A REPORT
ON

INTERNSHIP MANAGEMENT SYSTEM

Submitted by,

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Under the guidance of,

Ms. Rakheeba Taseen

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

At

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

BENGALURU

MAY 2025

PRESIDENCY UNIVERSITY

PRESIDENCY SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Internship report **"INTERNSHIP MANAGEMENT SYSTEM"** being submitted by DINSON SAM THOMAS bearing roll number 20211CSE0377 in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a bonafide work carried out under my supervision.

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DECLARATION

I hereby declare that the work, which is being presented in the report entitled **INTERNSHIP MANAGEMENT SYSTEM** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of my own investigations carried under the guidance of **Ms. Rakheeba Taseen, Assistant Professor, School of Computer Science Engineering, Presidency University, Bengaluru.**

I have not submitted the matter presented in this report anywhere for the award of any other Degree.

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ABSTRACT

Internship Management System was created to automate and simplify the process of internship batch tracking, student record management, attendance monitoring, and report exporting. It is created with ASP.NET Core MVC, Dapper ORM, and SQL Server. Dynamic batch creation, student management, attendance input (by batch or UIN), and report creation are supported by the system. The project minimizes manual work and maximizes accuracy in monitoring internship progress.

This project substitutes the traditional, paper-based system with a centralized digital system that provides multiple functionalities. The system enables administrators to create internship offer letters, save and fetch student information, track daily attendance, allocate tasks with deadlines, and keep performance remarks. All these functionalities are merged into a single easy-to-use interface, thereby minimizing manual errors and enhancing data accessibility.

INTERNSHIP COMPLETION CERTIFICATE

रेल पहिया कारखाना
RAIL WHEEL FACTORY
भारत सरकार / Govt. of India
भारतीय रेल / Ministry of Railway

महा प्रबंधक का कार्यालय,
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NO.RWF/NG-16/348/Pt III

DATE: 12.05.2025

CERTIFICATE

This is to certify that **Mr. DINSON SAM THOMAS, (20211CSE0377)**, B.Tech (Computer Science and Engineering) Student of Presidency University, has underwent Internship on **"Internship Management System" at Rail Wheel Factory, Yelahanka, Bangalore** for a period of 03 month i.e., 23rd January 2025 to 23rd April 2025.

The student has shown keen interest in learning during the period he was with us for the Internship. We found him Enthusiastic, Diligent, Hard Working and Creative.

We wish a bright future and success in all his endeavors.

K.S. Kiran

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Chapter 1

INTRODUCTION

Internships are a key component of contemporary education and career growth. Internships act as a work-related bridge between theory and industry experience, giving students a feel for actual workplace conditions. Internship programs also act as an in-house talent pipeline for companies to identify, screen, and develop potential future employees. Still, internship program administration has its own set of bureaucratic issues. Monitoring intern details, keeping track of attendance, providing offer letters, allocating daily or weekly work, and gathering performance feedback can become daunting, particularly when manually performed through paperwork or spreadsheets. These traditional methods tend to result in delays, inaccuracies, and inefficiencies that impact the intern experience as well as the internal operations of the organization.

To solve these issues, this project suggests the creation of a computer-based platform known as the Internship Management System. Tailor-made for the Rail Wheel Company, this web application is destined to automate the entire internship lifecycle management process. By centralizing all the relevant features in one place, the system facilitates smooth communication, error-free data processing, and enhanced transparency among the administrative team and the interns. The idea is to convert what used to be a time-consuming and manual process into an effortless, automated process that upgrades the overall efficiency of the internship program.

Internship Management System has been implemented utilizing advanced web technologies like HTML, CSS, JavaScript, and C# in the Visual Studio environment. MySQL has been utilized for storing and handling data to ensure dependable and scalable database support. The selection of tools is an emphasis on usability, security, and performance, thus making the system not only ideal for Rail Wheel Company but also for other such institutions or organizations interested in deploying a digital internship tracking system. By way of a simple interface, administrators are able to log into the system, administer intern profiles, assign tasks, create documents like offer letters, and track intern progress by way of daily attendance and comments.

As businesses expand and internship programs increase, the necessity for efficient systems to manage this administrative burden becomes paramount. In a world where everything is digital first, automation is no longer a choice but a requirement. Manual systems are by nature restrictive—they need a lot of manpower, are prone to data loss, and are cumbersome to report or analyze. Automating the process of managing internships not only diminishes the administrative workload but also enhances accuracy, provides consistency in documentation, and provides real-time access to critical information. It simplifies decision-makers' ability to monitor intern performance, detect issues early, and ensure a formalized internship experience that is beneficial to both the intern and the organization.

The scope of the Internship Management System does not stop at the current set of features. It is constructed on a modular basis to facilitate further developments, including intern evaluation reports, automated certificates, and feedback tools. This renders the system extremely flexible and keeps it current as organizational requirements change. The project has been constructed with a balance between short-term usability and long-term viability, with opportunities for further expansion based on user comments and emerging technologies.

In short, the Internship Management System is a clearly defined answer to an emerging issue in most institutions. By using technology to efficiently manage internships, this project is in line with the overall objectives of digital transformation, operational effectiveness, and improved user experience. The subsequent sections of this report discuss the research background, system design, objectives, implementation details, outcomes, and technical stack in more detail, as well as references and screenshots of the final working system.

Chapter 2

LITERATURE SURVEY

[1] A. R. Joshi and P. Deshmukh, "Design and Implementation of Online Internship Portal," *International Journal of Computer Applications*, vol. 98, no. 12, pp. 1–5, July 2014.

[2] R. Sharma, S. Gupta, and A. Verma, "Internship Recruitment System Using Mobile Application," *International Journal of Engineering Research & Technology (IJERT)*, vol. 8, no. 3, pp. 100–104, Mar. 2019.

[3] A. Kumar and S. Singh, "Smart Internship Management System for Universities," *International Journal of Scientific and Research Publications*, vol. 10, no. 4, pp. 120–124, Apr. 2020.

[4] M. Thomas and J. Kaur, "Centralized Web-Based Student Information Management System," *International Journal of Emerging Technologies in Learning (iJET)*, vol. 13, no. 6, pp. 52–58, 2018.

[5] R. Desai, K. Patel, and H. Mehta, "Task Based Performance Tracking System for Academic Projects," *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 6, no. 11, pp. 154–158, Nov. 2017.

[6] S. Banerjee and P. Reddy, "A Study on the Security Features of Web-Based Applications in Educational Systems," *International Journal of Information Security Science*, vol. 4, no. 2, pp. 35–42, 2021.

Over the past few years, digitization of administrative work in academic and corporate settings has picked up considerable pace. One of the key areas where digital tools are showing their mettle is in internship program management. The literature surveyed in this section presents different technological strategies, current systems, their shortcomings, and how existing research can be used to develop more comprehensive internship management platforms.

In [1], the authors suggest a web-based internship portal to facilitate interactions between industry and students. Their approach enables students to register and apply for internships, and companies can see student profiles and choose candidates. Although this system caters to the application process, it does not have fundamental administrative features like tracking attendance, managing tasks, and feedback mechanisms that are crucial during the internship period itself.

Another research work done by Sharma et al. [2] is on an Android application through which companies can advertise internship opportunities and students can apply. But the paper recognizes that the system does not facilitate organization-specific functionality such as offer letter generation or internal project task assignments, which are essential for a well-organized internship program in a government or industrial organization.

Kumar and Singh [3] presented an internship assignment system in a university setting that employed a straightforward matching algorithm to match students with appropriate internship positions. While it mechanized the selection process, it lacked monitoring features such as attendance, performance feedback, or task assignments. These shortcomings demonstrate the necessity of a more extensive platform that can accommodate the entire lifecycle of internship participation.

In [4], the writers elaborate on the need for centralized student record management systems and how web applications can be tailored for different educational purposes. The paper gives a larger picture of academic administration and touches lightly upon internship management as a module, again highlighting the need for a special and specialized system that can be independently taken care of by companies.

A very similar work by Desai et al. [5] suggested a student performance monitoring system using task completion and feedback logs. Although designed for academic projects, the model can be applied to internship tracking. Nevertheless, the authors indicate that real-time merging of attendance logs and communication between supervisors and interns was still an issue in their prototype system.

The work done in [6] points out the security issues in web-based management systems and enforces the need for safe user authentication and role-based access control, particularly in managing sensitive information like students' personal details and appraisal reports. This is directly relevant to the Internship Management System being worked on in this project, where the data of the users should be secured and some of the features should be accessible only to authorized personnel.

It can be seen from this review that although different components of internship or student management systems have been taken up by previous studies, the gap remains in providing a complete solution encompassing all aspects—ranging from onboarding to evaluation and culmination. The Internship Management System for Rail Wheel Company proposed here fills this requirement by including modules for the generation of documents, management of intern details, assignment of tasks, tracking of attendance, and feedback all under a scalable and secure web-based framework.

Chapter 3

RESEARCH GAPS OF EXISTING METHODS

The literature and systems presently in place for managing internships identify a number of observations regarding the limitations and challenges with present practice. Though numerous systems are in place to manage components of the internship process, including submission of the application, selection, or assessment, gaps exist for supporting the entire administrative process. The current systems tend to neglect to bring together all the main elements of internship management within one uniform system, therefore allowing improvement in functionality and usage.

Part of the main shortcomings of present systems is the absence of in-depth intern performance tracking. Most current platforms, like those covered in the literature review, are only concerned with the early stages of the internship, e.g., posting the opportunity or student enrollment. They do not provide for tracking intern progress during the course of the internship. This creates a void in that tasks such as attendance monitoring, assignment of tasks, and immediate feedback are often dependent on manual methods or third-party solutions, which cause inefficiencies and possible mistakes. The lack of real-time monitoring of interns is a major drawback since it minimizes the scope for immediate support or intervention.

Another major challenge is the process of document generation. Most systems do not have automated processes in place to generate key documents such as offer letters, certificates, or performance reports. For example, certain internship websites enable automation of the application process but do not offer templates or a function to create formal offer letters when an internship is finalized. It leads to tedious administrative work involving manual entry, formatting, and printing. A system that performs this function automatically not only enhances the speed of document production but also minimizes the chances of human error, thereby guaranteeing increased consistency and reliability.

Security and privacy of data is another vital shortcoming recognized in the current systems. Since internships may include sensitive personal data, such as intern information, attendance records, and performance appraisals, it is essential to secure this information. Although some

systems cover basic security procedures such as user authentication, they do not incorporate advanced security features, including role-based access control (RBAC) or encrypted data storage. Without these features, unauthorized access poses a risk, which can result in privacy breaches or data leakage. The requirement for more robust security features is particularly crucial in the case of web-based internship management systems, where information is remotely stored and accessed by multiple users across different departments.

Secondly, scalability is also a problem for current systems. Most of the systems under review are designed for a particular set of users or a specific internship program type, e.g., university-based internships or low-scale corporate programs. However, they struggle to scale efficiently when handling a large number of interns or when used in a dynamic environment like a government enterprise. As organizations grow or expand their internship programs, they often find that the initial system they implemented no longer meets their needs. The system may face performance issues, such as slow response times or inability to handle large amounts of concurrent data. A system that is scalable to meet increasing user demands without compromising performance is very important for sustainable success.

Among the available means that have been tested is utilizing Android-based apps to oversee internship processes. These apps provide for mobile-based monitoring of internship activity, including applications, feedback, and communication with interns. Though convenient, these systems are constrained by device compatibility, the absence of advanced features, and usually an over-reliance on user input. For example, using a mobile app for tracking attendance is not always practical in settings where interns may not have access to smartphones or where continuous internet connectivity is not possible. This constraint underscores the need for a web-based system that can be accessed from any device with internet access.

In order to serve these research needs, this project suggests an end-to-end internship management system that encompasses all the essential factors like intern profile management, task allocation, attendance tracking, feedback gathering, and document automation within a unified platform. The system is designed to be scalable, employing a secure MySQL database to handle intern data and a role-based access control system that ensures only those with authorization are able to access sensitive data. The use of Visual Studio, HTML, CSS, and JavaScript ensures the system is not just user-friendly, but also easily accessible on any device.

The system also provides sophisticated features such as real-time updates, automated letter creation, and performance monitoring, making it a complete solution for handling internships in an efficient and organized way.

The key research deficits and shortcomings of current internship management systems:

- Inadequate tracking of overall performance: Current systems lack the ability to track interns' daily performance aspects like attendance, work progress, and feedback.

- Integrated functionality deficit: Most systems concentrate on standalone activities like application management but do not integrate functionalities like attendance, work management, and document generation.

- Manual document creation: Some systems lack automated processes for creating key documents such as offer letters, certificates, or performance reviews.

- Lacking robust data security measures: Most platforms do not have advanced security measures such as role-based access control (RBAC) or data encryption storage, which are critical for securing intern data.

- Scalability problems: Current systems will find it hard to cope with an increasing number of interns, especially in big organizations or government agencies. They tend to slow down or have performance bottlenecks when the user volume is high.

Chapter 4

PROPOSED MOTHODOLOGY

The method for the proposed project involves the creation of an end-to-end Internship Management System (IMS) integrating all administrative functions into one single platform. This web-based application will automate tasks such as producing offer letters, handling intern information, tracking attendance, assigning assignments, and soliciting performance feedback. The application will be designed using latest web technologies so that it is not only scalable but also secure. Utilizing a centralized MySQL database will retain and handle all critical information in an assured, dependable manner.

The Internship Management System shall be an overall solution for handling all activities with respect to an internship, including onboarding, from intern. The following features and functionalities are the key, which shall be included within the system:

1. Intern Profile Management

The IMS will enable administrators to develop, update, and manage comprehensive profiles for all interns. Interns' personal details, including name, contact information, educational background, and internship work assignment, will be safely stored in the system. This will offer a single source of truth for administrators to access and update intern records speedily.

2. Attendance Tracking

Attendance will form a crucial component of the internship management system. The system will include an automatic system of monitoring intern attendance, recording days worked, and any leaves taken. This will be vital in the assessment of performance and verifying that interns have the expected commitment throughout their internship duration.

3. Task Assignment and Monitoring

Interns will be allocated individual tasks using the system, which they can monitor and update upon completion. Administrators and supervisors will gain real-time access to the status of each intern's tasks to ensure that no task is left uncompleted or unsupervised. Task deadlines and progress will be automatically updated to inform both supervisors and interns.

4. Performance Feedback

Intern performance will be measured through live feedback from supervisors. The system will enable supervisors to evaluate and comment on intern performance based on pre-established factors like task accomplishment, timeliness, and general contribution. The feedback will be saved in the profile of the intern, giving an overall view of their performance during the internship period.

5. Offer Letter and Certificate Generation

The system will be capable of automatically producing formal documents, including offer letters when interns are placed in the program and certificates on successful completion of the internship. This capability will automate the documentation process and preclude manual input, decreasing administrative load and guaranteeing precision.

6. Secure User Authentication

In order to protect the privacy and security of intern information, the system will employ secure user authentication. Role-based access control (RBAC) will be enforced, with only authorized staff (e.g., administrators, supervisors, interns) having access to certain information. Interns will have access to their own profiles and task information, whereas administrators will have more extensive access to administer all intern profiles and associated tasks.

7. Real-Time Reporting and Analytics

The system will provide real-time updates on intern progress, task status, attendance, and general performance. Administrators will use these reports to monitor the success of the internship program and receive recommendations on areas to improve. The reporting module will enable data export for analysis or sharing with appropriate stakeholders.

8. Scalability and Performance

Considering the possible expansion of internship programs in Rail Wheel Company, the system will be scalable to accommodate a high volume of interns without affecting performance. The employment of MySQL for database management guarantees that the system will scale efficiently to support growing amounts of data and users.

9. Technologies Used

The system will be built using the following technologies:

Frontend: HTML, CSS, and JavaScript for a responsive and user-friendly interface.

Backend: C# (C-Sharp) to implement business logic and server-side processing.

Database: MySQL to store intern data securely and reliably.

Development Environment: Visual Studio will serve as the integrated development environment (IDE) for coding, testing, and deployment.

Security: High-level security features like SSL encryption and role-based access control will be utilized to protect sensitive intern information.

10. System Architecture

The suggested IMS is based on a client-server architecture in which the frontend (user interface) communicates with the backend (business logic and data management) over a secure network connection. The system will run over the internet, thus accessible from any device with a web browser. A MySQL database will serve as the central repository, holding all intern data, task records, attendance logs, and feedback.

The system architecture can be outlined as:

Frontend (UI): The UI will be responsive and user-friendly, making it easy for both administrators and interns to use the system with minimal effort.

Backend (Server-Side): The backend will receive requests from the frontend, perform business logic (e.g., calculating task progress, attendance tracking), and communicate with the MySQL database to save and fetch data.

Database: MySQL will handle all the data securely, utilizing normalized schemas to prevent redundancy and ensure proper query performance.

Chapter 5

OBJECTIVES

1. Automate Intern Registration and Profile Management

The primary objective of the Internship Management System (IMS) is to automate the intern registration and profile management process, providing a streamlined method for creating and updating intern profiles. Traditionally, companies manage intern details manually, which can lead to errors, inefficiencies, and data inconsistencies. By implementing an automated system, this project eliminates these challenges and ensures that all intern data is stored securely and consistently.

Intern profiles will include essential details such as personal information (name, contact details), academic background (course, year of study, previous experience), internship assignments (department, supervisor), and performance records. The system will allow both interns and administrators to update information, ensuring that the profiles are always current. Interns can also upload required documents like resumes or academic transcripts directly through the platform, which reduces paperwork and manual data entry.

The system's ability to automatically populate and store intern details in a centralized database will also facilitate efficient searching and sorting. This will make it easy for administrators to quickly locate and manage intern information, track their progress, and evaluate performance. Moreover, having all intern information stored in one place allows administrators to analyze data for decision-making, such as assessing the success of internship programs and identifying areas for improvement.

The automation of intern registration and profile management reduces administrative workload and human error, ensuring that all data is accurately recorded, easily accessible, and up-to-date.

2. Streamline Task Assignment and Progress Monitoring

Another critical objective of the IMS is to streamline the task assignment and progress monitoring process. Traditionally, task assignments and performance evaluations are done manually, leading to inefficiencies and potential oversight. The IMS will automate the task assignment process, allowing supervisors to assign tasks to interns with deadlines and descriptions, while interns will be able to update their progress directly in the system.

This system will allow supervisors to allocate tasks based on the intern's skill set and role within the organization. Each task will be linked to a specific deadline, and the system will automatically send notifications to both supervisors and interns, ensuring that tasks are completed on time. Interns will be able to update their task statuses (e.g., "In Progress," "Completed"), which will be reflected in real-time on the platform. This transparency ensures that both supervisors and interns have a clear understanding of task priorities and deadlines.

By providing this task management functionality, the system will enhance intern productivity and accountability. Supervisors can monitor task completion at any time, making it easier to identify issues, provide timely feedback, and adjust priorities as necessary. Furthermore, the system can generate detailed reports on task completion, highlighting the most successful interns, areas where further training might be needed, and any delays that require attention.

This automated task assignment and monitoring will reduce administrative burden, enhance intern engagement, and improve overall task management.

3. Automate Document Generation (Offer Letters, Certificates, etc.)

The third objective of the IMS is to automate the generation of key internship-related documents, such as offer letters, performance certificates, and other formal communications. Currently, many companies rely on manual processes to create and issue these documents, which can be time-consuming and error-prone. Automating the document generation process will not only improve efficiency but also ensure that all documents are consistent, accurate, and professional.

When an intern is selected, the system will automatically generate an offer letter, pre-populated with the intern's details, role, department, and internship duration. This letter will be ready for review and approval by the administrator or HR personnel, significantly reducing the time spent on manual drafting and formatting. Similarly, upon successful completion of an internship, the system will generate a performance certificate, acknowledging the intern's contributions and achievements.

The automated system will also ensure that all documents follow a standardized format, reducing the risk of discrepancies or errors. These documents can be easily downloaded and shared with interns, providing a seamless experience for both the company and the interns. Additionally, the automation of these processes ensures timely document delivery, reducing delays in administrative tasks and improving the overall experience for the intern.

By eliminating manual document generation, the system will streamline administrative

workflows and ensure that interns receive timely, professional, and consistent communications from the company.

4. Improve Intern Performance Evaluation through Feedback

The fourth key objective is to improve the performance evaluation process through regular and structured feedback. A significant challenge in traditional internship management is the lack of real-time performance tracking, which makes it difficult to evaluate an intern's contribution effectively. The IMS will include a robust performance feedback module, allowing supervisors to provide continuous feedback on intern performance throughout the internship period.

The feedback module will allow supervisors to rate intern performance on various parameters such as task completion, punctuality, communication skills, and overall attitude. These ratings will be stored in the intern's profile and can be used to generate performance reports. Supervisors will also have the ability to provide written comments on specific tasks or areas where improvement is needed. This continuous feedback loop will help interns improve throughout the internship, ensuring that they receive constructive guidance to meet organizational expectations.

Interns will also have the opportunity to provide self-assessments and receive peer feedback from colleagues, creating a comprehensive evaluation of their overall performance. By incorporating multiple sources of feedback, the IMS will ensure that evaluations are fair and holistic, providing a complete picture of the intern's contributions. Additionally, the feedback can be used to identify top-performing interns, providing valuable insights for future internship planning and recruitment.

This structured approach to feedback will promote continuous improvement for interns, while also helping administrators assess the effectiveness of the internship program and identify any gaps in training or resources.

5. Ensure Data Security and Privacy

The final objective is to ensure robust data security and privacy for all users of the system. Interns' personal information, academic background, attendance records, and performance evaluations are highly sensitive, making it essential to secure this data from unauthorized access and potential breaches. The IMS will implement multiple security measures, including role-based access control (RBAC), secure data storage, and encrypted communications, to safeguard intern data.

RBAC will ensure that users only have access to the data that is relevant to their role. For instance, interns will only be able to access their own profiles and tasks, while administrators will have broader access to manage all intern records. This limits the exposure of sensitive information to those who are authorized to view it. The data will be stored securely in a MySQL database, using encryption to protect the data at rest and during transmission.

The system will also include regular security audits and updates to address emerging threats, ensuring that the platform remains secure and compliant with industry standards. Additionally, all communications between the frontend and backend will be encrypted using SSL protocols, providing a secure connection for users accessing the system.

By implementing these advanced security measures, the IMS will protect intern data, enhance user trust, and ensure compliance with privacy regulations, such as GDPR or any local data protection laws.

Chapter 6

SYSTEM DESIGN & IMPLEMENTATION

System Design

The Internship Management System (IMS) design is aimed at offering an easy-to-use, scalable, and secure system for managing internship programs. The system will be designed with a modular architecture, where each module is properly defined and can be easily modified or extended later. The most important features of the system design are the frontend design, backend architecture, database design, and security protocols.

1. Frontend Design

The frontend of the IMS will be implemented using HTML, CSS, and JavaScript to provide a responsive and user-friendly interface. The design will prioritize simplicity, clarity, and ease of use for both users, such as interns and administrators.

- User Interface: The user interface shall be a simple, intuitive design with simple-to-use navigation menus. Interns shall be able to login and view their profiles, task lists, attendance history, and feedback. Administrators shall view more sophisticated functionality, such as managing intern profiles, task assignments, and reporting generation.

- Responsive Design: The frontend will be responsive in that it will be optimized for different devices like desktops, tablets, and mobile phones. This way, users can access the system at any time and location using any device with internet connectivity.

- Interactivity: JavaScript will be employed to introduce interactivity into the system. For instance, dynamic task status updates, notifications, and form validations will be driven by JavaScript, enhancing the overall user experience.

2. Backend Architecture

The backend of the IMS will contain all the business logic, data processing, and communication between the frontend and the database. The backend will be implemented using C# (C-Sharp), a robust programming language renowned for its security and efficiency in web application development.

- Server-Side Logic: The backend will process the user requests, undertake operations like creating intern profiles, allocating tasks, and updating attendance records. C# will accomplish these operations by communicating with the database and giving the required feedback to the frontend.

- RESTful API: A RESTful API will be created to enable communication between the frontend and the backend. The API will have endpoints for operations such as user authentication, data fetching, and task updates. This will loosely couple the frontend and the backend, making the system simpler to extend and maintain.

- Security: The backend will utilize secure forms of authentication like JWT (JSON Web Tokens) to authenticate and safeguard sensitive data from users. Role-based access control (RBAC) will also be enforced to provide diverse users (administrators, interns) with corresponding rights to view particular data and functionalities.

3. Database Design

The database will be constructed with MySQL, a robust and stable relational database management system. MySQL will hold all intern information, personal details, assignment of tasks, attendance records, feedback, and documents (like offer letters and certificates).

- Tables: The database will be divided into a few tables, each holding different information types:
- Interns Table: Holds intern personal information such as name, contact, academic record, and internship position.
- Tasks Table: Houses task that interns are assigned to do, and their descriptions, deadlines, and statuses.
- Attendance Table: Holds records of attendances by the interns, which include working hours, leave days, and absence.
- Feedback Table: Holds the feedback given by supervisors on interns' performance in terms of rating and comments.
- Documents Table: Holds offer letters and certificates which are created for the interns.
- Relationships: The foreign keys will have the tables connected to each other. For

instance, the Interns table and the Tasks table will be related by a foreign key, linking the task with the intern. Likewise, the Attendance table and the Interns table will also be connected through a foreign key, which identifies the attendance corresponding to the individual intern.

- Normalization: The database would be implemented using the techniques of normalization to prevent redundancy and facilitate effective storage and retrieval of data. Indexing will also be properly done to enhance the performance of queries.

4. Security Measures

Security is important in the IMS since it involves handling sensitive intern data. In order to protect the data and maintain its privacy, the system will incorporate the following measures:

- User Authentication: Secure login methods with username/password authentication will be utilized by the system. For enhanced security, two-factor authentication (2FA) can be integrated for admins or users with high-level access.

- Role-Based Access Control (RBAC): The application will support various user roles (interns, supervisors, and administrators). Some features and data will be locked down based on the user's role. Interns will have access to only their own profile and tasks, whereas administrators will have complete access to control intern records and run reports.

- Data Encryption: All sensitive information (e.g., passwords, personal data) will be encrypted with robust encryption algorithms. The system will also guarantee that data exchanged over the internet is encrypted using SSL/TLS protocols to avoid eavesdropping.

- Regular Security Audits: The system will regularly undergo security audits to detect and rectify any vulnerabilities. The platform will also be updated with the most recent security patches.

System Implementation

The system will be designed and implemented using Visual Studio, which offers a rich integrated development environment (IDE) for developing, testing, and deploying web applications. The implementation process will be done in a waterfall model to ensure that every stage of development is finished before proceeding to the next stage.

Phase 1: Planning and Analysis: During this phase, the requirements of the system will be collected and the design document prepared. Project scope, resources, and time schedule will also be determined.

Phase 2: Development: In this phase, the frontend and backend will be implemented. The backend will be developed using C#, whereas HTML, CSS, and JavaScript will be employed for the frontend. The database design will also be completed and will be implemented in MySQL.

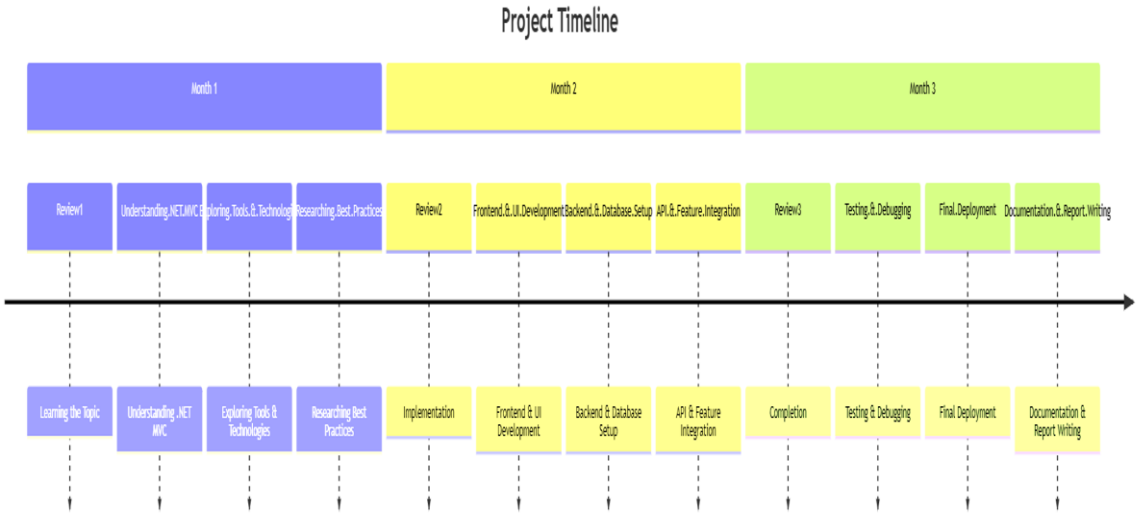
Phase 3: Testing: The system will be thoroughly tested to find out any bugs or problems. This involves unit tests, integration tests, and security tests to validate that the system behaves as anticipated and satisfies the needs.

Phase 4: Deployment: Once testing is successful, the system will be rolled out to a production environment, making it available to end-users. Regular support and upgrades will be offered as and when required.

Chapter-7

TIMELINE FOR EXECUTION OF PROJECT

(GANTT CHART)



Chapter 8

OUTCOMES

The Internship Management System (IMS) has been designed to increase the efficiency and effectiveness in administering internship schemes of the Rail Wheel Company. The major achievements with the installation of this system will be:

1. Improved Internship Administration

The system will highly automate the internship program management process. Through automating intern profile management, task assignment, and attendance tracking, administrators will be able to dedicate more time to higher-level decision-making. Interns will also enjoy better access to their tasks, feedback, and performance measures.

- Automated Task Allocation: Supervisors will no longer have to manually allocate tasks. The system enables automatic generation of tasks depending on pre-specified schedules and tasks, eliminating human error and ensuring timely allocation.

- Attendance and Feedback Tracking: The system will automatically track intern attendance and create feedback from supervisor inputs, removing the need for manual record-keeping and increasing accuracy.

2. Effective Document Generation

The system's capacity to automatically prepare vital documents, including offer letters, internship completion certificates, and performance evaluation reports, will minimize considerable time and effort for administrators. These documents will be customized according to intern information and can be downloaded and shared as per ease.

- Offer Letters: The system will produce offer letters for chosen interns, which will be properly formatted and contain all the important details.

- Certificates and Reports: When the internship is completed, the system will produce performance assessment reports and certificates for the interns automatically.

3. Scalability and Future Enhancements

The system will be built with scalability in mind to accommodate an increasing number of interns and tasks as the internship program grows. Modular architecture will further enable future add-ons, for example, inclusion of new functionality, such as performance analytics, internship job boards, or connectivity with other HR management software.

- Scalability: The system is capable of supporting a high number of data and users, thus being appropriate for small and large-scale internship programs.

- Future Enhancements: The modularity of the system allows future enhancements to be added to the system without interfering with its fundamental functionality.

4. Enhanced Reporting and Analytics

The IMS will enable administrators with robust reporting tools that will provide them with information regarding intern performance, attendance, and completion of tasks. The reports will assist HR staff in making informed decisions and enhancing the internship program.

- Reports: Intern performance, attendance, and task completion will be reported by the system and can be exported to analyze.

- Data-Driven Insights: Administrators can use the data gathered by the system to analyze trends and make changes to the internship program accordingly.

5. Increased Productivity

Through the automation of most of the administrative work related to the internship programs, the IMS will be able to relieve valuable time for HR staff and supervisors. This improved productivity will enable staff to spend more time on strategic initiatives, like mentoring interns and enhancing the overall internship experience.

- Time Savings: Operations like profile maintenance, assignment of tasks, and monitoring attendance, which otherwise would take considerable time, will now be done automatically, conserving precious time for employees.

- Efficiency Gain: With streamlined processes, administrators and supervisors will be able to handle more interns efficiently, enhancing the overall efficiency of the internship program.

6. Improved Intern Experience

The easy-to-use interface, transparency, and access to vital information of the system will improve the experience of interns as a whole. They will not have to use emails or paper forms to keep track of their work or attendance anymore. The system will offer them a central location where they can take care of all their internship tasks.

- Easy Access: Interns can log in and view their profiles, assignments, feedback, and attendance at any time, facilitating ease of organization and monitoring of progress.

- Personalized Dashboards: Interns will have an individualized dashboard that reflects upcoming assignments, attendance records, and supervisors' feedback, providing a clear picture of their internship experience.

Chapter 9

RESULTS AND DISCUSSIONS

RESULTS

The Internship Management System (IMS), since its implementation within Rail Wheel Company, achieved its intended objectives regarding the project with a full-blown solution that caters to managing internship schemes. The primary results achieved have been noted below:

1. System Functionality

The most critical features of the IMS have been tested and proved to run efficiently. The features involve handling intern profiles, task allocations, attendance recording, submitting feedback, and document prints.

Intern Profile Management: Interns were able to easily create, edit, and see their profiles. This feature was important in ensuring that there was accurate and current information regarding interns. Administrators were able to easily access and manage intern information, eliminating manual labor and mistakes.

Task Assignment and Tracking: The task assignment capability was implemented successfully, enabling the supervisor to allocate tasks to interns, create deadlines, and monitor the status of such tasks. Interns had the ability to label tasks as completed to provide real-time status updates. This automated tracking of tasks enhanced both supervisor and intern workflow.

Attendance Management: The system automatically recorded and monitored intern attendance. Interns reported their working hours, and administrators could access attendance reports. The system automatically computed attendance percentages, making it simple for supervisors to monitor intern attendance.

Feedback and Performance Evaluation: Supervisors gave feedback on intern performance, which was stored in the system. Interns were able to see their performance reviews at any time, providing them with real-time feedback on their progress.

Document Generation: The system supported automated generation of important documents such as offer letters and performance certificates. The feature cut down major amounts of time for administrators, who were no longer required to create these documents manually.

2. System Performance

The IMS was analyzed based on performance with different usage scenarios. The system demonstrated excellent performance based on:

Speed: The system was highly responsive to user actions, even when numerous users were using the site at the same time. There were no perceptible delays in system response times, which maximized the user experience.

Scalability: The system scaled effectively to accommodate more interns and tasks. Scalability allows the system to accommodate future growth, whether the number of interns or tasks grows over time.

Security: The system used SSL/TLS encryption for secure communication between the server and users. User authentication was done using a secure login system, where only authenticated users could view sensitive information.

3. User Experience

Interns and administrators alike gave positive feedback about the experience with the system. Interns described the system as easy to use, and administrators valued the automation capabilities that saved them significant time.

Administrators: Administrators reported that the system was intuitive and efficient for managing internship activities. Automation of document creation, submission of feedback, and attendance reduced administrative work and enhanced operations efficiency.

4. Limitations

Although the system was found effective, a few limitations were discovered:

Limited Customization: The task management system was quite rigid, and limited customization in task categories and priorities was done. Administrators recommended adding additional task categories and task workflow customization.

Advanced Reporting: Administrators asked for more advanced reporting capabilities, including the capacity to compare intern performance over time or create complex data visualizations.

DISCUSSION:

1. Improvements in Efficiency

The biggest success of the IMS was the huge boost in efficiency in dealing with intern data, tasks, and attendance. Before, all these activities were carried out manually or through non-integrated systems, causing inefficiencies and errors. With the IMS, administrators could automate the majority of these activities, hence saving time and reducing errors.

Task Management Automation: The capacity for automatically assigning work and monitoring when it is finished has significantly lightened administrative work. Supervisors no longer manually assign work or monitor deadlines, freeing their time to concentrate on more strategic-level responsibilities.

Real-Time Attendance Monitoring: Interns and administrators alike reported that the automated monitoring of attendance was very useful. It ensured that there was instant access to attendance records, and this facilitated easy detection of any attendance problems in advance by administrators.

2. User Experience and Feedback

The administrators and interns' feedback was largely positive. The system was easy to use, and the interns liked it for the clarity it gave them about their work and performance. The personalized dashboard helped them remain organized and in control of their assignments, which boosted their productivity.

Interns' Feedback: Interns were most thankful for the task monitoring and instantaneous feedback abilities. Through these capabilities, they were able to monitor their activities and upgrade themselves based on supervisor feedback. The immediate availability of reports, including certificates of performance, was also a big plus.

Administrators' Feedback: Administrators noted the usefulness of the document generation

feature. Automating the generation of documents such as offer letters and certificates saved a lot of time. Furthermore, the reporting tools were also helpful for tracking intern performance.

3. Security and Privacy Issues

Security is a critical consideration in handling sensitive intern information. The system took various steps to ensure that data was secure and confidential.

User Authentication: Utilization of a secure login mechanism and role-based access control (RBAC) ensured that only legitimate users had access to intern data. It helped prevent unauthorized access and kept intern details private.

Data Encryption: Intern data transmitted between the server and client was encrypted with the use of SSL/TLS protocols, thereby keeping sensitive information like intern profiles and performance critiques safe during transmission.

4. Areas for Improvement

Although the IMS was generally successful, there are a number of areas that can be improved to enhance functionality and usability:

Task Management Customization: The task management functionality can be improved by enabling administrators to customize task categories, priorities, and deadlines. This will enable the system to be more flexible for various kinds of internship programs.

Mobile Experience: The platform can be made even more responsive for mobile users. While the system was planned to be responsive, interns identified that some aspects were hard to navigate on the smaller screens of mobile devices. A separate app for mobile phones can resolve the problem.

Advanced Reporting Functionality: The reporting function could be enhanced to provide more detailed analysis, like trend analysis of intern performance or attendance patterns over time. Such advanced functionality would enable administrators to make better decisions.

5. Future Directions

The successful roll-out of the IMS paves the way for a number of future enhancements:

Mobile App Development: Having a dedicated mobile application would enhance the user experience so that it would be more convenient for interns to track their work and provide feedback while on the move.

Integration with Other HR Tools: Going forward, the IMS might be integrated with other HR tools, including payroll or performance management software. This would enable smoother usage across multiple HR processes.

Improved Reporting and Analysis: Adding new reporting capabilities, including performance trends and customizable reports, would give administrators greater insight into the success of the internship program.

Chapter 10

CONCLUSION

The Internship Management System (IMS) developed for Rail Wheel Company has proven to be an essential tool in streamlining the entire process of managing internship programs. By automating crucial tasks such as intern profile management, task assignment, attendance tracking, feedback collection, and document generation, the system has significantly reduced administrative overhead and enhanced operational efficiency. Furthermore, the system's centralized platform for all intern-related information has made it easy for administrators to manage and access intern data, ensuring that nothing is overlooked and allowing for better decision-making and oversight. The integration of automated features like document generation, which previously required manual input, has saved a substantial amount of time, reducing the chances of human error and increasing the accuracy of the information provided. This has been a game-changer for the Rail Wheel Company, where before, manual tracking was prone to discrepancies, making the process tedious and time-consuming.

Overall, the **Internship Management System (IMS)** has successfully met the goals set for improving internship program management at Rail Wheel Factory Company. Through its efficient handling of intern profiles, task assignments, attendance, and document generation, the system has proven to be a valuable tool for both administrators and interns. The feedback received from users has been overwhelmingly positive, and the system's performance has demonstrated its potential to simplify and optimize internship management.With further improvements and enhancements, the IMS has the potential to become an even more powerful tool for managing internship programs, making it easier to track, evaluate, and support interns throughout their internship experience.

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APPENDIX-A

PSUEDOCODE

 # The enclosure of the code is not permittable according to the Rail Wheel Factory company rules.

APPENDIX-B

SCREENSHOTS

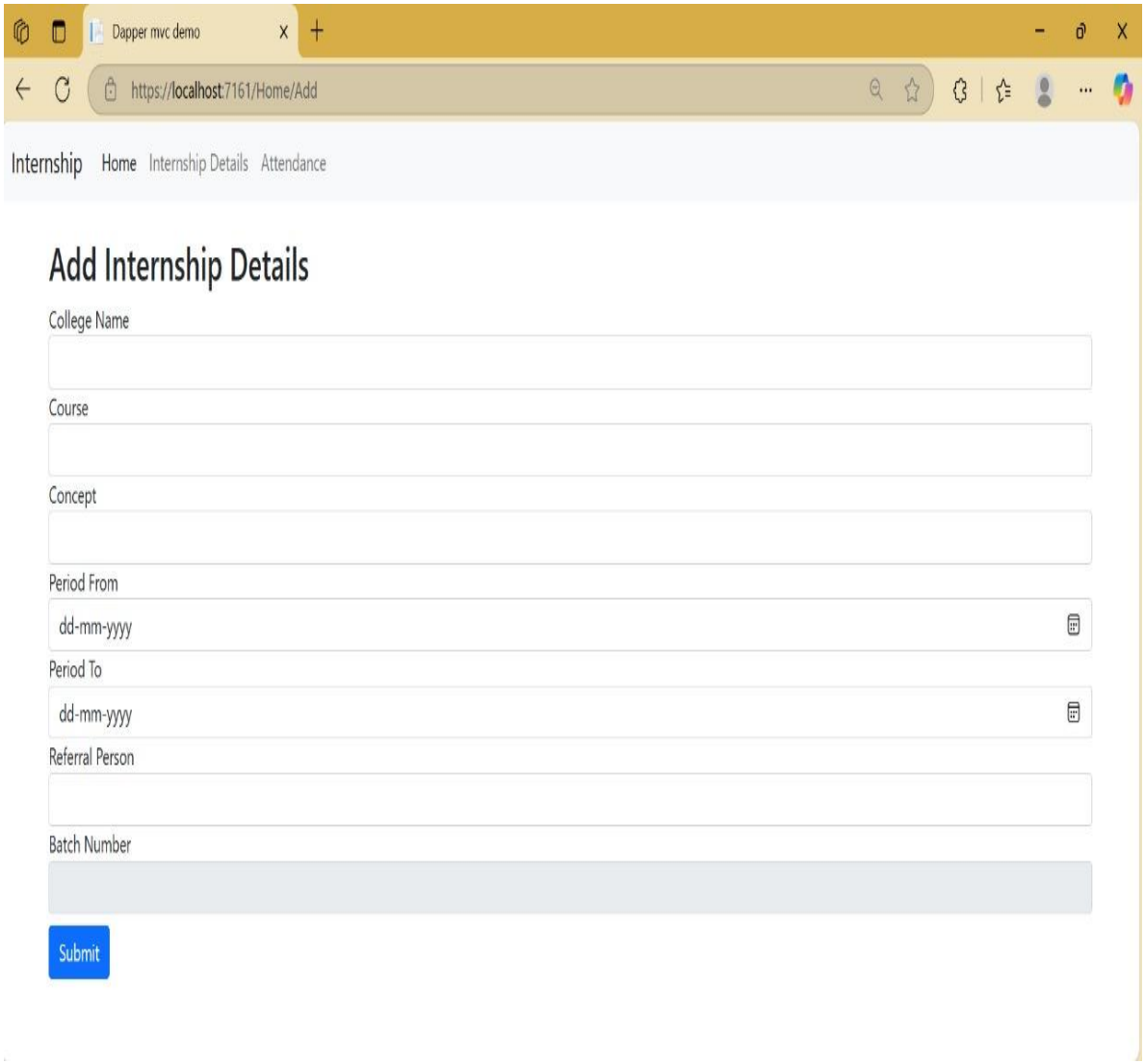

Fig.1.1. Home Page

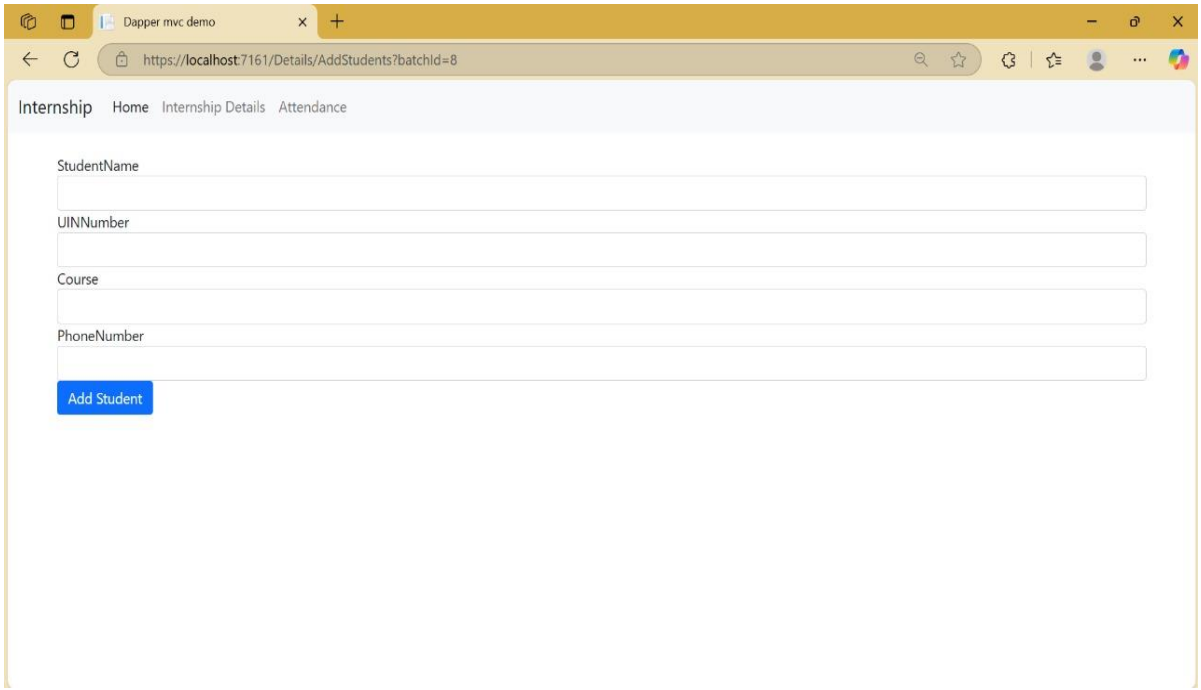

Fig.1.2. Add Student details Page

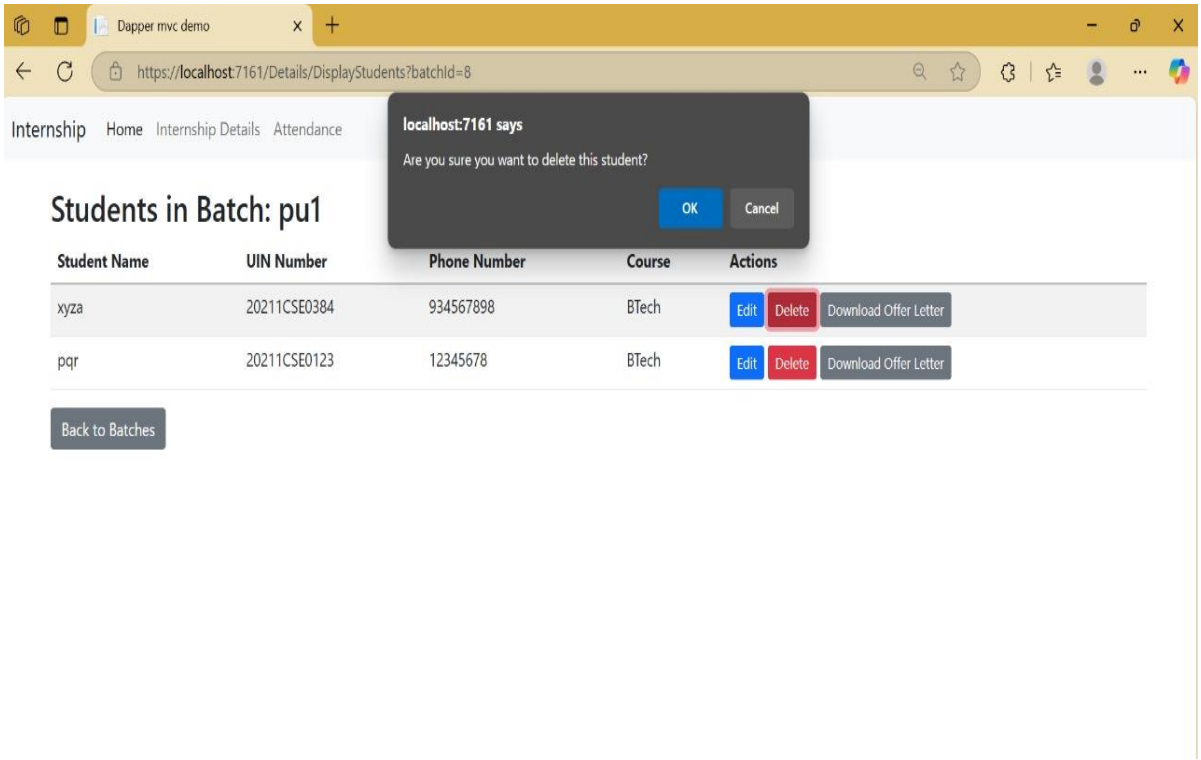

Fig.1.3. Delete Student page

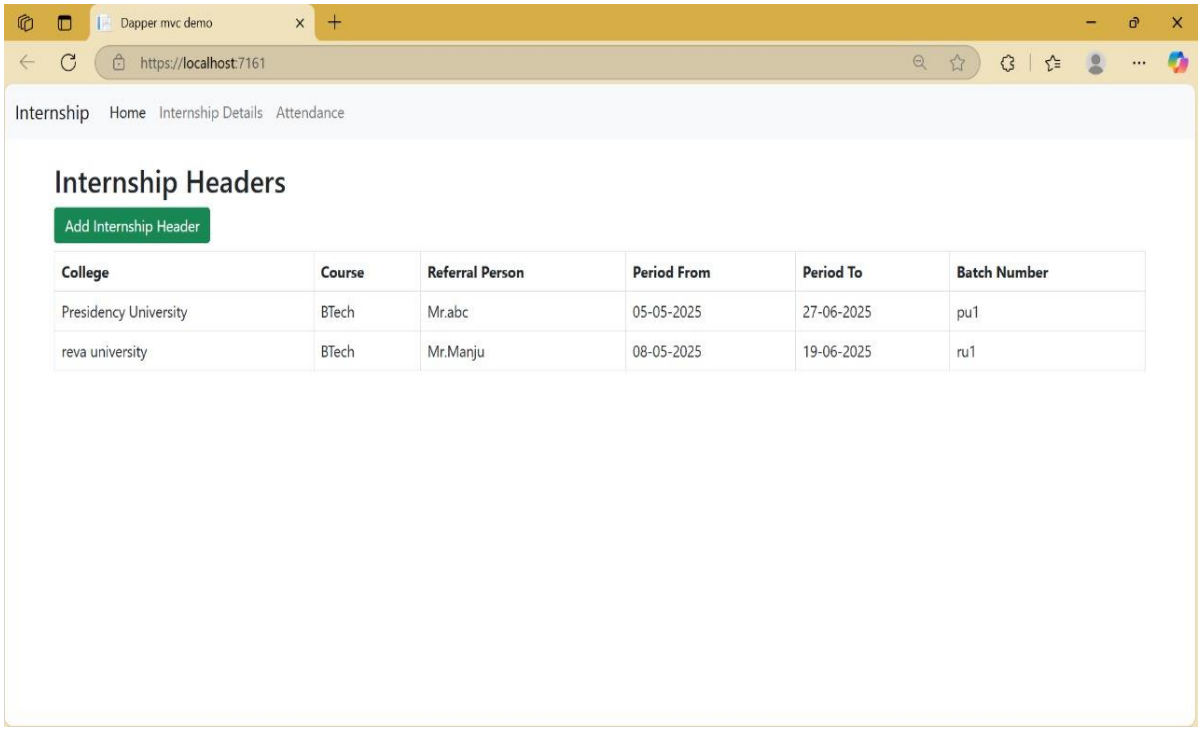

Fig.1.4.Internship Header page

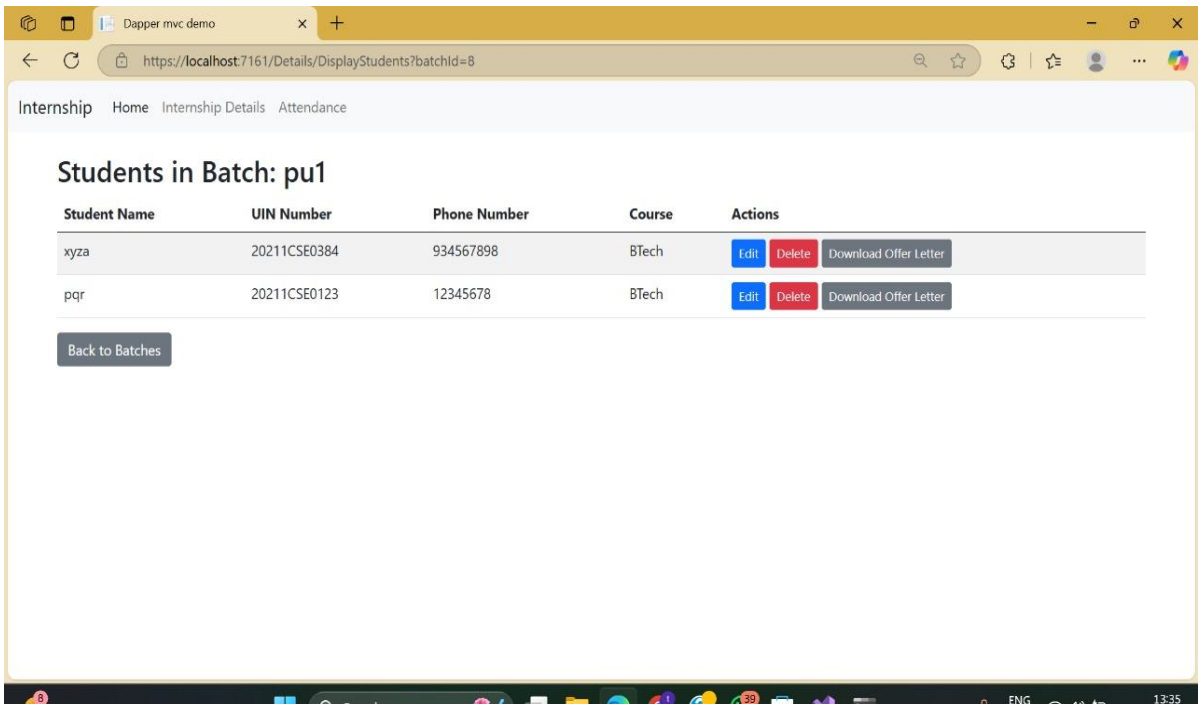

Fig.1.5. Student details Page

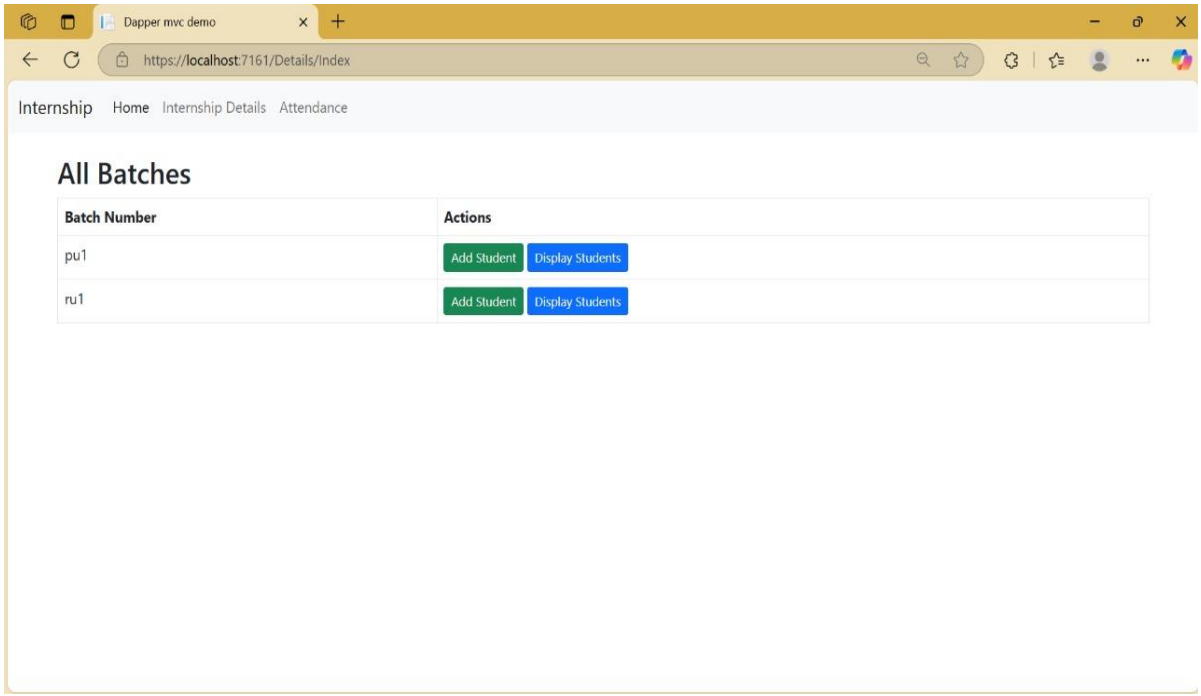

Fig1.6. Batch Display Page

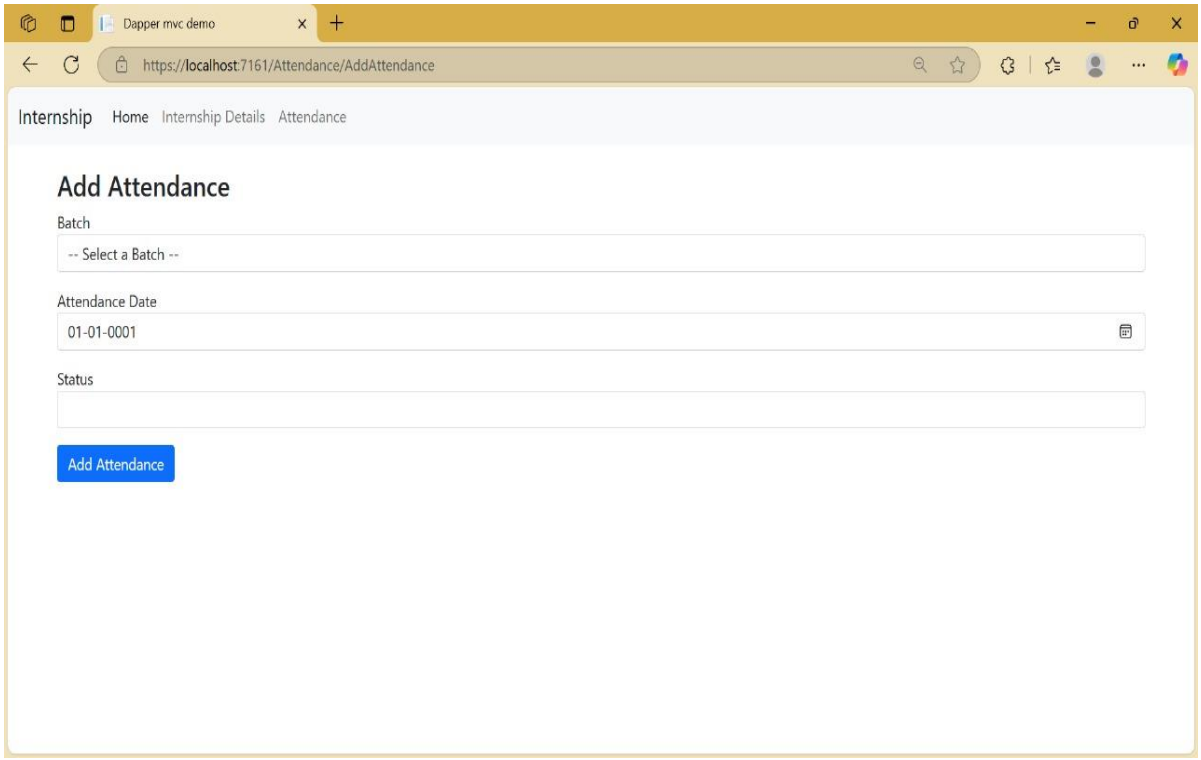

Fig.1.7. Register Attendance Page

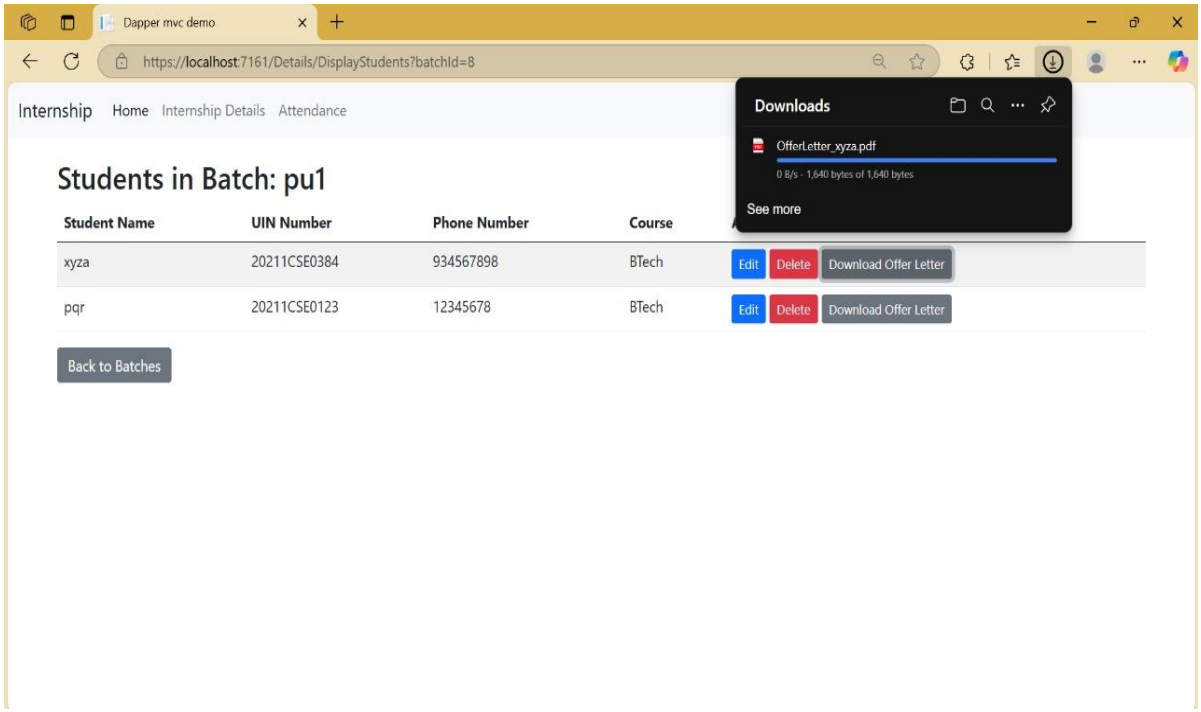

Fig.1.8. Download offer letter page

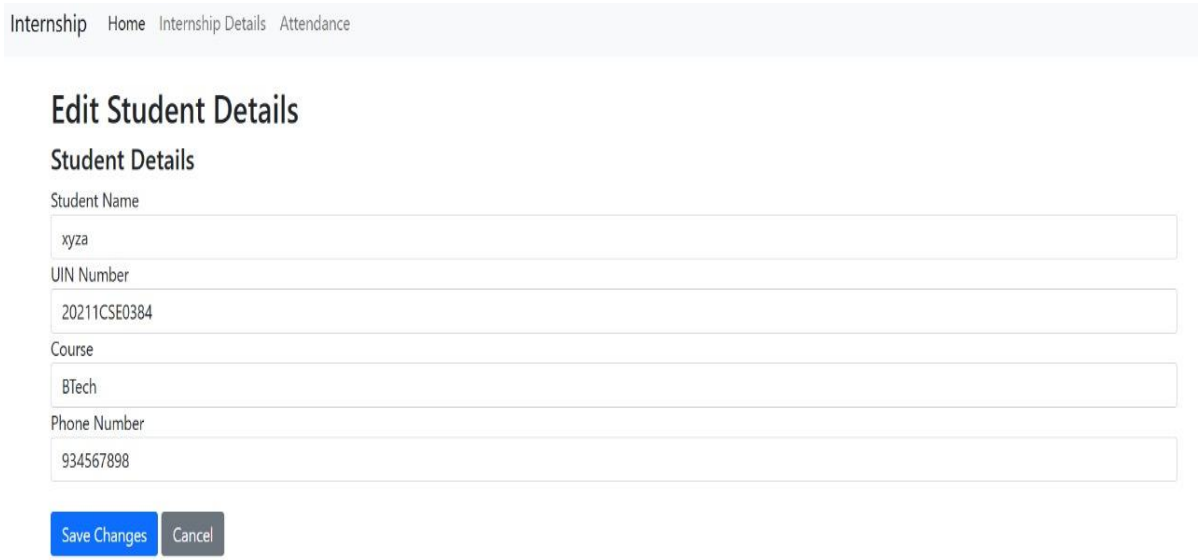

Fig.1.9. Edit student details Page

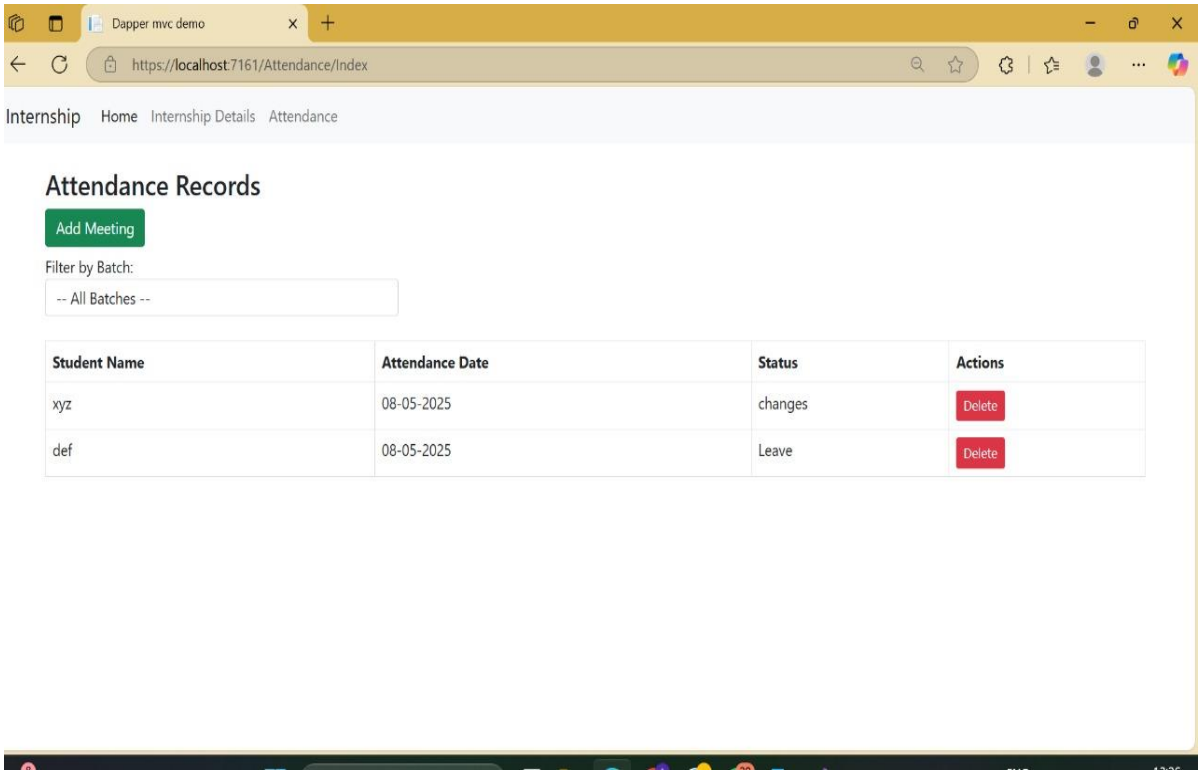

Fig.1.10. Attendance record Page

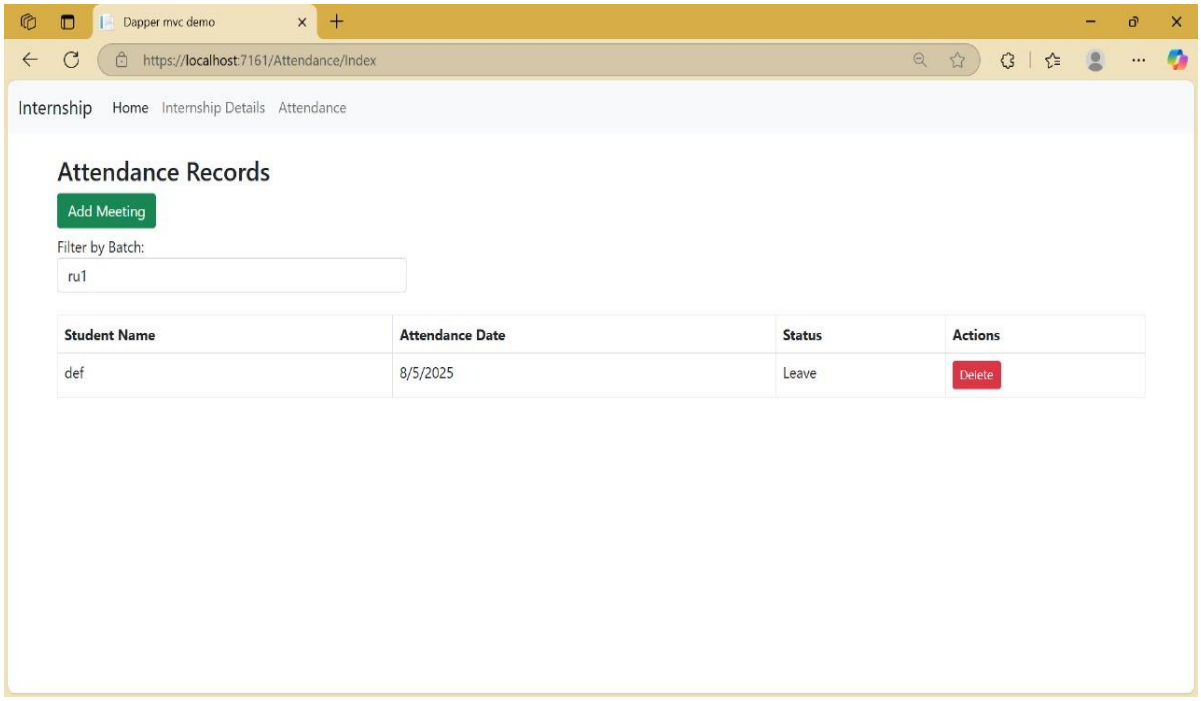

Fig.1.11. Add Attendance record Page

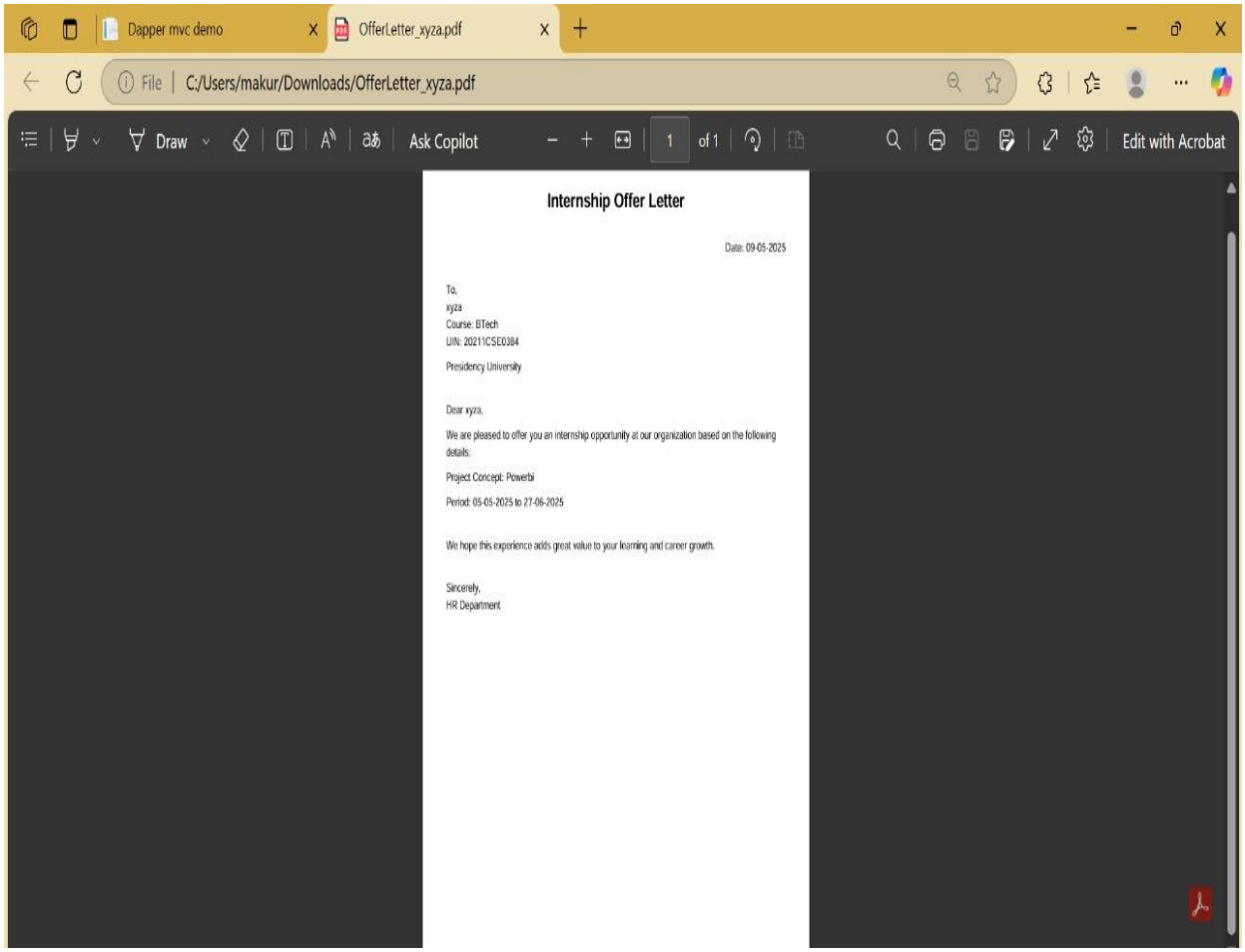

Fig1.12. Final offer letter

9% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Filtered from the Report

- Bibliography
- Cited Text

Match Groups

20 Not Cited or Quoted 9%
Matches with neither in-text citation nor quotation marks

0 Missing Quotations 0%
Matches that are still very similar to source material

0 Missing Citation 0%
Matches that have quotation marks, but no in-text citation

0 Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

3% Internet sources
5% Publications
8% Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

No suspicious text manipulations found.

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.

Match Groups

- **20** Not Cited or Quoted 9%
  Matches with neither in-text citation nor quotation marks
- **0** Missing Quotations 0%
  Matches that are still very similar to source material
- **0** Missing Citation 0%
  Matches that have quotation marks, but no in-text citation
- **0** Cited and Quoted 0%
  Matches with in-text citation present, but no quotation marks

Top Sources

- 3% Internet sources
- 5% Publications
- 8% Submitted works (Student Papers)

Top Sources

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	Student papers	
Presidency University		5%
2	Student papers	
Institute of Technology Blanchardstown		1%
3	Publication	
Jamuna S. Murthy, G. M. Siddesh, K. G. Srinivasa. "Cloud Security - Concepts, Appli...		<1%
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Swinburne University of Technology		<1%
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www.coursehero.com <1%

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www.governmentcontracts.us <1%

14 Internet

ijirt.org <1%

15 Internet

www.pickascholarship.com <1%

SUSTAINABLE DEVELOPMENT GOALS

The Internship Management System promotes important Sustainable Development Goals:

- SDG 4 (Quality Education)
- SDG 8 (Decent Work and Economic Growth)
- SDG 9 (Industry, Innovation, and Infrastructure).

It facilitates skill enhancement and employability through structured internship management, and drives innovation and operational effectiveness through technology, ensuring sustainable and inclusive growth.


SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS