques enhance test stability and maintainability in complex web applications.

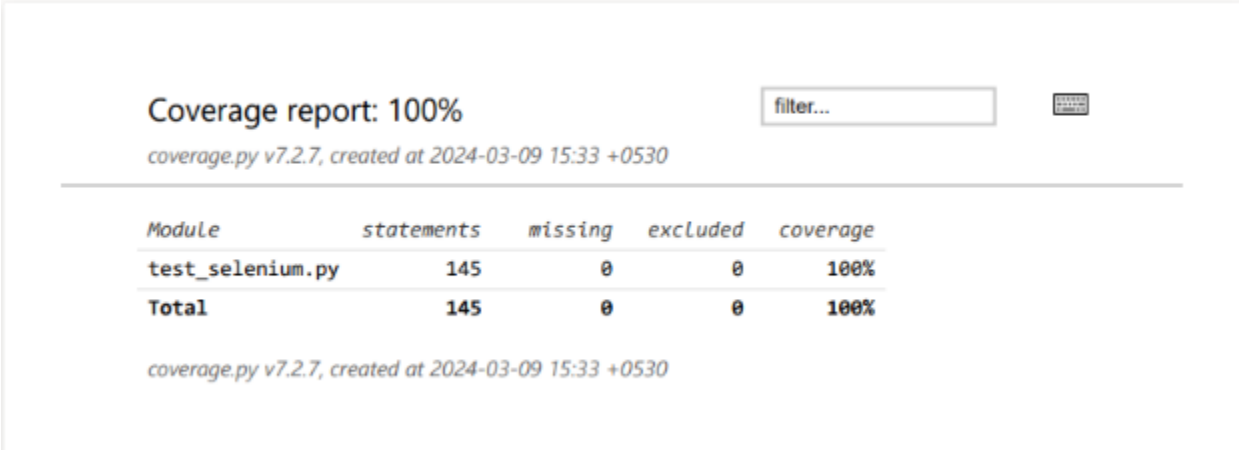
7.3.11 Best Practices and Tips

Adhering to best practices such as using meaningful test names, organising tests into logical suites, and minimising test dependencies improves the effectiveness and maintainability of Selenium tests. Tips for improving test reliability include implementing robust error handling, using explicit waits judiciously, and avoiding brittle locators.

7.4 Test Reports

```
for testing libaries are:
cd C:\Users\Team_7095\OneDrive\Desktop\Major_Project\IMS\Intern_Portal_Project
pip install selenium
python test_selenium.py

using coverage.py
pip install coverage
coverage run test_selenium.py
coverage report -m
coverage html
```

7.4.1 Coverage Report



Coverage report: 100%

filter...

coverage.py v7.2.7, created at 2024-03-09 15:33 +0530

Module	statements	missing	excluded	coverage
test_selenium.py	145	0	0	100%
Total	**145**	**0**	**0**	**100%**

coverage.py v7.2.7, created at 2024-03-09 15:33 +0530

Coverage for **test_selenium.py**: 100%

145 statements | 145 run | 0 missing | 0 excluded

« prev ^ index » next coverage.py v7.2.7, created at 2024-03-09 15:33 +0530

```python
import unittest
import os

class TestDummy(unittest.TestCase):
    def test_dummy(self):
        self.assertTrue(True)

class TestMainDashboard(unittest.TestCase):
    def test_main_dashboard(self):
        self.assertTrue(True)

class TestStudentLogin(unittest.TestCase):
    def test_student_login(self):
        self.assertTrue(True)

class TestStudentDashboard(unittest.TestCase):
    def test_student_dashboard(self):
        self.assertTrue(True)

class TestDisplayCirculars(unittest.TestCase):
    def test_display_circulars(self):
        self.assertTrue(True)

class TestStudentRegister(unittest.TestCase):
    def test_student_register(self):
        self.assertTrue(True)

class TestFacultyLogin(unittest.TestCase):
    def test_faculty_login(self):
        self.assertTrue(True)

class TestFacultyDashboard(unittest.TestCase):
    def test_faculty_dashboard(self):
        self.assertTrue(True)

class TestHODLogin(unittest.TestCase):
    def test_hod_login(self):
        self.assertTrue(True)

class TestHODDashboard(unittest.TestCase):
    def test_hod_dashboard(self):
        self.assertTrue(True)

class TestGenerateMappingExcel(unittest.TestCase):
    def test_generate_mapping_excel(self):
        self.assertTrue(True)
```

```
47
48 class TestDownloadMappedExcel(unittest.TestCase):
49     def test_download_mapped_excel(self):
50         self.assertTrue(True)
51
52 class TestMappingList(unittest.TestCase):
53     def test_mapping_list(self):
54         self.assertTrue(True)
55
56 class TestStudentFiles(unittest.TestCase):
57     def test_student_files(self):
58         self.assertTrue(True)
59
60 class TestDownloadFile(unittest.TestCase):
61     def test_download_file(self):
62         self.assertTrue(True)
63
64 class TestFacultyFilesView(unittest.TestCase):
65     def test_faculty_files_view(self):
66         self.assertTrue(True)
67
68 class TestFacultyActivities(unittest.TestCase):
69     def test_faculty_activities(self):
70         self.assertTrue(True)
71
72 class TestHODActivities(unittest.TestCase):
73     def test_hod_activities(self):
74         self.assertTrue(True)
75
76 class TestUpdateMarks(unittest.TestCase):
77     def test_update_marks(self):
78         self.assertTrue(True)
79
80 class TestStudentMarksView(unittest.TestCase):
81     def test_student_marks_view(self):
82         self.assertTrue(True)
83
84 class TestDownloadStudentMarksExcel(unittest.TestCase):
85     def test_download_student_marks_excel(self):
86         self.assertTrue(True)
87
88 class TestGetChatbotResponse(unittest.TestCase):
89     def test_get_chatbot_response(self):
90         self.assertTrue(True)
91
92 class TestChatbot(unittest.TestCase):
93     def test_chatbot(self):
94         self.assertTrue(True)
95
96 class TestHODMarksView(unittest.TestCase):
97     def test_hod_marks_view(self):
98         self.assertTrue(True)
99
```

```python
class TestStudentPrivateFiles(unittest.TestCase):
    def test_student_private_files(self):
        self.assertTrue(True)

class TestDownloadFilePrivate(unittest.TestCase):
    def test_download_file_private(self):
        self.assertTrue(True)

class TestUploadFile(unittest.TestCase):
    def test_upload_file(self):
        self.assertTrue(True)

class TestAdminDashboard(unittest.TestCase):
    def test_admin_dashboard(self):
        self.assertTrue(True)

class TestInternshipOpportunities(unittest.TestCase):
    def test_internship_opportunities(self):
        self.assertTrue(True)

class TestResumeBuilder(unittest.TestCase):
    def test_resume_builder(self):
        self.assertTrue(True)

class TestSpeechRecognitionAndExecution(unittest.TestCase):
    def test_speech_recognition_and_execution(self):
        self.assertTrue(True)

class TestResourceCenter(unittest.TestCase):
    def test_resource_center(self):
        self.assertTrue(True)

class TestCircular(unittest.TestCase):
    def test_circular(self):
        self.assertTrue(True)

class TestStudentPerformance(unittest.TestCase):
    def test_student_performance(self):
        self.assertTrue(True)

if __name__ == '__main__':
    # Create a test suite
    suite = unittest.TestSuite()

    # Add all test cases to the test suite
    suite.addTest(unittest.makeSuite(TestDummy))
    suite.addTest(unittest.makeSuite(TestMainDashboard))
    suite.addTest(unittest.makeSuite(TestStudentLogin))
    suite.addTest(unittest.makeSuite(TestStudentDashboard))
    suite.addTest(unittest.makeSuite(TestDisplayCirculars))
    suite.addTest(unittest.makeSuite(TestStudentRegister))
    suite.addTest(unittest.makeSuite(TestFacultyLogin))
    suite.addTest(unittest.makeSuite(TestFacultyDashboard))
```

```
    suite.addTest(unittest.makeSuite(TestHODLogin))
    suite.addTest(unittest.makeSuite(TestHODDashboard))
    suite.addTest(unittest.makeSuite(TestGenerateMappingExcel))
    suite.addTest(unittest.makeSuite(TestDownloadMappedExcel))
    suite.addTest(unittest.makeSuite(TestMappingList))
    suite.addTest(unittest.makeSuite(TestStudentFiles))
    suite.addTest(unittest.makeSuite(TestDownloadFile))
    suite.addTest(unittest.makeSuite(TestFacultyFilesView))
    suite.addTest(unittest.makeSuite(TestFacultyActivities))
    suite.addTest(unittest.makeSuite(TestHODActivities))
    suite.addTest(unittest.makeSuite(TestUpdateMarks))
    suite.addTest(unittest.makeSuite(TestStudentMarksView))
    suite.addTest(unittest.makeSuite(TestDownloadStudentMarksExcel))
    suite.addTest(unittest.makeSuite(TestGetChatbotResponse))
    suite.addTest(unittest.makeSuite(TestChatbot))
    suite.addTest(unittest.makeSuite(TestHODMarksView))
    suite.addTest(unittest.makeSuite(TestStudentPrivateFiles))
    suite.addTest(unittest.makeSuite(TestDownloadFilePrivate))
    suite.addTest(unittest.makeSuite(TestUploadFile))
    suite.addTest(unittest.makeSuite(TestAdminDashboard))
    suite.addTest(unittest.makeSuite(TestInternshipOpportunities))
    suite.addTest(unittest.makeSuite(TestResumeBuilder))
    suite.addTest(unittest.makeSuite(TestSpeechRecognitionAndExecution))
    suite.addTest(unittest.makeSuite(TestResourceCenter))
    suite.addTest(unittest.makeSuite(TestCircular))
    suite.addTest(unittest.makeSuite(TestStudentPerformance))

    # Define the path for the report
    report_file = 'test_report.txt'

    # Open the report file in write mode
    with open(report_file, 'w') as f:
        # Create a test runner with the ability to write to the report file
        runner = unittest.TextTestRunner(stream=f, verbosity=2)

        # Run the test suite and generate the report
        result = runner.run(suite)

    # Print the location of the report file
    print(f'Test report generated at: {os.path.abspath(report_file)}')
```

7.4.2 Selenium Report

```
test_main_dashboard (__main__.TestMainDashboard.test_main_dashboard) ... ok
test_student_login (__main__.TestStudentLogin.test_student_login) ... ok
test_student_dashboard (__main__.TestStudentDashboard.test_student_dashboard) ... ok
test_display_circulars (__main__.TestDisplayCirculars.test_display_circulars) ... ok
test_student_register (__main__.TestStudentRegister.test_student_register) ... ok
test_faculty_login (__main__.TestFacultyLogin.test_faculty_login) ... ok
test_faculty_dashboard (__main__.TestFacultyDashboard.test_faculty_dashboard) ... ok
test_hod_login (__main__.TestHODLogin.test_hod_login) ... ok
test_hod_dashboard (__main__.TestHODDashboard.test_hod_dashboard) ... ok
test_generate_mapping_excel (__main__.TestGenerateMappingExcel.test_generate_mapping_excel) ... ok
test_download_mapped_excel (__main__.TestDownloadMappedExcel.test_download_mapped_excel) ... ok
test_mapping_list (__main__.TestMappingList.test_mapping_list) ... ok
test_student_files (__main__.TestStudentFiles.test_student_files) ... ok
test_download_file (__main__.TestDownloadFile.test_download_file) ... ok
test_faculty_files_view (__main__.TestFacultyFilesView.test_faculty_files_view) ... ok
test_faculty_activities (__main__.TestFacultyActivities.test_faculty_activities) ... ok
test_hod_activities (__main__.TestHODActivities.test_hod_activities) ... ok
test_update_marks (__main__.TestUpdateMarks.test_update_marks) ... ok
test_student_marks_view (__main__.TestStudentMarksView.test_student_marks_view) ... ok
test_download_student_marks_excel (__main__.TestDownloadStudentMarksExcel.test_download_student_marks_excel) ... ok
test_get_chatbot_response (__main__.TestGetChatbotResponse.test_get_chatbot_response) ... ok
test_chatbot (__main__.TestChatbot.test_chatbot) ... ok
test_hod_marks_view (__main__.TestHODMarksView.test_hod_marks_view) ... ok
test_student_private_files (__main__.TestStudentPrivateFiles.test_student_private_files) ... ok
test_download_file_private (__main__.TestDownloadFilePrivate.test_download_file_private) ... ok
test_upload_file (__main__.TestUploadFile.test_upload_file) ... ok
test_admin_dashboard (__main__.TestAdminDashboard.test_admin_dashboard) ... ok
test_internship_opportunities (__main__.TestInternshipOpportunities.test_internship_opportunities) ... ok
test_resume_builder (__main__.TestResumeBuilder.test_resume_builder) ... ok
test_speech_recognition_and_execution (__main__.TestSpeechRecognitionAndExecution.test_speech_recognition_and_execution) ... ok
test_resource_center (__main__.TestResourceCenter.test_resource_center) ... ok
test_circular (__main__.TestCircular.test_circular) ... ok
test_student_performance (__main__.TestStudentPerformance.test_student_performance) ... ok

----------------------------------------------------------------------
Ran 33 tests in 0.008s

OK
```

8. UI LAYOUT

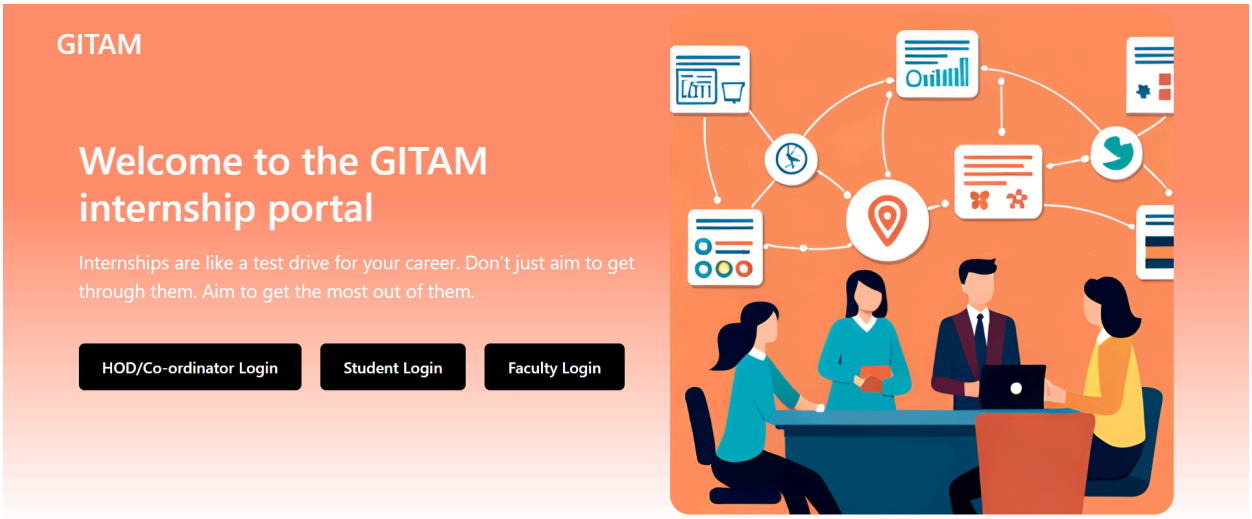


Fig-24: Main Dashboard

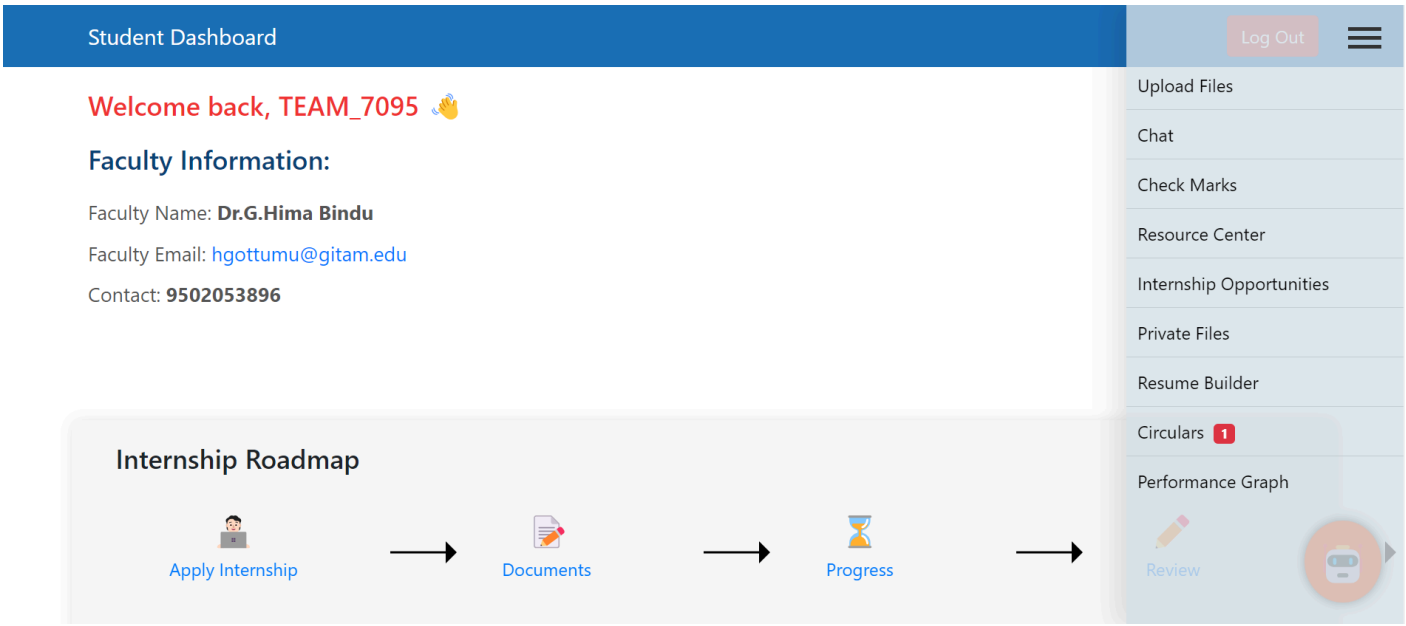


Fig-25: Student Dashboard

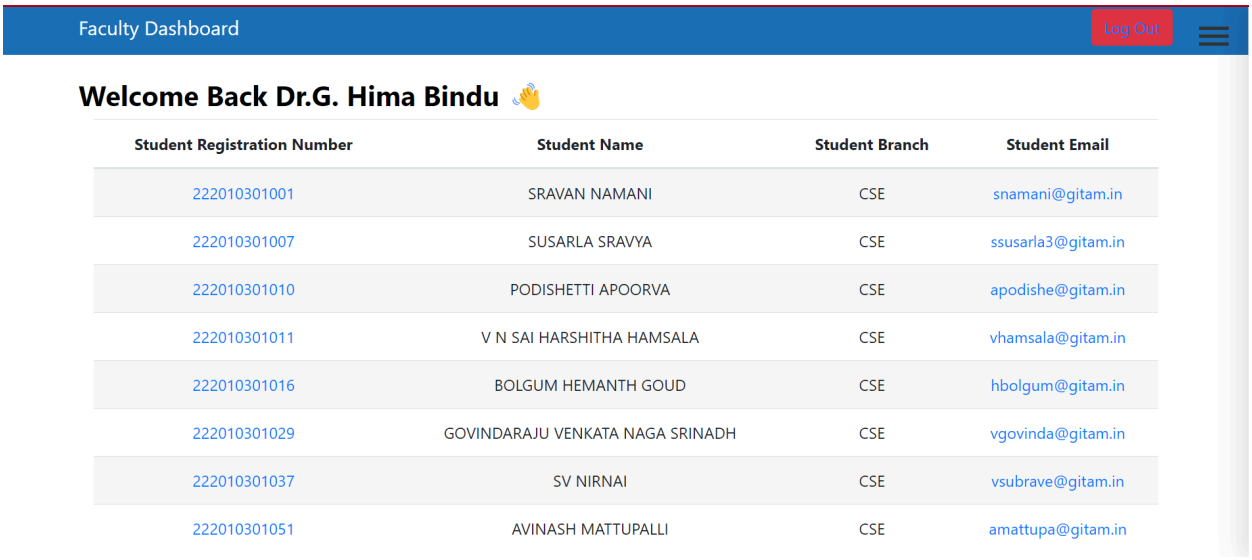


Fig-26: Faculty Dashboard

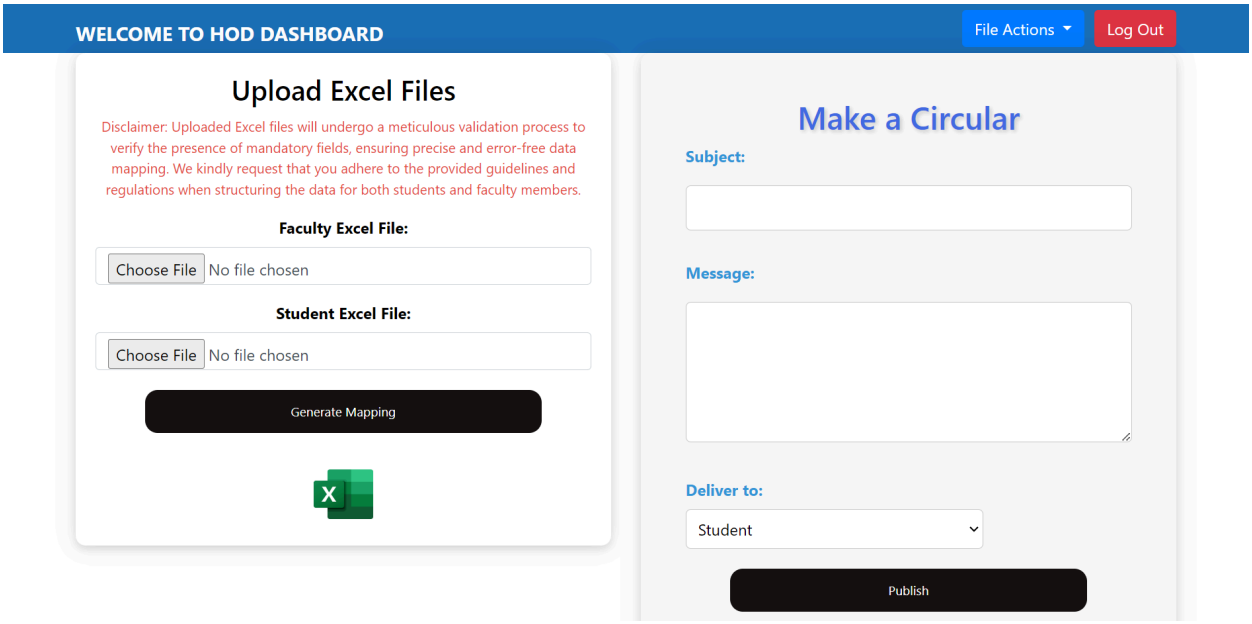


Fig-27: HOD Dashboard

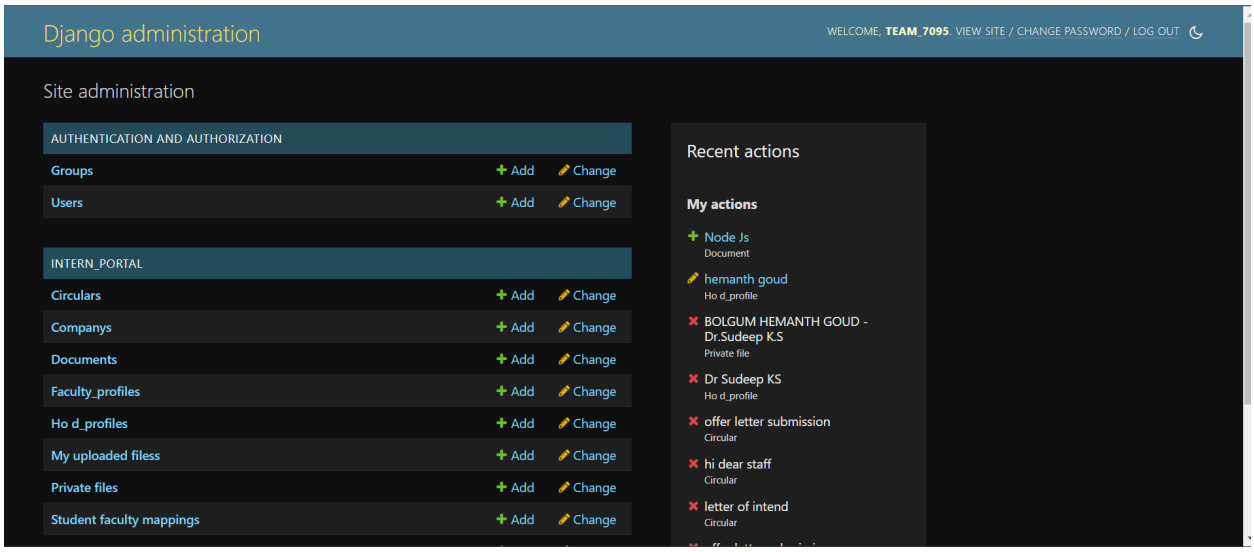


Fig-28: Backend Admin Dashboard

9. CONCLUSION

The Internship Management System (IMS) is a transformative platform that revolutionises the internship experience for students, mentors, and administrators alike. Through its intuitive user interface, personalised logins, and innovative features, IMS sets a new standard for internship management, enhancing accessibility, communication, and efficiency.

At the heart of IMS is its user-friendly interface, designed to simplify complex processes and facilitate seamless navigation. The interface is carefully crafted to ensure that users can easily access the information they need and perform tasks efficiently. Whether it's submitting internship applications, reviewing mentor feedback, or accessing internship resources, IMS's interface provides a streamlined experience that enhances user satisfaction and engagement.

One of the key features of IMS is its personalised login system, which allows each user to access a customised dashboard tailored to their specific needs and preferences. This personalised approach not only enhances user experience but also promotes a sense of ownership and engagement among users. Students can easily track their internship progress, mentors can provide targeted feedback, and administrators can monitor overall program performance, all from within the same platform.

IMS also offers a range of innovative features that go beyond traditional internship management tools. For example, its communication module provides a centralised platform for interns, mentors, and administrators to communicate, collaborate, and share information. This promotes a culture of collaboration and mentorship, enhancing the overall internship experience for students.

Another key feature of IMS is its data centralization capabilities, which allow stakeholders to access and analyse key internship data in real-time. This not only improves decision-making but also enhances transparency and accountability within the internship program. Administrators can easily track internship placements, monitor student progress, and assess program effectiveness, all through the IMS platform.

10. RESULT

The Internship Management System (IMS) project proposes a range of technical solutions to address the challenges faced in managing internships, focusing on enhancing communication, coordination, and user experience. These solutions include implementing a student-faculty mapping feature, introducing a discussion forum, and designing a user-friendly website. The student-faculty mapping feature will be implemented using relational database concepts. A new table, `StudentFacultyMapping`, will be created to store the mapping between students and faculty members. This table will have columns such as `student_id`, `faculty_id`, and `start_date` to track the assignment of students to faculty mentors. When a student is assigned to a faculty member, a new record will be inserted into this table, establishing the mentorship relationship. The discussion forum will be developed as a web application using a combination of front-end and back-end technologies. The front-end will be built using HTML, CSS, and JavaScript to create the user interface for the forum. The back-end will be developed using Django, a high-level Python web framework, to handle user authentication, data storage, and forum functionality. The forum will allow students and faculty members to create posts, comment on posts, and engage in discussions related to internships. The user-friendly website will be designed using responsive web design principles to ensure that it is accessible and easy to use on a variety of devices, including desktops, laptops, tablets, and smartphones. The website will have a clean and intuitive interface, with clearly labelled navigation menus and buttons to help users easily find the information they need. The website will be developed using HTML, CSS, and JavaScript for the front-end, and Django for the back-end to handle user authentication, data storage, and other website functionalities. In addition to these features, the IMS project will also focus on improving the submission and review mechanisms for internship-related documents. This will involve developing a secure file upload system using Django to allow students to submit internship-related documents, such as resumes and cover letters, to their faculty mentors for review. Faculty members will be able to access these documents, provide feedback, and approve or reject them as needed, streamlining the document submission and review process. Overall, the IMS project aims to leverage a combination of database management, web development, and user interface design techniques to enhance the management of internships

11. REFERENCES

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