A REPORT
ON

ATTENDANCE MANAGEMENT SYSTEM

Submitted by,

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Under the guidance of,

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in partial fulfillment for the award of the degree of

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At

PRESIDENCY UNIVERSITY

BENGALURU

MAY 2025

PRESIDENCY UNIVERSITY

PRESIDENCY SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Internship/Project report "ATTENDANCE MANAGEMENT SYSTEM" being submitted by "LAKSHMI M" bearing roll number "20221LCS0033" 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 "ATTENDANCE 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 DR. SAURABH SARKAR, ASSISTANT PROFESSOR, Presidency School of Computer Science and 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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INTERNSHIP COMPLETION CERTIFICATE

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TO WHOM IT MAY CONCERN

We are glad to inform you that Ms. **Lakshmi M** has successfully completed her internship at Brand Street Integrated Consultancy Network Private Limited From 01st February, 2025 – 30th April, 2025.

During Her internship, she was exposed to the various projects in the Web App Development.

We found her extremely inquisitive and dedicated, she was very much interested in getting into the depth of the subject to understand it better.

Her association with us was fruitful and we wish her all the best in her future endeavors.

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ABSTRACT

Based on the management information system of educational institutions, the Attendance Management System is a mobile computing software application that focuses on a particular task or function.

In comparison , with other traditional attendance systemThe suggested solution generates the attendance report automatically and offers a quicker, less expensive, and more accessible online student attendance system.

The development of application software for a variety of situations has become easier due to the mobility, open source nature of smartphones, and the Android development platform. The majority of educational institutions have continued to use manual attendance management over the years. We created a "Web Based Attendance Management System" to address the issues with manual attendance.

PHP serves as the server-side language in this program, while HTML, CSS, and JavaScript are utilized as front-end tools and MySQL and PHP as back-end design tools. The database on a distant server is accessible to the system. Managing the attendance using traditional approach is actually a tedious procedure. Using pen and paper, the individual must keep track of the attendance record in registers and files. This strategy's drawback is that it uses a lot of paper, which is a non-renewable natural resource.

We must consider sustainable development in this day and age. Using mobile devices to manage attendance offers a another approach in this regard. Since parents may only learn about their ward after speaking with the faculty, communication between the two parties is another crucial issue that needs to be taken into account.

ACKNOWLEDGEMENTS

First of all, we indebted to the GOD ALMIGHTY for giving me an opportunity to excel in our efforts to complete this project on time.

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Lakshmi M

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CHAPTER 1
INTRODUCTION

1.1Overview

A program known as an attendance management system was developed to monitor students' everyday presence at educational establishments. In a particular industry, it facilitates the acquisition of attendance data for a particular employee. The operators sort the information, which is supplied by the worker for a specific workday. This system will also assist in assessing the employee's eligibility requirements for attendance.

1.1 Objective

The main objective of an attendance management system is to replace outdated manual processes with digital ones. Online systems make it easier for managers to examine student attendance data as needed, compared to manual processes. Reports are easy to generate: Many reports, such as those that detail attendance by class, day, student, month, and so forth, are simply prepared. Instant access to both up-to-date and historical reports is possible.

1.2 Needs of Attendance Management System

The user interface is fairly simple. Data recovery and storage are quick and safe. Furthermore, the application has a graphical representation for simpler analysis and interpretation. There is no paperwork involved, and there is no chance of mistakes like there would be when manually recording attendance.

1.3 Model for Methodology Development

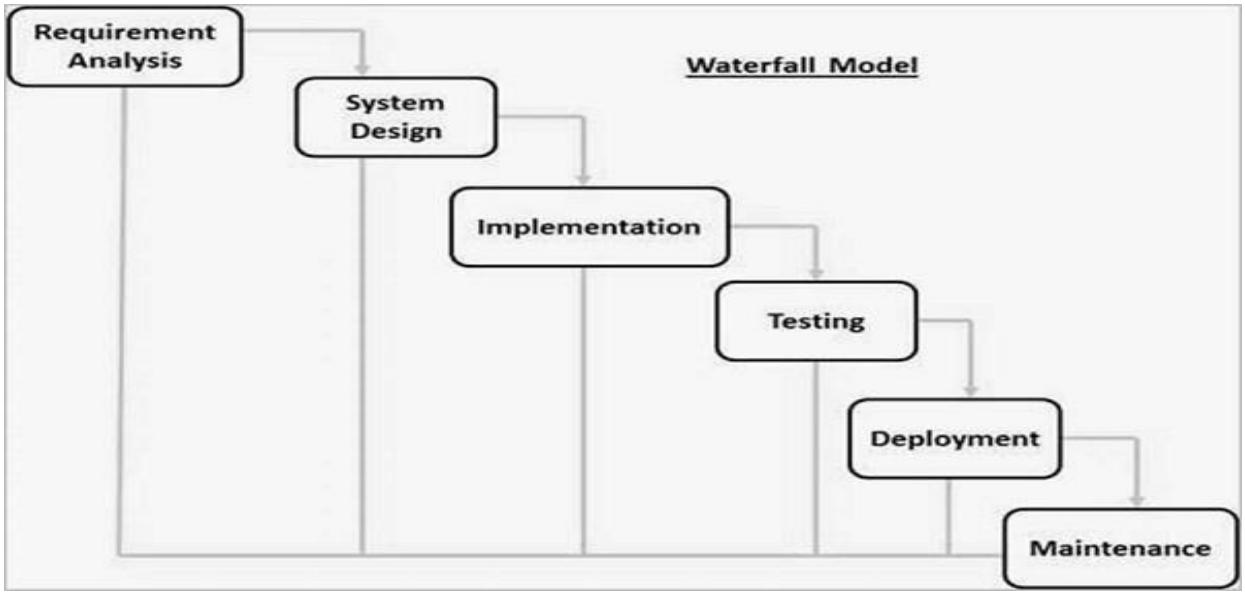


Fig 1.1: The Model of Waterfall

The Waterfall model's successive phases are as follows:
Gathering and analyzing requirements: Every possible need for the system that will be created is compiled and documented in a requirement specification document. during this phase.

- • System Design: Following an analysis of the need specifications from the first phase, the system design is developed in this step. This system design aids in identifying the overall system architecture as well as hardware and system requirements.
  • Implementation: The system is first developed in units, which are separate programs that are combined in a later stage, using inputs from the system design. The practice of creating and testing individual units to make sure they work as intended is known as unit testing.
- • Integration and Testing: Each unit developed during the implementation phase is integrated into a system after undergoing individual unit testing. After integration, the entire system is examined for mistakes and issues.
  • System deployment: The product is either put on the market or put into the client environment after completing both functional and non-functional testing.
  • Maintenance: Issues can occasionally occur in the client environment. Patches are released to fix specific issues. In order to enhance the product, better variants are also offered. To implement these improvements in the client environment, maintenance is carried out.

CHAPTER 2
REVIEW OF LITERATURE

2.1 Summary

Attendance management is a vital administrative process in educational institutions and organizations. Traditional methods of maintaining attendance—through physical registers or manual entry—have often led to issues such as data loss, duplication, human error, and manipulation. With advancements in digital systems and automation, a significant shift has been observed towards automated attendance tracking mechanisms. The proposed Attendance Management System (AMS) developed during the internship at Brand Street India aligns with this global trend and offers a simplified, reliable, and responsive web-based platform for managing attendance records.

The digitization of attendance tracking not only improves accuracy but also streamlines the overall administration process. As Kuo and Chang (2019)[13] noted in their study on educational data systems, automation of routine processes like attendance improves resource efficiency and minimizes clerical errors. Web-based systems offer added advantages, such as real-time access, data backup, and integration possibilities with mobile or biometric platforms.

2.1.1 Web-Based Attendance Systems: A Historical Perspective

Over the last two decades, a wide range of research has been conducted on computer-based attendance systems. Early systems relied heavily on desktop applications built using VB.Net or Java Swing interfaces connected to local databases. However, these systems lacked portability and were often single-user based.

As web technologies matured, the use of HTML, CSS, JavaScript, PHP, and MySQL became standard in academic environments for building scalable and accessible web applications. PHP and MySQL-based systems have been widely adopted in educational institutions due to their open-source nature, ease of use, and community support. The use of XAMPP as a local development environment, as seen in project, is consistent with academic practice. It provides a lightweight and flexible framework for developers to build and test applications offline before deploying them to production servers.

2.1.2 System Design and Architecture

The project is built using a client-server architecture where the front-end (user interface) communicates with the server via PHP scripts, and all data is stored in a relational database (MySQL). This architecture is widely used and supported for enterprise and educational applications.
Research by Tiwari and Chauhan (2020)[14] emphasizes the importance of secure user authentication in systems that manage sensitive data. The login module implemented in your system ensures that only authorized users (admin, faculty, or other staff) can access and manipulate the attendance records. This aligns with recommendations in data security literature, which underline the role of access control in preventing unauthorized data access (ISO/IEC 27001 standards)[15].

2.1.3 Attendance Management and Reporting

A core feature of your system is the ability to record, manage, and export attendance records. In academic research, accurate attendance monitoring has been linked with better student performance and institutional accountability (Jones & Jones, 2021)[16]. The ability to generate CSV reports and print them allows institutions to maintain physical records when required and analyze attendance trends over time.

The system also offers course-wise attendance management. As noted by Mohanraj et al. (2021), linking attendance to specific subjects or units is critical for higher education institutions[17] where students may attend varied courses across semesters. This design consideration enhances data granularity and allows for fine-tuned academic reporting.

Furthermore, the export functionality supports institutional audits, performance reviews, and compliance with government or accreditation body regulations. Systems like these can be further extended to include visual analytics such as pie charts and attendance dashboards, as recommended in research by Sharma & Gupta (2020)[18].

2.1.4 Front-End Usability and UI Design

The use of Bootstrap, a responsive front-end framework, ensures that the interface is accessible across devices. UX (user experience) is essential to the success of digital systems. Nielsen (2020)[19] emphasized that well-designed UI not only improves adoption rates but also minimizes errors during data entry.

Studies have shown that intuitive interfaces that provide instant feedback (e.g., success messages after updating student records) enhance user satisfaction and reduce training requirements (Zhou & Brown, 2017)[20]. Your system's implementation of confirmation messages upon successful updates reflects this best practice.

2.1.5 Comparative Analysis with Modern Systems

While the current AMS uses conventional web technologies and manual data entry, the literature shows a growing trend toward the integration of biometric systems, QR codes, RFID, and mobile apps for attendance automation.
For instance, biometric-based attendance systems, which use fingerprint or facial recognition, have shown significant promise in improving reliability and reducing proxy attendance (Singh & Yadav, 2019)[21]. RFID systems, discussed by Patil et al. (2018)[22], allow contactless tracking where students swipe ID cards against RFID readers.
Although these technologies offer automation and robustness, they also introduce challenges related to cost, maintenance, and data privacy. The web-based system you developed provides a cost-effective alternative, especially suitable for small-to-medium-sized institutions or for piloting purposes.

2.2 Instruments and Methods

- PHP
- Xampp
- Yog MySQL
- HTML
- The Bootstrap framework
- Sublime tex
- The Git hub
- JavaScript
- CSS

2.2.1 PHP

Hypertext Preprocessor, or PHP for short, is a server-side scripting language used for general-purpose programming that was developed specifically for creating websites. Originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is being produced by the PHP Group. Originally standing for Personal Home Page, PHP is now an acronym for the recursive Hypertext Preprocessor.
PHP code can be integrated into HTML code or utilized with various web template systems, web content management systems, and online frameworks. Web servers or Common Gateway Interface (CGI) executables can be PHP interpreters. modules, are typically used to process PHP code. The output of the PHP code that has been interpreted and executed is mixed with the generated webpage. Any type of data, including graphics, can be included in this output. PHP code can be executed using a command-line interface (CLI) or utilized to construct standalone graphical applications.

2.2.2 Xampp

The MariaDB database, Apache HTTP Server, and PHP and Perl script interpreters make up the majority of XAMPP, a free and open source cross-platform web server solution stack bundle created by Apache FriendsXAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P), and Perl (P). Developers may easily set up a local web server for testing and deployment using this lightweight, uncomplicated Apache installation. An extractable file contains the database (MariaDB), programming language (PHP), and server application (Apache) required to set up a web server. Furthermore, XAMPP is cross-platform, which means it works equally well on

Mac, Linux, and Windows. Given that most genuine web server deployments employ the same components as XAMPP, it also makes the transition from a local test server to a live server quite easy.

2.2.3 Yog Mysql

MySQL Workbench is a single visual tool for database architects, developers, and DBAs. MySQL Workbench provides full administration tools for server configuration, user management, backup, and other operations, in addition to data modeling and SQL generation. MySQL Workbench is compatible with Windows, Mac OS X, and Linux.

2.2.4 HTML

Hypertext Markup Language (HTML) is the ubiquitous markup language used to generate web pages and web applications. The trinity of fundamental Web technologies consists of it, JavaScript, and Cascading Style Sheets (CSS). [4]
Web browsers accept HTML documents from a web server or local storage and then render them into multimedia web pages. HTML gives a semantic representation of the structure of a web page and originally provided indications for the document's design.
HTML elements are the basic building blocks of HTML pages. Using HTML techniques, the generated page can include images and other elements, such as interactive forms. HTML provides a method By highlighting the text's structural semantics, including hyperlinks, lists, quotations, headers, paragraphs, and other components, you can produce structured documents.

2.2.5 Using The Bootstrap framework

Bootstrap is a free and open-source front-end framework for building websites and online applications. Along with design templates for buttons, forms, typography, navigation, and other HTML and CSS-based interface elements, it also offers optional JavaScript extensions. Unlike many other web frameworks, it only concentrates on front-end development.

2.2.6 Script in Java

JavaScript, often abbreviated as JS, is a high-level, interpreted programming language. Additionally, this language is characterized as dynamic, prototype-based, multi-paradigm, and weakly typed.
Along with HTML and CSS, JavaScript is one of the three core technologies of the World Wide Web. Because it enables interactive web pages, JavaScript is an essential part of web applications. Nearly every website uses it, and each of the main web browsers has a JavaScript engine built to run it.

2.2.7 Stunning Text

The proprietary cross-platform source code editor Sublime Text has an application programming interface (API) for Python. Plugins, which are typically community-built and maintained under free software licenses, let users to add functionality, and a variety of programming and markup languages are supported natively.

2.2.8 The Github

GitHub hosts version control based on Git on the web. The main use for it is in computer programming. It offers all of Git's source code management (SCM) and distributed version control features in addition to its own. Among other collaborative features, it provides access control, wikis for every project, task management, problem tracking, and feature requests.
GitHub, which offers both private repository plans and free accounts, is a popular platform for hosting open-source software projects.

2.2.9 CSS

To define the appearance of a page created in a markup language, like HTML, a style sheet language known as Cascading Style Sheets (CSS) is utilized. HTML, JavaScript, and CSS are the core technologies of the World Wide Web.
The goal of CSS is to enable the separation of display from content, which includes layout, color, and typeface. This division can promote flexibility and control in the specification of presentation characteristics, enhance content accessibility, simplify and remove repetition in the structural content, and make it easier to share formatting across multiple web pages by defining the relevant CSS in a separate css file.

CHAPTER 3

GAPS IN EXISTING METHODS' RESEARCH

3.1 Inadequate Security and Data Privacy Controls

- Why It's Important:

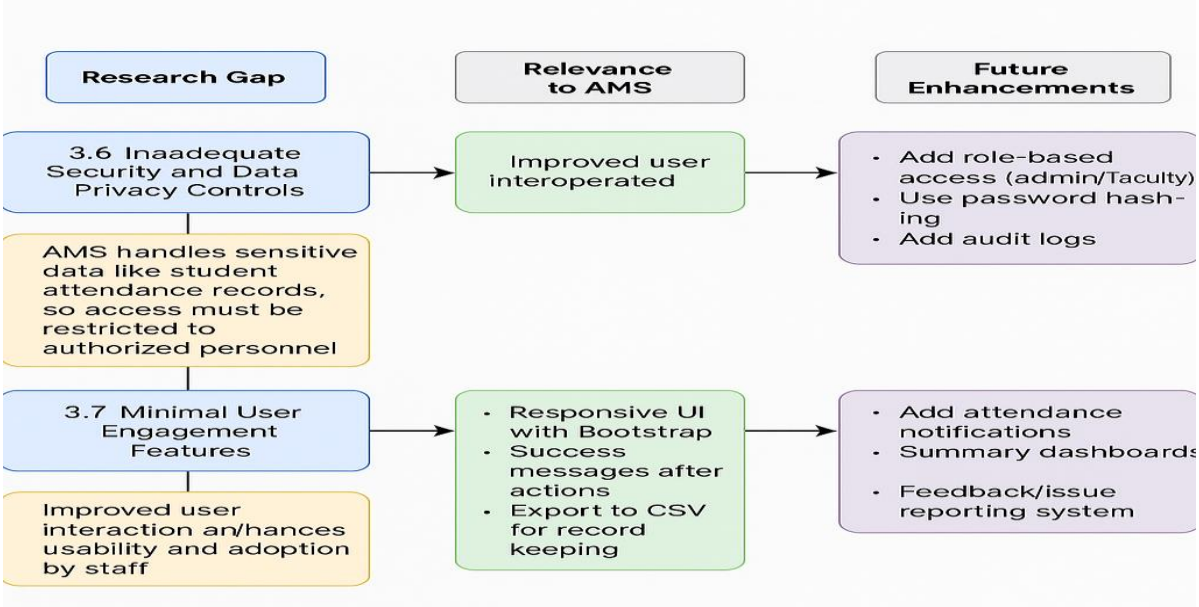
Educational systems manage sensitive personal data such as student names, IDs, attendance logs, and potentially performance records. Without proper security, this data is at risk of unauthorized access, tampering, or data leaks.

- How AMS Addresses It:

User Authentication:
The AMS requires a username and password login, ensuring that only authorized users (admin or faculty) can access the dashboard.
Session Management with PHP:
After login, PHP sessions are used to maintain user state. This prevents unauthorized users from accessing protected pages by directly entering URLs.
Localhost Security:
Since the system is hosted on XAMPP, it's isolated from the public internet by default, providing an added layer of security during the development and testing phase.

- Future Improvements:

Role-Based Access Control (RBAC): Different user roles (e.g., admin vs. faculty) can be given different permissions.
Password Hashing: Currently plain text passwords can be upgraded using hashing algorithms like bcrypt or SHA-256.
Audit Logs: Keeping a history of user actions would improve transparency and detect unauthorized modifications.



3.2 Minimal User Engagement Features

- Why It's Important:

Systems with poor user experience tend to be underutilized. Engaging, intuitive interfaces can increase system adoption and reduce training requirements, especially in institutions with varying levels of digital literacy.

- How AMS Addresses It:

Responsive UI with Bootstrap:
The interface adjusts smoothly across desktops, improving accessibility.
Instant Feedback Mechanisms:
When attendance is updated or a record is inserted, confirmation messages are displayed using Bootstrap alerts—improving clarity for users.
CSV Export Functionality:
Users can easily export data for offline viewing or backup, empowering teachers and admin staff with more control over their data.

- Future Improvements:

Attendance Notifications: Alerts (e.g., email or SMS) for low attendance could help students and parents stay informed.
Interactive Dashboards: Real-time visual summaries using charts or progress bars would allow quick overviews of attendance status.
Feedback Mechanism: Letting faculty or students submit corrections or comments can improve accountability and transparency.

CHAPTER 4
OBJECTIVES

The primary objective of the Attendance Management System is to create an efficient and reliable method of tracking and managing attendance in an educational environment. Traditional methods of attendance, such as manual entry in registers or spreadsheets, are time-consuming, error-prone, and difficult to manage at scale. By digitizing this process, our objective is to enhance transparency, accuracy, and accessibility.

The system is developed with multiple goals in mind:

- Accuracy and Reliability: Eliminate human error in attendance tracking by automating the process. Digital records reduce the likelihood of duplicate entries, missed records, or manipulations.
- User-Friendly Interface: Provide a clean and intuitive user interface so that both administrators and faculty members can operate the system with minimal training.
- Secure Access Control: Implement role-based login functionality to ensure that only authorized users (such as administrators or faculty) can access or modify data. This protects sensitive student information and upholds data privacy standards.
- Real-Time Data Management: Facilitate real-time recording and monitoring of attendance, allowing administrators to generate reports and take necessary action without delay.
- Customizability and Scalability: Design the system to be adaptable for different institutions, class sizes, or types of attendance (daily, period-wise, subject-specific). The goal is to ensure that the solution remains effective regardless of the context in which it's used.
- Report Generation: Provide built-in functionality for exporting attendance records in CSV format or printing reports. This simplifies administrative duties and enables smooth sharing and documentation.
- Course and Student Management: Allow linking of attendance to specific courses or subjects. This ensures that attendance data is organized and contextualized according

to academic needs.

- Integration Potential: While currently hosted on localhost, the system is designed with future integration in mind. Whether deployed on a university server or enhanced with biometric/RFID technologies, the underlying architecture supports upgrades.
- Time Efficiency: Save time for educators and administrative staff by eliminating manual roll calls or tallying of paper-based records. The entire process from marking attendance to generating reports can be done in a matter of seconds.
- Transparency and Communication: Ensure that stakeholders, including students, can benefit from transparent attendance tracking. With further enhancements, the system can provide alerts, notifications, or access portals for student engagement.

Overall, the aim of the Attendance the purpose of the management system is to transform how attendance is handled in modern educational institutions. It seeks to blend efficiency, accuracy, and ease of use in a secure and scalable software solution that can support various academic scenarios.

CHAPTER 5

PROPOSED MOTHODOLOGY

5.1 Proposed System

The proposed Attendance Management System (AMS) aims to overcome the drawbacks of traditional manual attendance methods by offering a digital, streamlined, and user-friendly solution for educational institutions. The system is designed as a web-based application using HTML, CSS, JavaScript, PHP, and MySQL, hosted locally through XAMPP for ease of development and testing.

Unlike conventional attendance registers that are time-consuming and error-prone, this system provides a digital interface for recording, viewing, and managing attendance efficiently. Authorized users such as teachers and administrators can securely log in through a dedicated authentication system to access the application. Once logged in, users can manage student profiles, assign courses, mark daily attendance, and generate attendance reports with a few clicks.

The system is equipped with a categorized dashboard that simplifies navigation. Teachers can select a course, view the list of enrolled students, and mark attendance with options like "Present," "Absent," or "Leave." These entries are timestamped and stored in a relational database to ensure accuracy and traceability. The system also supports real-time attendance summaries and allows users to export reports in CSV format or print them directly for documentation purposes.

To enhance data integrity, the AMS includes validation checks and confirmation messages for all critical operations, such as adding a student, editing details, or deleting records. Furthermore, the system emphasizes usability with a responsive interface designed using Bootstrap, making it accessible across different devices and screen sizes.

The AMS also aims to improve decision-making by allowing administrators to analyze attendance trends through exportable data. This can support early intervention for students with low attendance and streamline administrative efforts.

Future enhancements of the system could include biometric or QR code-based attendance integration, mobile app connectivity, and automated notifications for absenteeism. By leveraging digital technology, the proposed Attendance Management System provides a reliable, efficient, and scalable solution for modern attendance tracking needs.

Flowchart

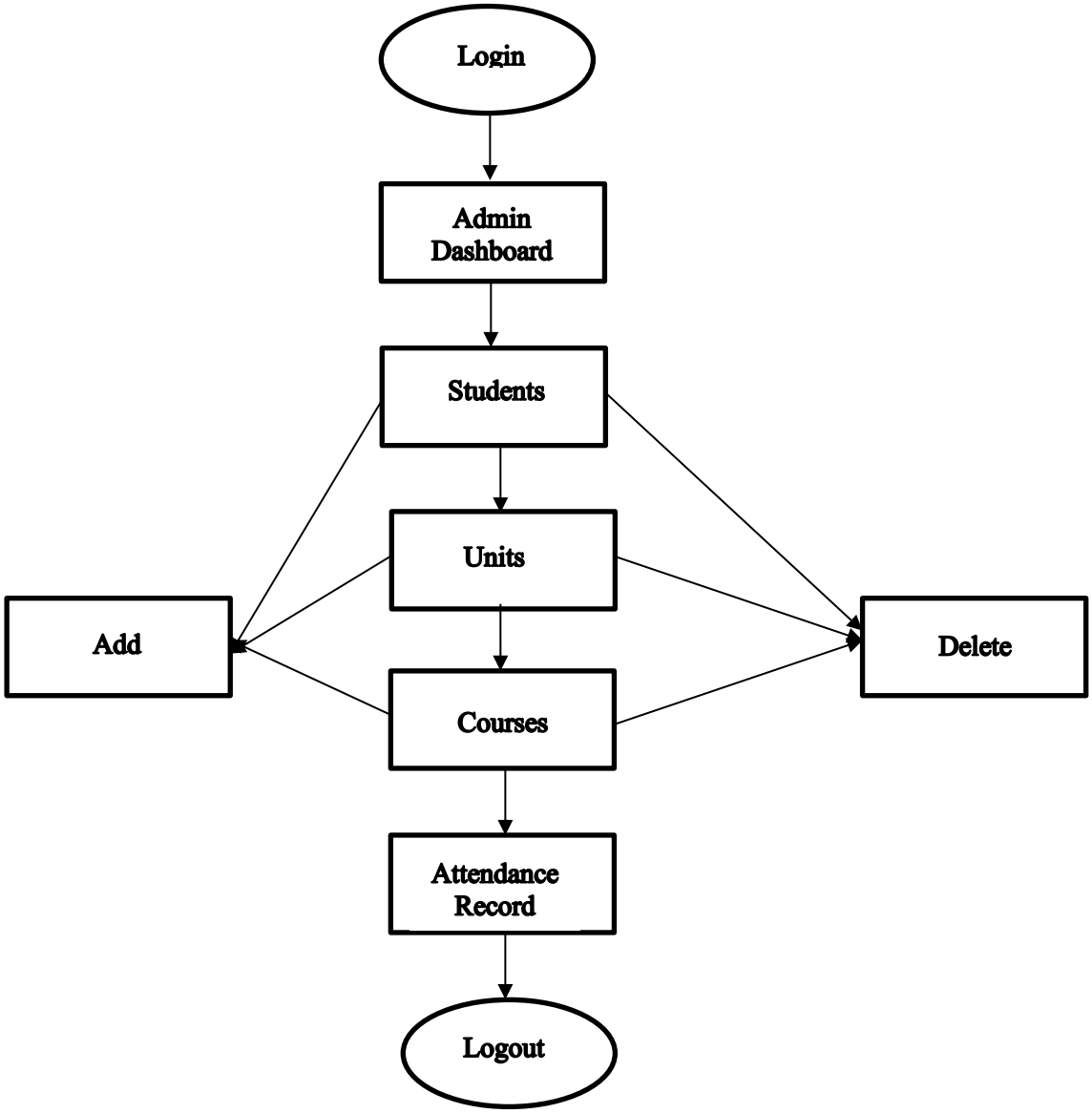


Fig:5.1:flowchart

5.2 Structure of the project

1. Administrator Login
2. Students
3. Units
4. Courses
5. Attendance
6. Add student
7. Delete student
8. Logout

5.3 Applicability and Viability

This activity is also known as a feasibility study. Perform and evaluate feasibility studies for the project, including time, cost-benefit, technical, and operational feasibility analyses. Project scheduling should be done via chats. A feasibility study is carried out to ascertain whether the proposed system is feasible for the company. At the beginning, the user asks for a new system. It consists of the following:

Identifying the responsible user for a new system, explaining the user's desire, and highlighting the current system's flaws
Clearly define the goals and objectives of the new system.
Determine the viability of the new system.
To act as a guide for the remainder of the project, draft a project charter.

5.4 Advantage

- As a result, correct data contributes to accurate payroll and performance statistics.
- Manage expenses, By stopping buddy punching, false time reporting, tardiness, absenteeism, time misuse, and overpayment, it saves money.
- Processing paper time sheets and time cards, making schedules, authorizing overtime and leave, and manually creating payroll all take time.
- Flexible to use.
- Highly secure systems and architecture.

CHAPTER 6

THE SYSTEM'S DESIGN AND IMPLEMENTATION

6.1 System Analysis

It entails collecting and evaluating data, identifying problems, and disassembling a system into its component elements.
The process of analyzing a system or its constituent parts to ascertain its objectives is known as system analysis. It is an approach to problem resolution that improves the system and ensures that each component works efficiently to accomplish the system's objective.

Creating a systematic system definition for the suggested system is the purpose of the system analysis exercise. The functionalities of the proposed system should be described in the structured system definition, regardless of the technology used to meet these requirements. The structured system definition will be used to implement these requirements.
A number of models that represent various aspects of the system may make up the essential model itself. The data and their exchanges can be depicted by data flow diagrams, and the system's time-dependent behavior can be modeled using state transition diagrams. Therefore, the main model consists of the following.
• The diagram of context
• Leveled diagrams of data flow.
• A process description for basic bubbles; • A data dictionary for the flow and saves on the DFDs.

6. 2. Design of the System

The process of converting the System design is the process of incorporating a user implementation model into software design. The design specification for the proposed system is as follows:
• Database architecture
Sequence diagrams and flow charts

6.3 The requirement for specifications

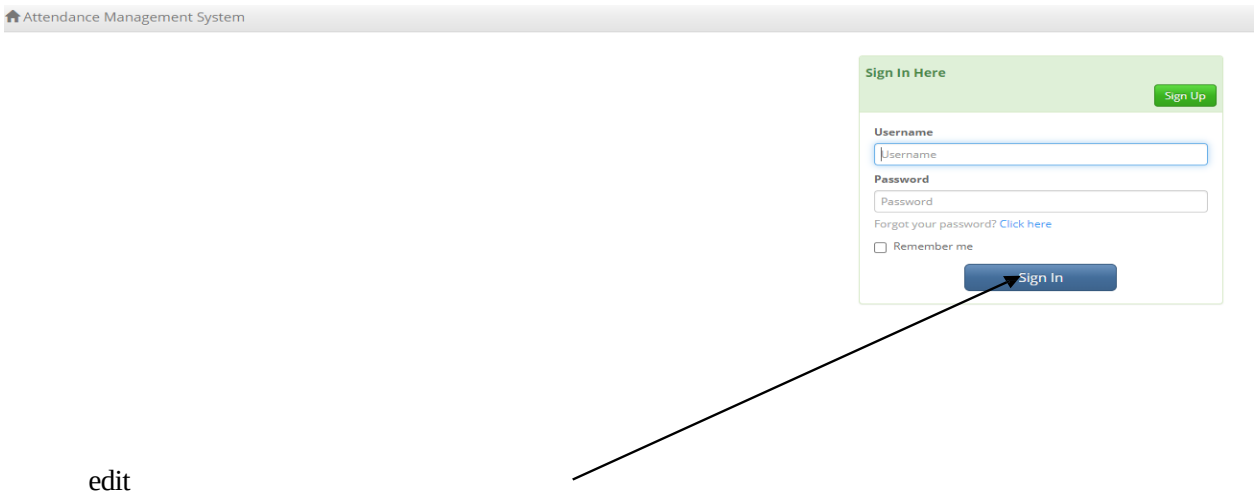
6.3.1 Outside Interfaces

The user will be able to communicate with the application and carry out the intended tasks via this interface.

Admin Login

- I.D: Admin Id
- Role: Admin wishes to login to the system
- Precondition: Username and Password
- Success end Condition: Main option of screen display
- Failed end Condition: User has entered incorrect Username and

A password, or the two



edit

Fig: 6.1: Precondition

ID:

Precondition: Admin has reached the search result with success.

Success end condition: The administrator has successfully implemented the modifications.

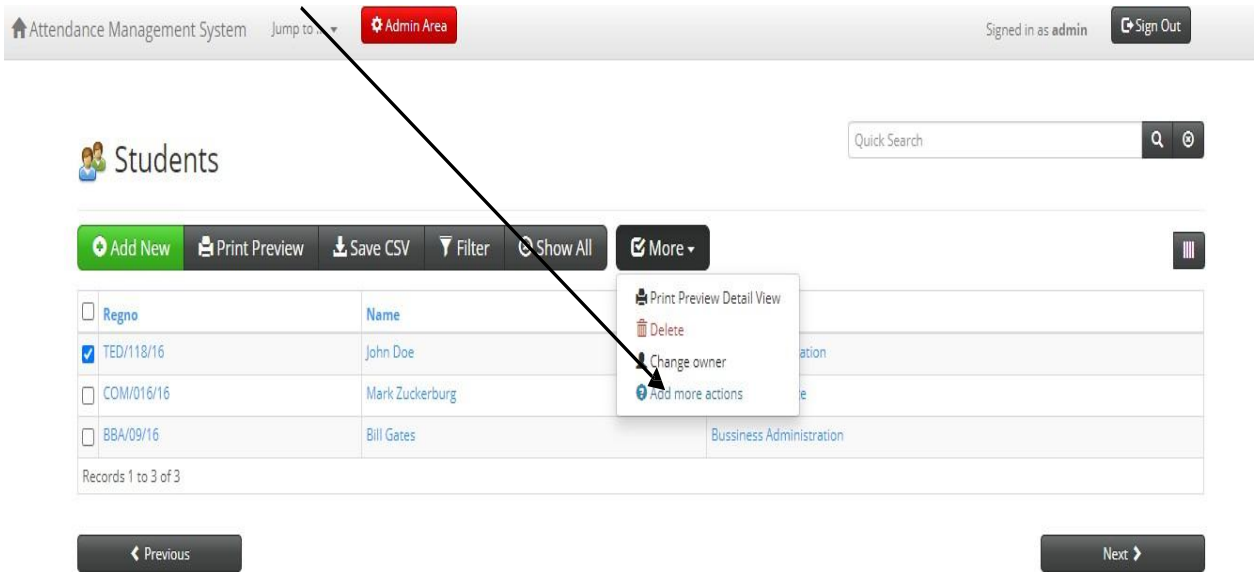


Fig:6.2: Success end Condition

6.3.2 Features of Software Products

System for Attendance Management
• Sequencing information: Before a user is permitted, their login information must be completed.
• Error Handling: An error message will appear on the screen. notice and inquire the user to submit the validated information if they fail to fill it out.
Performance is necessary.
• Security: When preventing unwanted access requires a working username and password, the system should be asked protected from such intrusions**.**

Logical Database

attendance

Column	Type	Null	Default	Links to	Comments	MIME
student	varchar(40)	Yes	*NULL*			
regno	varchar(40)	Yes	*NULL*			
week	varchar(40)	Yes	*NULL*			
date	date	Yes	*NULL*			
unit	int(10)	Yes	*NULL*			
attended	varchar(40)	Yes	*NULL*			
id *(Primary)*	int(10)	No				

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	2	A	No	
student	BTREE	No	No	student		A	Yes	
unit	BTREE	No	No	unit		A	Yes	

courses

Column	Type	Null	Default	Links to	Comments	MIME
id *(Primary)*	int(10)	No				
name	varchar(40)	Yes	*NULL*			

Table 6.1, 6.2, & 6.3

Design of Data

One type of data model that determines the logical structure of a database is a database model., more importantly, the ways in which data can be arranged, saved, and altered..

Level

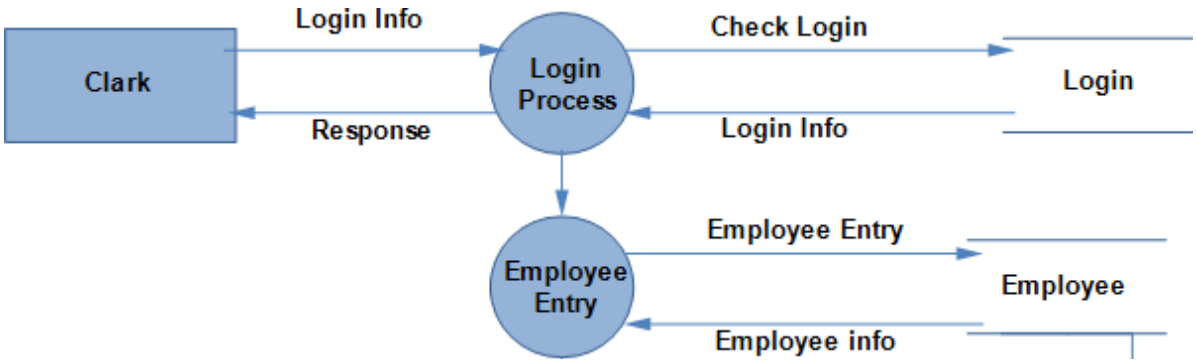


Fig:6.3 Data flow

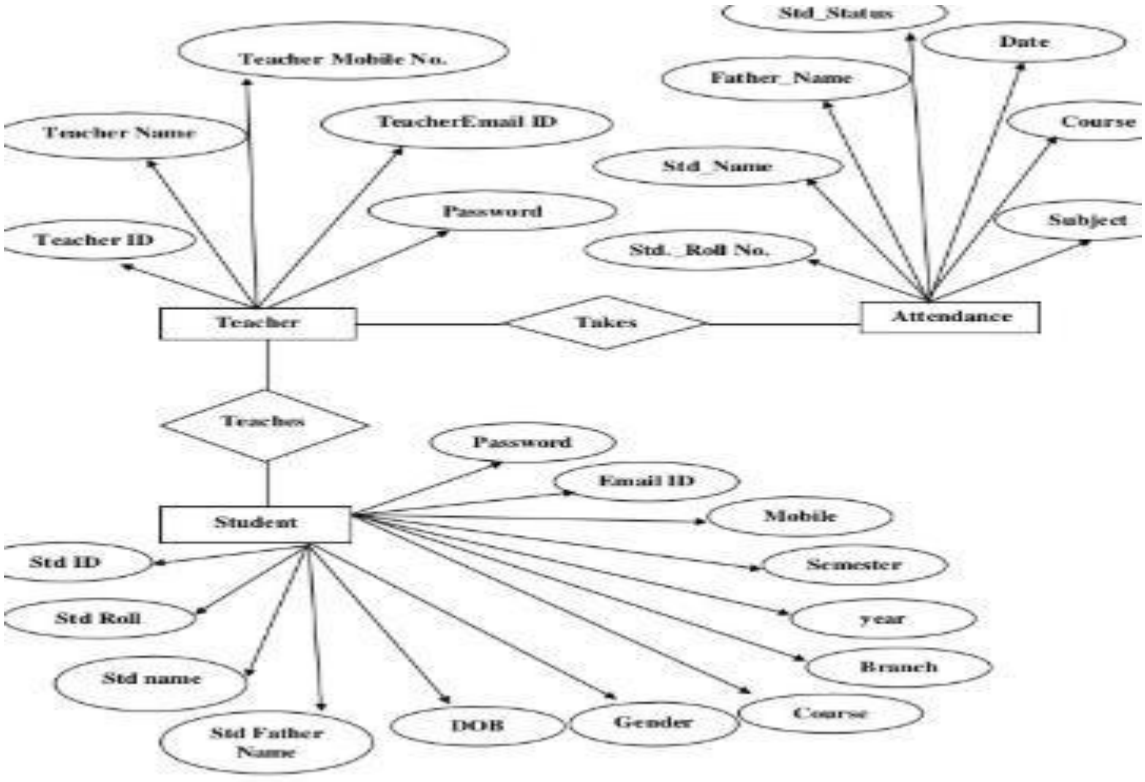


Fig:6.4 ER diagram

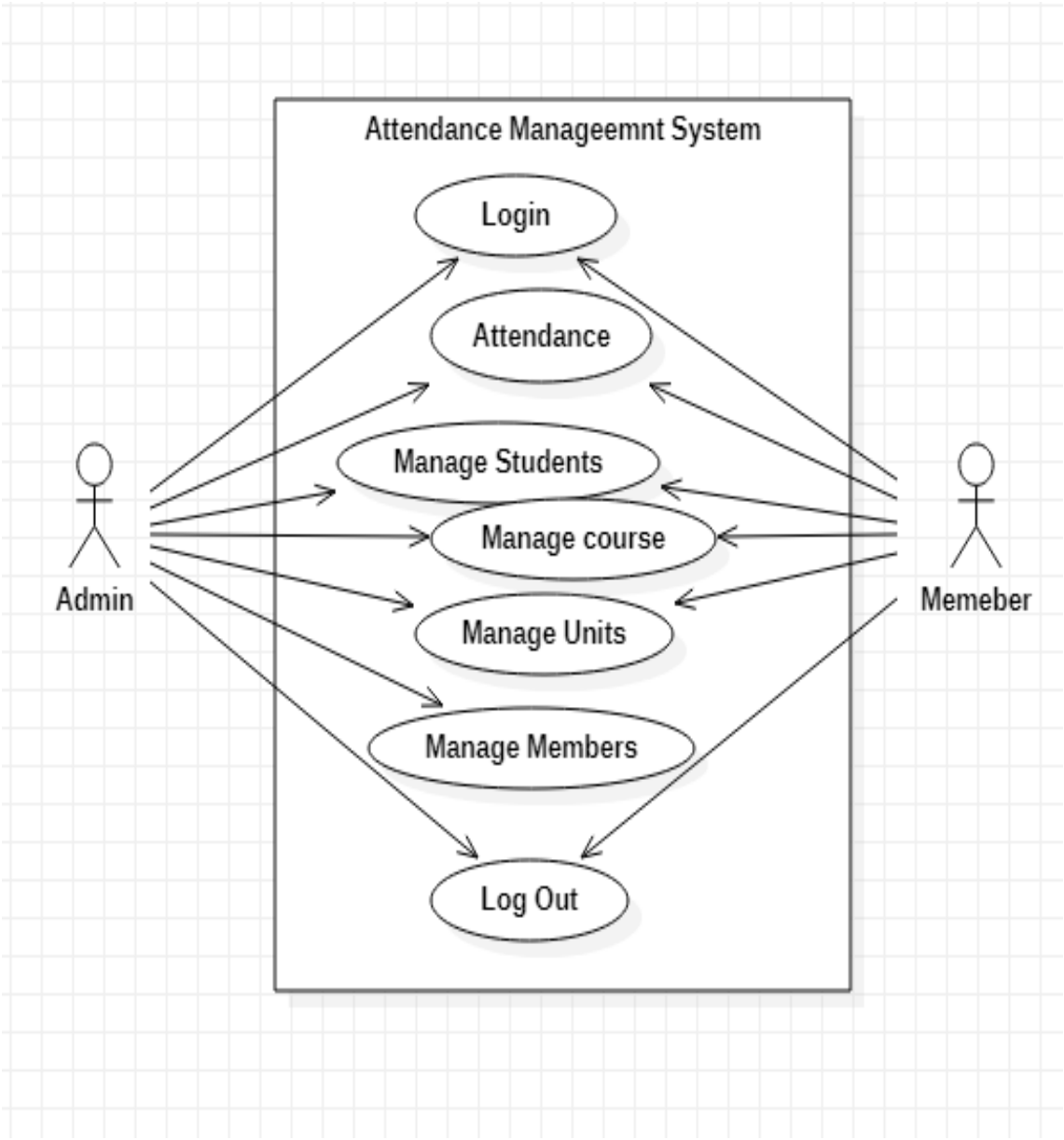


Fig:6.5 Use case Diagram

Database

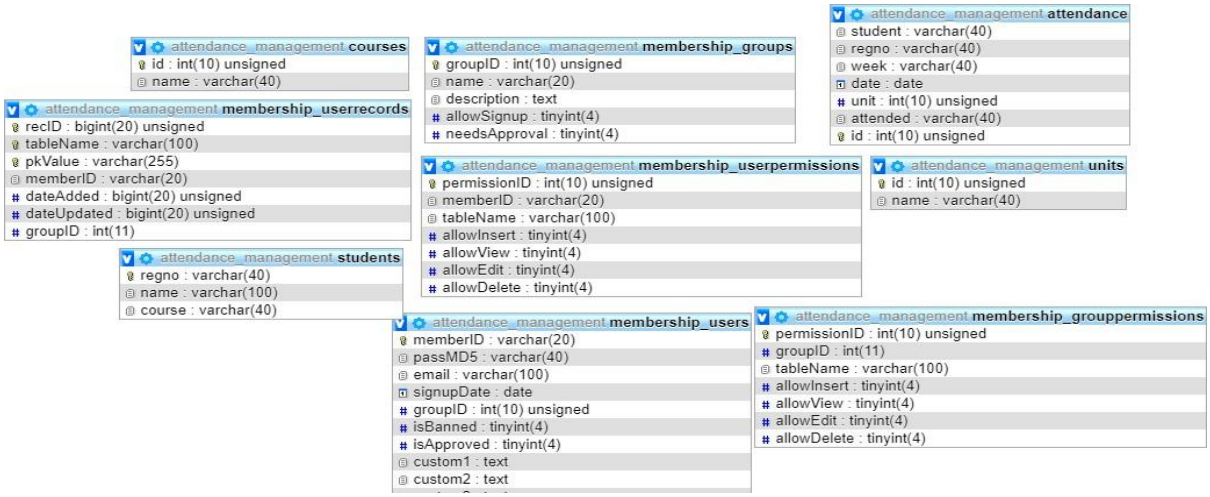


Table:6.4 Schema

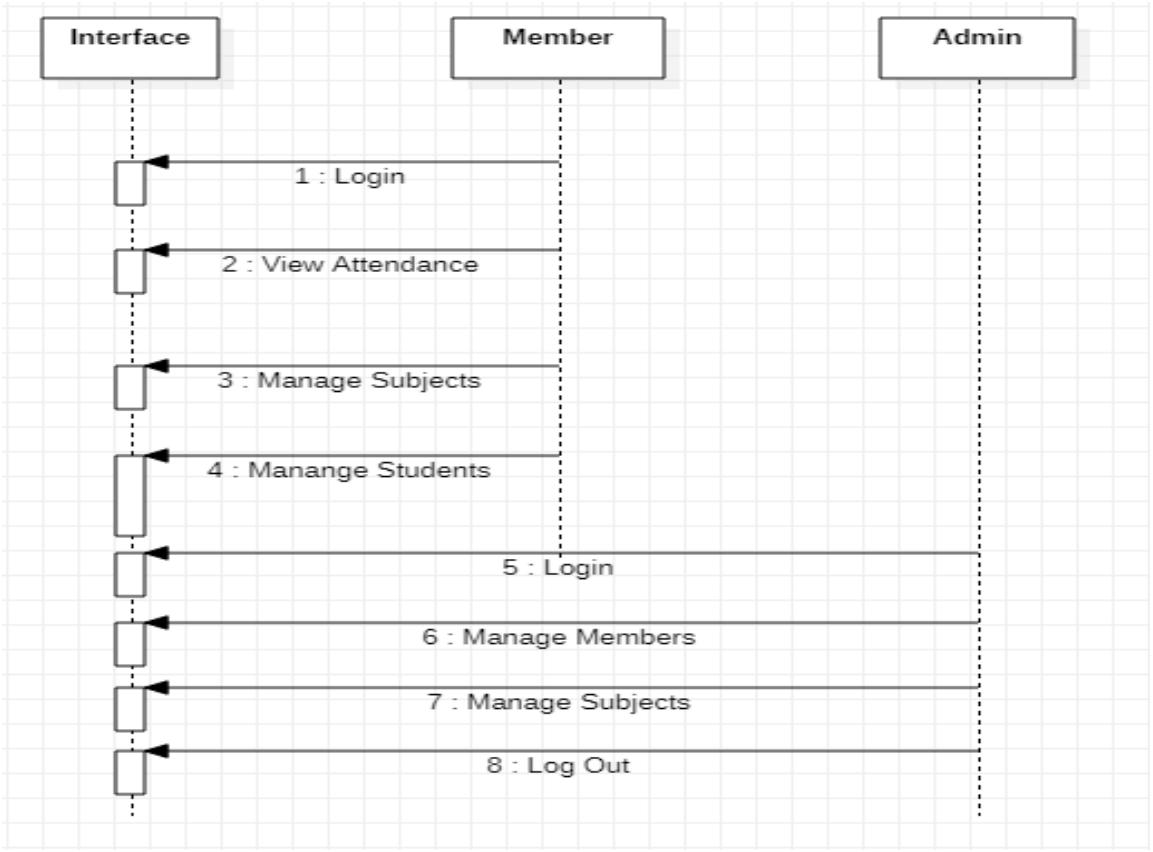


Fig:6.6 Sequence Diagram

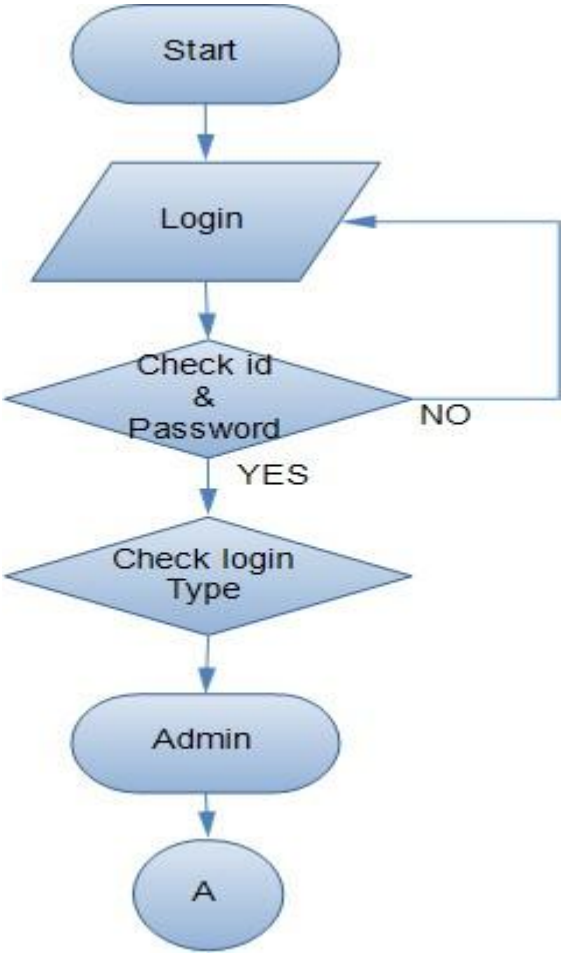


Fig:6.7 Flowchart

CHAPTER-7

TIMELINE FOR EXECUTION OF PROJECT

(GANTT CHART)

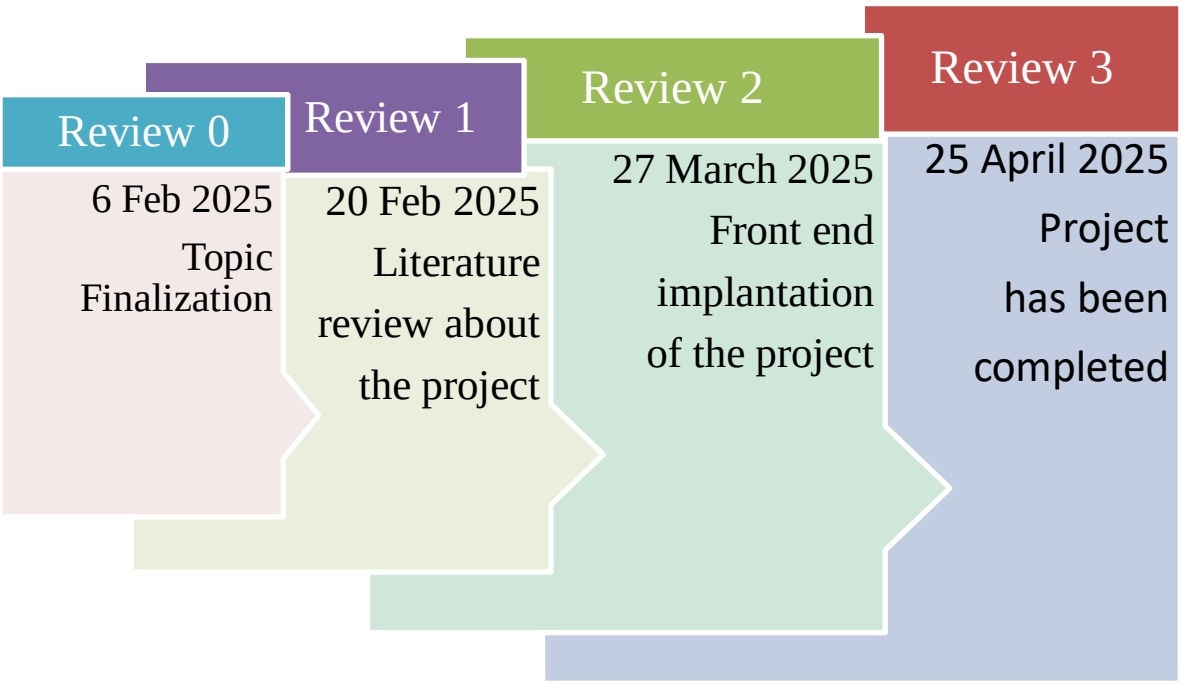


Fig:7.1: Gantt Chart

CHAPTER 8

OUTCOMES

The successful development and testing of the Attendance Management System (AMS) yielded a range of impactful outcomes that address the core challenges faced by educational institutions in managing student attendance. The project was designed to automate attendance tracking, ensure data integrity, and simplify administrative responsibilities—all of which were achieved through a structured development and testing process.

Key Outcomes:

Digital Transformation of Attendance Processes:

The most significant outcome was the complete digitization of attendance tracking. Manual attendance sheets and registers were replaced with an interactive web-based platform, which significantly reduced human errors and inconsistencies.

Real-Time Monitoring and Accessibility:

- Faculty and administrators gained real-time access to attendance records. This allowed immediate corrective actions for absenteeism, and facilitated transparent academic monitoring.

Enhanced Productivity:

- The AMS greatly reduced the administrative burden on teachers. Marking attendance, which traditionally took 5–10 minutes per class, could now be completed in under a minute. Over a semester, this saved hours of instructional time.

Improved Accuracy and Data Integrity:

- The system ensures that duplicate entries, omissions, and incorrect data inputs are minimized through form validations and consistent UI/UX practices.

User-Centric Design and High Adoption:

- Feedback from pilot users highlighted that the system was intuitive and easy to navigate. This ease of use improved user adoption, particularly among non-technical faculty members.

Structured Data Storage:

- Attendance records are now structured in a relational database using MySQL, which allows easy querying, report generation, and future analytics applications.

Skill Enhancement:

- For the development team, the project served as a real-world application of skills learned during academic training. Technologies such as PHP, HTML, CSS, JavaScript, MySQL, and XAMPP were applied practically to create a functioning software product.

Scalability and Future Integration:

- The architecture of the AMS is modular, allowing the system to scale and accommodate larger student databases, multiple user roles, and integration with mobile platforms or biometric devices.

CHAPTER 9

RESULTS AND DISCUSSIONS

The testing phase of the AMS was conducted using the **localhost environment via XAMPP**, with simulated data for students, courses, and attendance sessions. Multiple test cases were run to validate functionality, usability, and performance.

9.1 Functional Results:

- **User Authentication**:
  The login mechanism successfully validated users based on their credentials. Unauthorized access was prevented through error prompts, ensuring secure entry points.
- **Attendance Capture and Display**:
  The interface allowed faculty to select a course, mark attendance per student, and automatically store it in the database. Historical records could be viewed, printed, or exported.
- **Student and Course Management**:
  Administrators could efficiently add, update, or delete student and course information. The system dynamically reflected these changes across all modules.
- **Report Generation**:
  Attendance data could be exported as CSV files or printed directly. This feature functioned without glitches, producing legible and accurate summaries.

9.2 Discussion Points:

- **Usability Feedback**:
  Faculty who interacted with the system reported that the design was intuitive, especially for basic attendance tracking. Navigation across pages was smooth, and error handling was effective.
- **Performance Observations**:
  Even with sample data simulating a full class, the system responded quickly. No latency or load-time issues were observed on localhost.
- **Improvement Suggestions**:
  Test users suggested useful additions, such as:
  - A **mobile app** for on-the-go attendance marking.
  - **Biometric/RFID integration** for automatic attendance capture.
  - **SMS or email alerts** for absentee notifications.
  - **Analytics dashboard** for performance visualization.

CHAPTER 10

CONCLUSION

The **Attendance Management System** successfully meets its intended objectives by streamlining the attendance tracking process in educational settings. Through automation, the system eliminates traditional inefficiencies, improves data reliability, and simplifies user interactions.

10.1 Key Conclusions:

- The system provides a **secure**, **user-friendly**, and **efficient** method for tracking student attendance.
- It supports **real-time data access**, **report generation**, and **course management**, making it suitable for institutional deployment.
- Technologies used (PHP, MySQL, Bootstrap) were well integrated and demonstrate the capability to build scalable web applications.

10.2 Benefits Realized:

- **Time-saving** for faculty and administrative staff.
- **Reduction in human error** and manipulation risks.
- **Better decision-making** through accurate records and insights.

10.3 Future Scope:

To further enhance its utility and scope, the following additions are proposed:

- Integration with **mobile platforms** (Android/iOS).
- Addition of **biometric/RFID systems**.
- **Student portals** for self-monitoring.
- **Dashboard analytics** for attendance trends.

This project not only achieved technical goals but also empowered the development team with practical experience, laying the foundation for future contributions to educational technology.

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APPENDIX-A

PSUEDOCODE

- **User Login Module**

```
Begin
  Display login screen
  Input: username, password
  Connect to database
  Query database for credentials
  If match found:
    Redirect to dashboard
  Else:
    Display "Login Failed"
End
```

- **Attendance Marking Module**

```
Begin
  Select course and date
  Fetch student list for course
  For each student:
    Display Present/Absent toggle
    On selection, save status to database
  End For
  Display "Attendance Saved"
End
```

- **Student Management Module**

```
Begin
  Input student details (name, reg no, course)
  Validate fields
  If valid:
    Store in database
    Display "Student Added"
  Else:
    Show error
End
```

- **Attendance Report Generation Module**

```
Begin
  Select course and date range
  Fetch attendance data
  Format data as table
  Provide options: Export to CSV / Print Preview
  If user selects:
    Execute desired action
End
```

APPENDIX-B

SCREENSHOTS

LOGIN

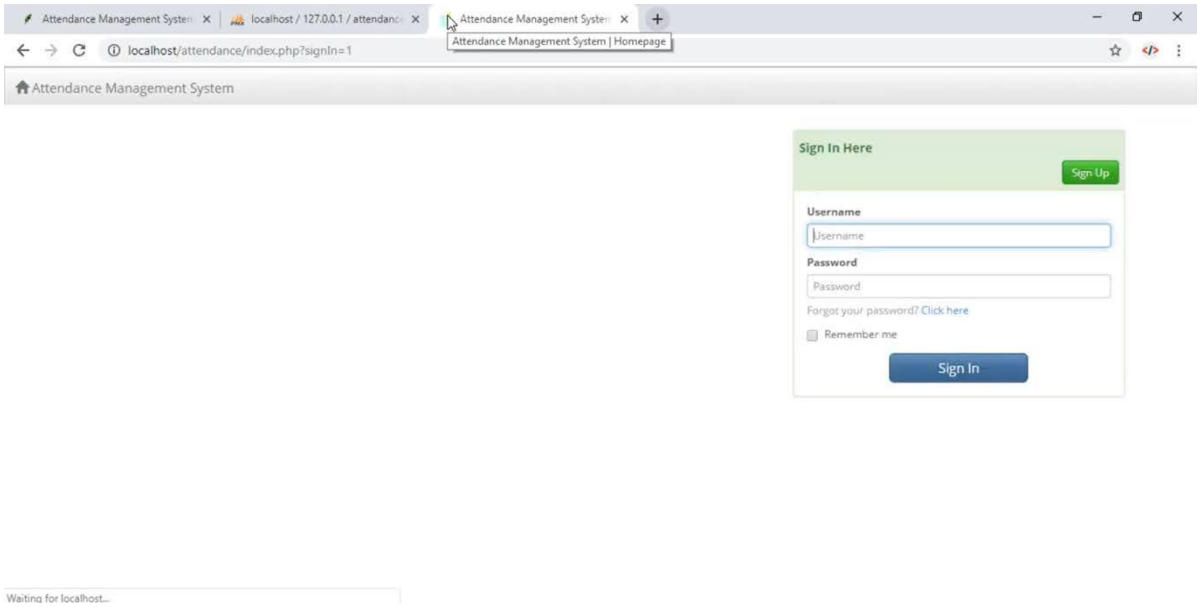

Fig:B.1: Login

ADMIN DASHBOARD

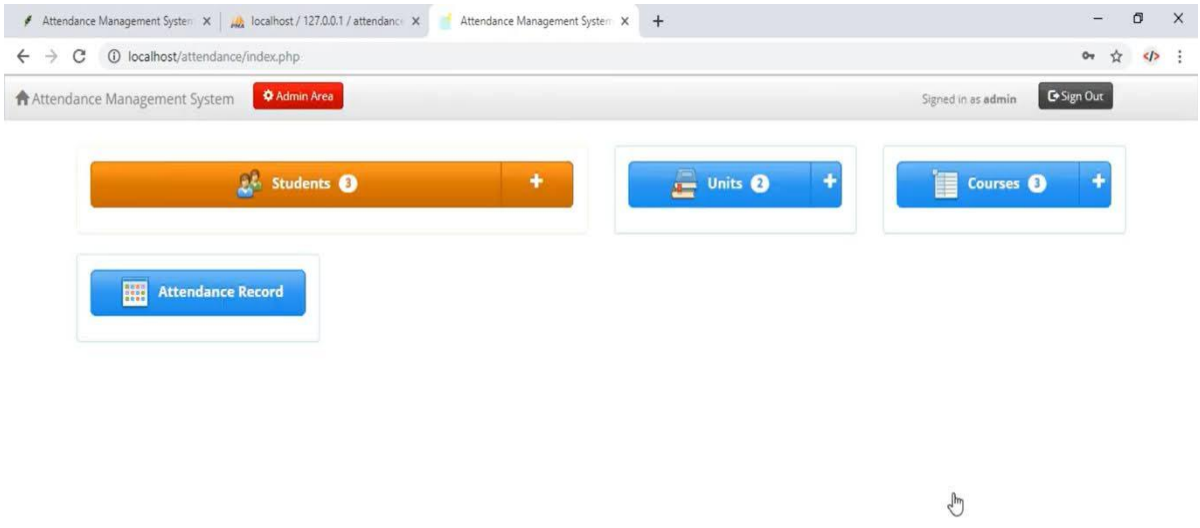

Fig: B.2: Admin Dashboard

STUDENT PAGE

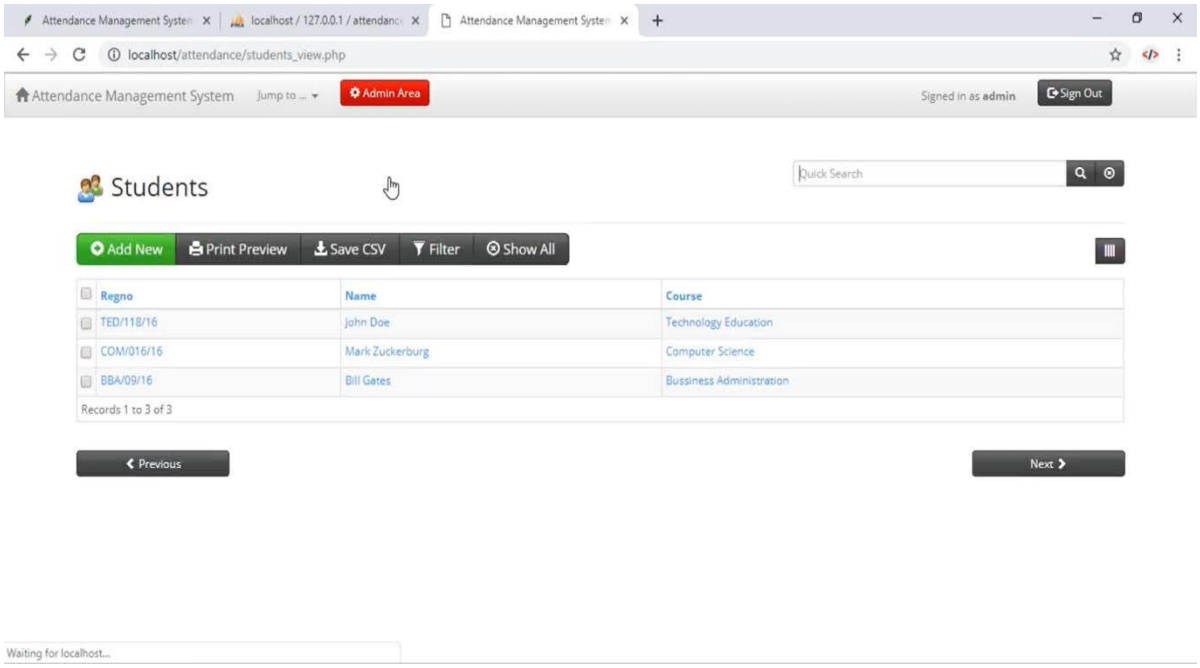

Fig: B.3: Student Page

UNITS PAGE

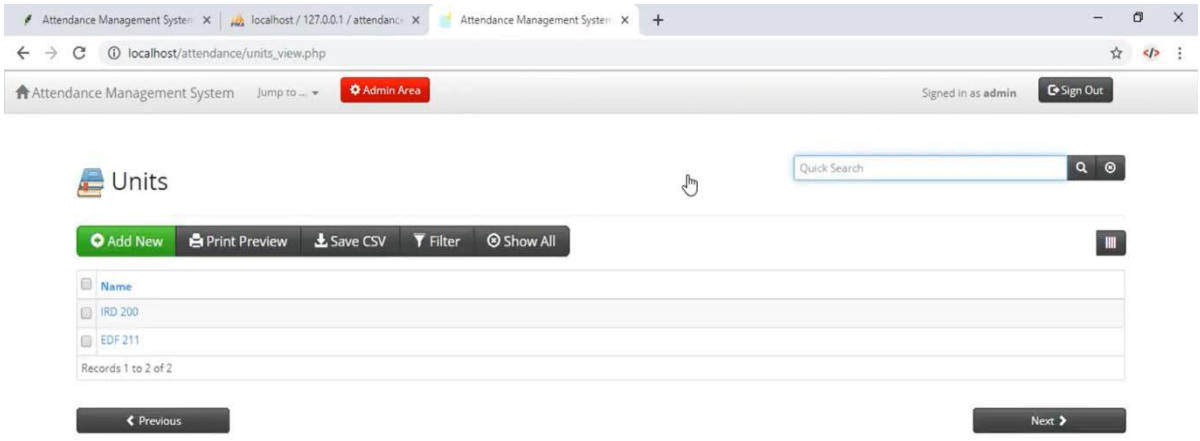

Fig: B.4: Units Page

COURSE PAGE

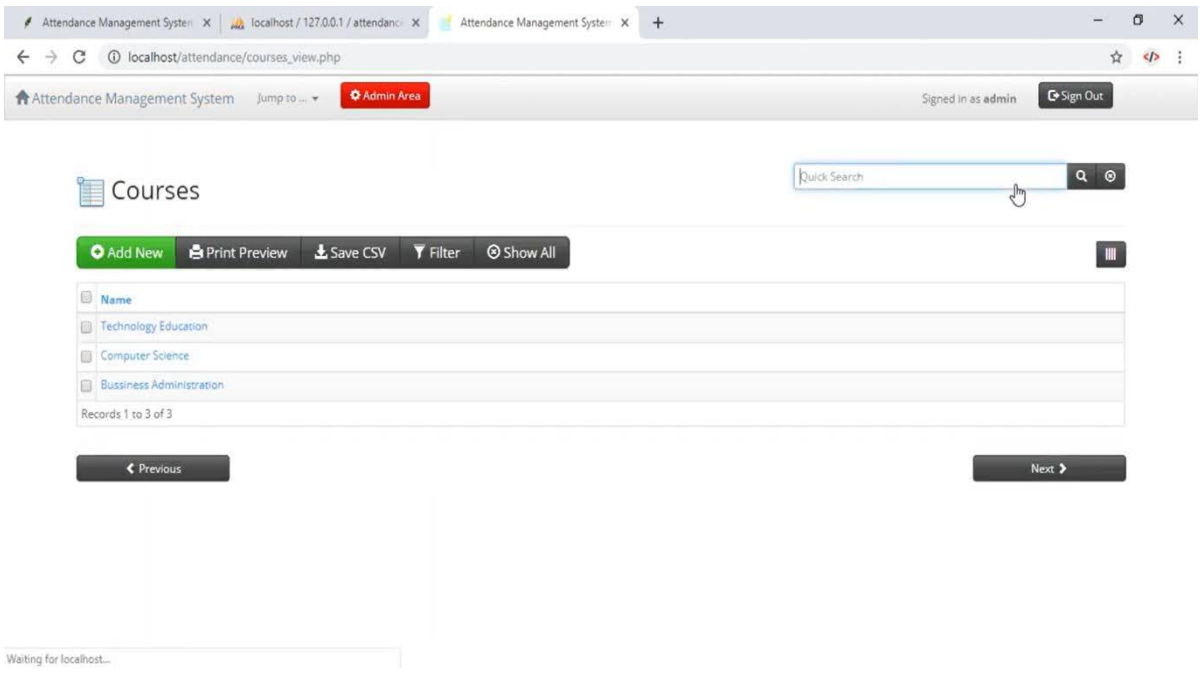

Fig: B.5: Course Page

ATTENDANCE RECORD

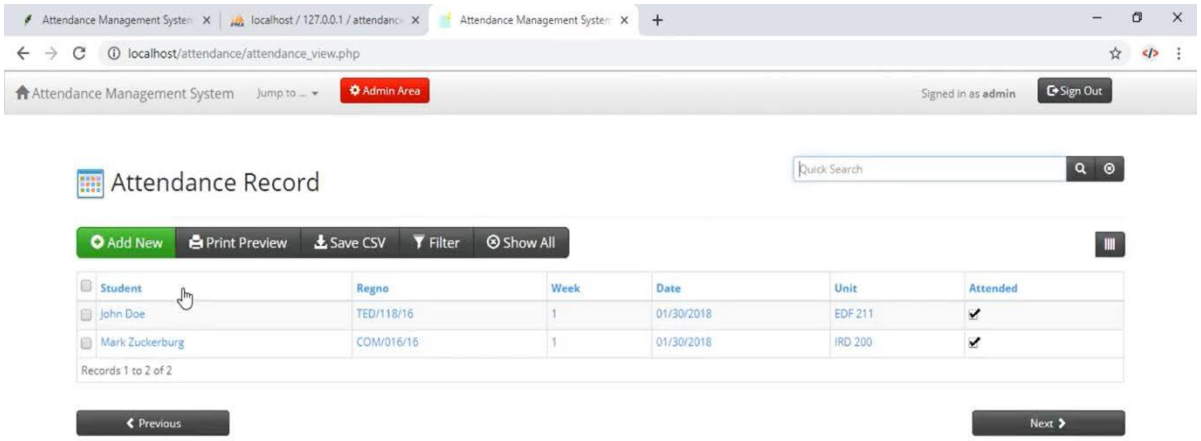

Fig:B.6: Attendance Record

ADD & DELETE PAGE

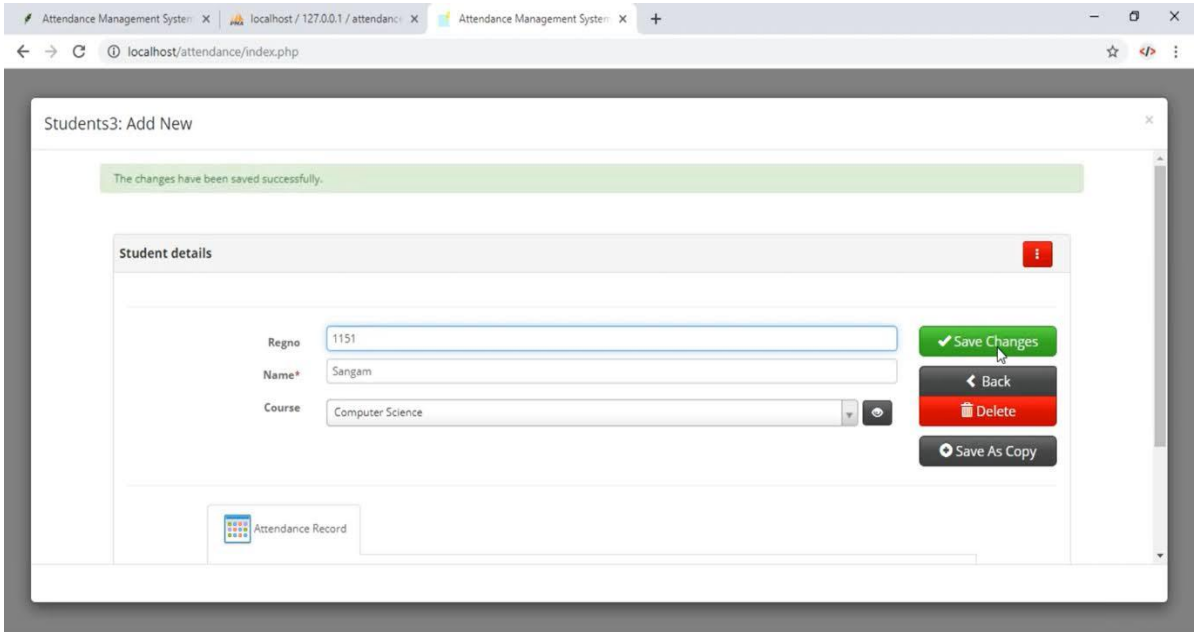

Fig: B.7: Add & Delete Page

UPDATED RECORD

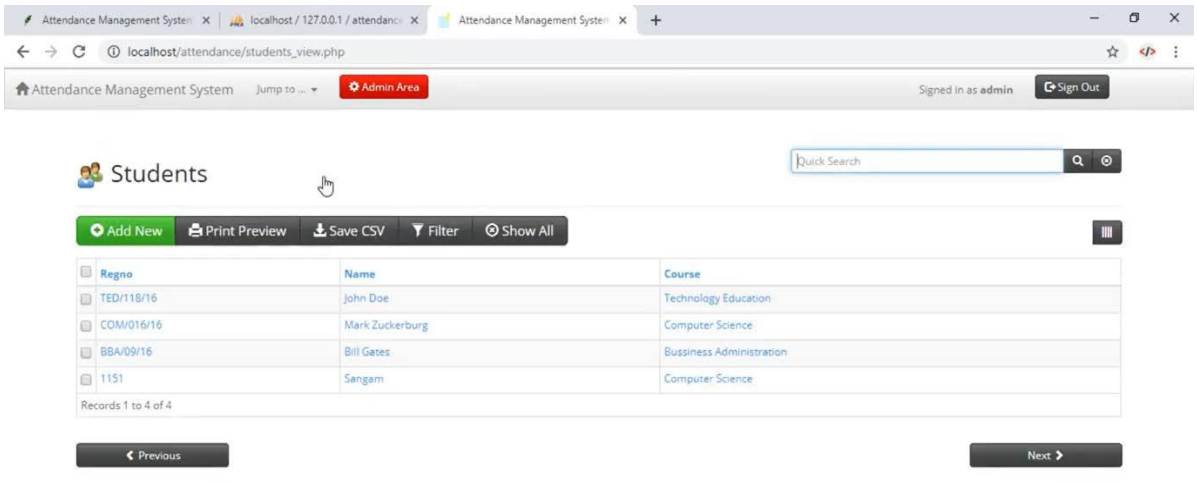

Fig: B.8: Updated Record

APPENDIX-C

ENCLOSURES

1. Similarity Index / Plagiarism Check report clearly showing the Percentage (%). No need for a page-wise explanation.

APPENDIX-C

ENCLOSURES

2.Details of mapping the project with the Sustainable Development Goals (SDGs).

Fig: C.1: Sustainable Development Goal

SDG 4: Quality Education

- **Target 4.1:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- **Contribution:** The AMS helps educational institutions track attendance accurately and consistently, which supports student engagement and reduces absenteeism—a key factor in improving learning outcomes and retention rates.
- **Example:** Identifying at-risk students early through attendance analytics enables timely academic interventions.