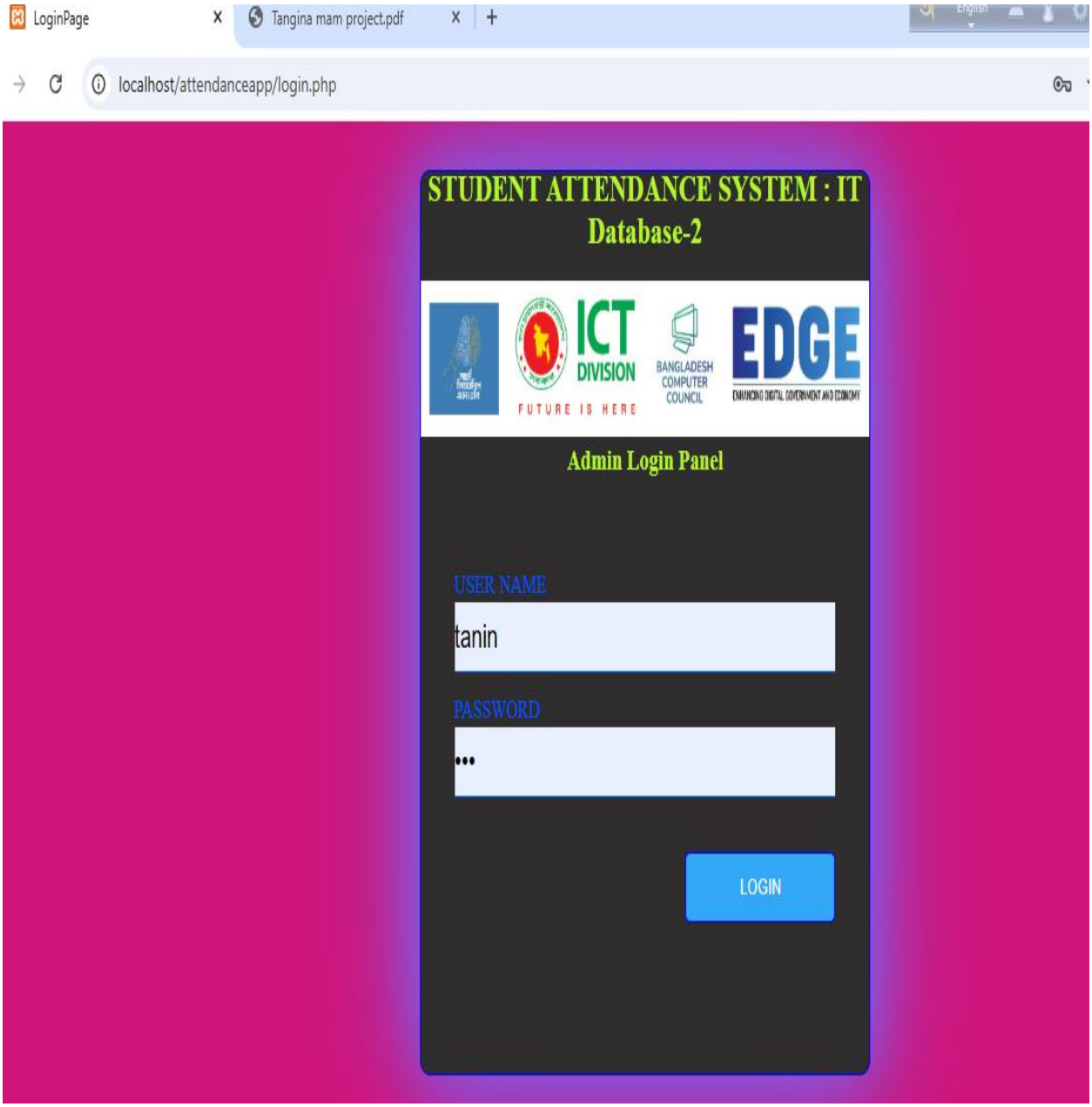
Login Page :


LoginPage
Tangina mam project.pdf
localhost/attendanceapp/login.php
STUDENT ATTENDANCE SYSTEM : IT
Database-2
ICT DIVISION
FUTURE IS HERE
BANGLADESH COMPUTER COUNCIL
EDGE
Admin Login Panel
USER NAME
tanin
PASSWORD
LOGIN

Student attendance management system using a combination of HTML, CSS, JavaScript, PHP, MySQL.

Introduction

The **Student Attendance Management System** is a web-based application designed to automate the process of tracking student attendance in educational institutions. With the growing need for efficient, accurate, and real-time attendance management, this system eliminates the traditional paper-based or manual methods, offering a digital solution that ensures accuracy and saves time.

Built using a combination of **HTML**, **CSS**, **JavaScript**, **PHP**, and **MySQL**, the system provides a seamless interface for users to interact with and manage attendance records. **HTML** forms the structural framework of the application, while **CSS** is employed to style and design the user interface for an intuitive and visually appealing experience. **JavaScript** adds dynamic functionality to the application, enhancing interactivity by allowing real-time updates without the need for page reloads. The back-end of the system is powered by **PHP**, which handles business logic, user requests, and interacts with the **MySQL** database to store and retrieve data efficiently. Built on the **XAMPP platform**, which includes **Apache** as the web server and **MySQL** as the database management system, the application ensures a stable, secure, and reliable environment for both development and deployment.

The system is designed to cater to various users, including students, faculty, and administrators. Students can track their attendance records, faculty members can mark attendance for their classes, and administrators have the ability to generate comprehensive reports and manage user data. By using **MySQL** as the database management system, the system ensures secure, reliable, and scalable storage of attendance data, supporting the tracking of student attendance for multiple courses, sessions, and academic terms.

Student Attendance Management System is a reliable and efficient solution for educational institutions seeking to modernize their attendance tracking processes, reduce administrative workload, and improve accuracy in attendance management.

Objectives

The primary objectives of the **Student Attendance Management System** are:

- **Automation**: Automate the attendance tracking process to reduce manual errors and administrative overhead.
- **Efficiency**: Enable quick access to real-time attendance data, making it easier to generate reports and track student attendance trends.
- **Transparency**: Provide clear and transparent access to attendance records for students, faculty, and administrators.
- **User-Friendly Interface**: Create an intuitive, responsive interface using web technologies, ensuring easy navigation and interaction for users with varying technical backgrounds.
- **Reliability**: Ensure data integrity, security, and the ability to handle large volumes of data effectively.

Features

- **Login Page**
  - The page where the system users submit their credentials to access and manage the data of the system.
- **Home Page**
  - The page where the system users will be redirected by default when logging into the system.
- **Course Page**
  - The page where the system admin or staff manages the list of courses.
- **Subject Page**
  - The page where the system admin and staff manage the list of subjects.
- **Faculty Page**
  - The page where the school faculties are listed and managed.
- **Student Page**
  - The page where the students are listed and managed.
- **Class Page**
  - The page where the admin or staff manages the list of classes.
- **Check Attendance Page**
  - The page where the faculties manage the attendance of their students.
- **Attendance Record Page**
  - The page where the recorded or stored attendance data show.
- **Attendance Repot Page**
  - The page where the attendance report on student attendance per month is listed.
- **Users Page**
  - The page where the system admin manages the system users' credentials.

Technologies Used

1. **Front-End Technologies**:
    - **HTML**: Provides the structure for all the pages and forms.
    - **CSS**: Styles the web pages to ensure they are visually appealing and user-friendly.
    - **JavaScript**: Adds interactivity, such as validating form data, enabling dynamic updates without refreshing the page, and providing a better user experience.
2. **Back-End Technologies**:
    - **PHP**: Handles server-side logic, such as interacting with the database, processing user requests, and managing sessions.
    - **MySQL**: Stores and retrieves all the data related to students, courses, attendance, and other relevant entities. The relational database ensures efficient storage and retrieval of data.
3. **Platform**:
    - **XAMPP**: The **XAMPP** platform is used to run the system on a local server. It includes **Apache** as the web server and **MySQL** as the database, making it an all-in-one solution for development and testing. XAMPP simplifies the deployment of web applications on local machines for testing and development purposes.

System Architecture

The architecture of the **Student Attendance Management System** follows a **client-server model**, where the user interface, business logic, and data storage are divided into distinct layers for optimal performance and scalability. The system operates in a web-based environment, accessible through any standard browser. The system architecture is designed as a typical **client-server architecture**, where the client (user's browser) communicates with the server (hosted on Apache) to fetch and display data from the MySQL database. The key components are:

Internet (Client Access)

The Internet serves as the primary medium for accessing the Student Attendance Management System. The system is web-based, which means that it can be accessed by users (students, faculty, and administrators) from anywhere with an active internet connection. This eliminates the need for installing any special software on client machines, as everything is accessible through a browser.

Accessibility: The system can be accessed by students, faculty, and administrators using any modern web browser (e.g., Google Chrome, Mozilla Firefox, Safari).

User Interface: The front-end of the system (built using HTML, CSS, and JavaScript) is delivered to users via the internet, allowing interaction with the application from any device connected to the web.

Web Server (Apache Server from XAMPP)

The Web Server acts as an intermediary between the client (browser) and the database. It processes the user requests, serves the appropriate HTML/CSS pages, and handles dynamic content generation. In this system, Apache, a widely-used open-source web server, is employed.

Function: The Apache server is responsible for serving static content (e.g., HTML, CSS, and JavaScript files) and handling dynamic content (e.g., PHP scripts) that requires interaction with the database. When users interact with the system, Apache handles their requests by executing PHP scripts, which in turn interact with the MySQL database.

Role of XAMPP: XAMPP is a package that combines Apache with MySQL, PHP, and other tools, making it an ideal choice for local development and testing. XAMPP simplifies the setup process, ensuring that all necessary components are pre-configured and ready for use.

Database Server (MySQL)

The Database Server is responsible for storing and managing all the system data, including students, courses, faculty, sessions, and attendance records. In this system, MySQL is used as the database management system (DBMS), which is a reliable, fast, and scalable choice for web-based applications.

Function: The MySQL database stores data in a structured format, using relational tables that are linked by primary and foreign keys. When a user interacts with the system (e.g., marking attendance or registering a student), the corresponding PHP script sends queries to the MySQL database to retrieve, update, or delete the necessary records.

Security: MySQL ensures data integrity and security through its support for transactions, user authentication, and permissions, ensuring that only authorized users can modify sensitive data.

Data Storage: MySQL stores data in tables for entities like Students, Courses, Faculty, Sessions, and Attendance. These tables are interrelated to ensure proper management and retrieval of data. For example, the Attendance table links to both the Students and Sessions tables, allowing the system to track which students attended which sessions.

Client-Side (User Interface)

The Client-Side of the system is responsible for presenting the user interface (UI) and allowing users to interact with the application. The UI is developed using HTML, CSS, and JavaScript, providing an engaging and interactive experience for users.

HTML (HyperText Markup Language): HTML forms the backbone of the user interface. It structures the content of the application, defining elements like text, forms, tables, and links. HTML is responsible for organizing content on the web pages.

CSS (Cascading Style Sheets): CSS is used to style the HTML elements, making the user interface visually appealing. It is responsible for the layout, colors, fonts, and overall design of the web pages. By using CSS, the system ensures a consistent and attractive appearance across all pages.

JavaScript: JavaScript is used for creating dynamic, interactive features within the system. It allows for client-side validation of forms (e.g., checking if all required fields are filled), providing real-time updates without refreshing the page, and enhancing the user experience. JavaScript can interact with the backend through AJAX calls, allowing for asynchronous communication with the server.

User Interaction:

Students can register, view their attendance, and check their attendance history.

Faculty can manage courses, mark attendance for sessions, and view detailed attendance reports.

Admins can oversee the entire system, manage users, and generate reports for all courses and students.

Database Design

Tables:

1. **Students**:
    - StudentID (Primary Key)
    - FirstName
    - LastName
    - Email

- Phone
- EnrollmentDate

2. **Courses**:
    - CourseID (Primary Key)
    - CourseName
    - CourseCode
    - FacultyID (Foreign Key referencing Faculty)
3. **Faculty**:
    - FacultyID (Primary Key)
    - FirstName
    - LastName
    - Email
    - Phone
4. **Sessions**:
    - SessionID (Primary Key)
    - CourseID (Foreign Key referencing Courses)
    - SessionDate
    - StartTime
    - EndTime
5. **Attendance**:
    - AttendanceID (Primary Key)
    - SessionID (Foreign Key referencing Sessions)
    - StudentID (Foreign Key referencing Students)
    - AttendanceStatus (e.g., Present, Absent)

ER Diagram for Attendance Process

The following entities and relationships define the attendance management process:

Entities:

- Student
- Course
- Faculty
- Session
- Attendance

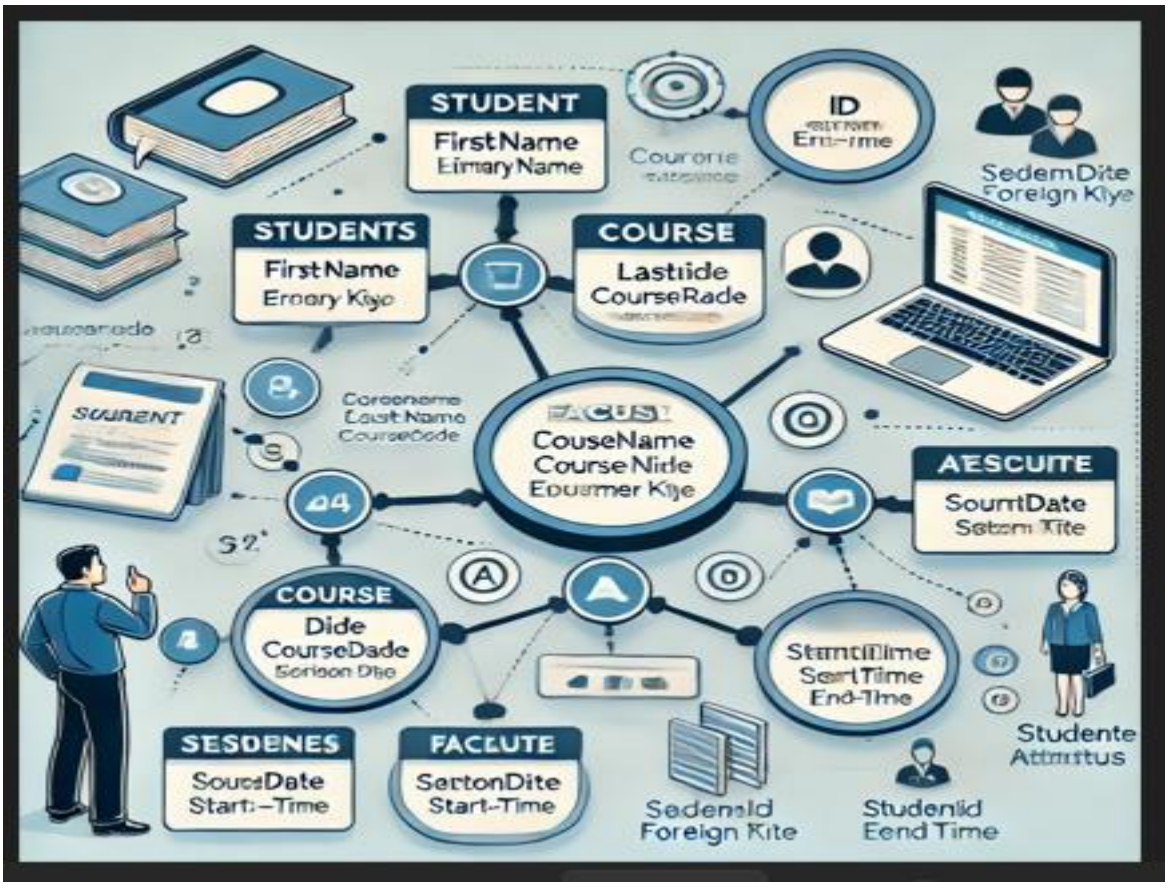
Relationships

1. **Students** and **Attendance**:
    - A **Student** can have many **Attendance** records.
    - Each **Attendance** record belongs to one **Student**.
    - Relationship: **One-to-Many**
2. **Courses** and **Faculty**:
    - A **Course** is taught by one **Faculty**.
    - A **Faculty** can teach multiple **Courses**.
    - Relationship: **One-to-Many**
3. **Courses** and **Students**:
    - A **Course** includes multiple **Students**.
    - A **Student** can enroll in multiple **Courses**.
    - Relationship: **Many-to-Many**
4. **Courses** and **Sessions**:
    - A **Course** consists of multiple **Sessions**.
    - Each **Session** belongs to one **Course**.

- Relationship: **One-to-Many**

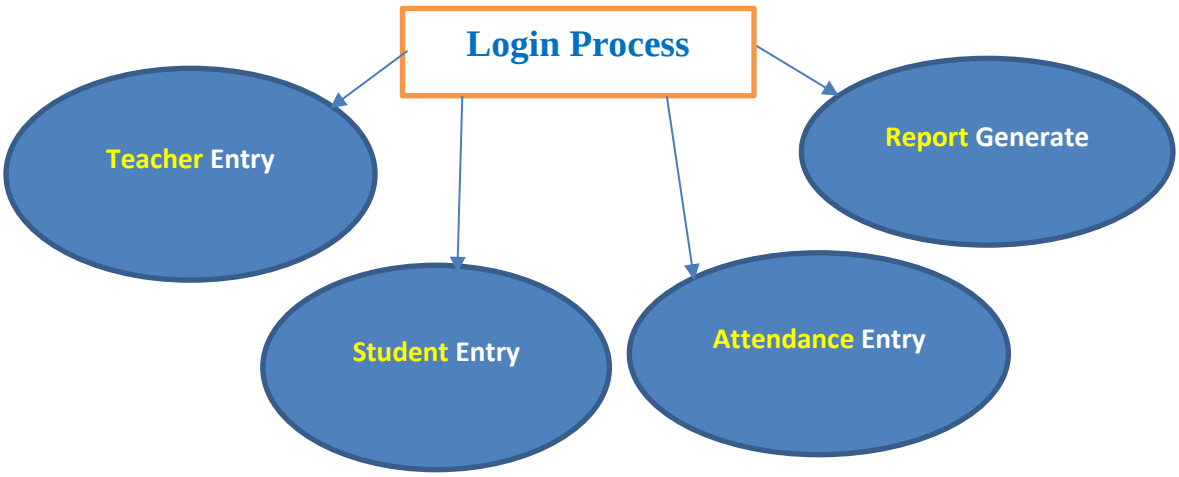
5. **Sessions** and **Attendance**:
    - A **Session** has multiple **Attendance** records.
    - Each **Attendance** record belongs to one **Session**.
    - Relationship: **One-to-Many**

ER-Diagram:

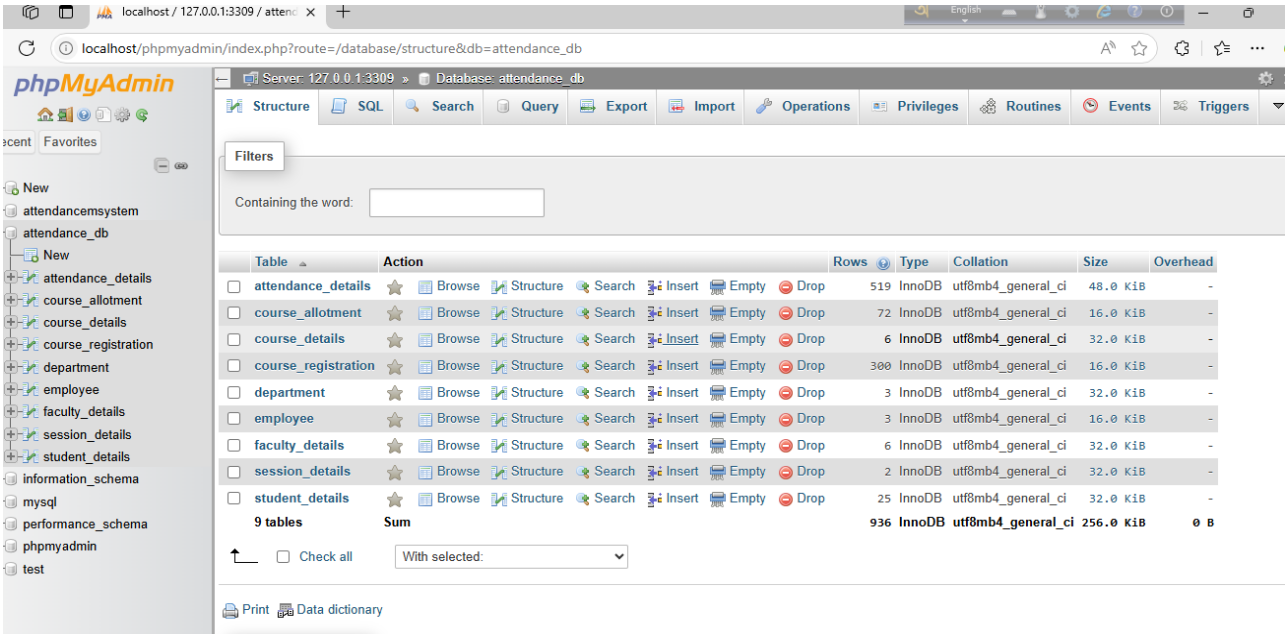


Design:

Data Flow Diagram:



Database Table:



Student details:

				id	roll_no	name
☐	Edit	Copy	Delete	1	CSE-2002048	Md. Sakhawat Hosen
☐	Edit	Copy	Delete	2	ECE-2002135	Md. Mamun Islam
☐	Edit	Copy	Delete	3	AgriEngg-1907037	Md. Monirul Islam
☐	Edit	Copy	Delete	4	CSE-2102008	Sourav Roy
☐	Edit	Copy	Delete	5	ECE-2002118	Md Rakibul Islam
☐	Edit	Copy	Delete	6	EEE-1902201	Atik Ahamed
☐	Edit	Copy	Delete	7	ECE-2102108	Md.Mohsin Ahmed
☐	Edit	Copy	Delete	8	ECE-2002174	Md. Humaun Kabir
☐	Edit	Copy	Delete	9	MATH-2008233	MD.MAHAFUZ AHMED
☐	Edit	Copy	Delete	10	MATH-2008224	MEHEDI HASAN IFTI
☐	Edit	Copy	Delete	11	MATH-2008281	MD. ARIF MIA
☐	Edit	Copy	Delete	12	CSE-2102042	Abdur Razzak
☐	Edit	Copy	Delete	13	AgriEngg-2107045	MD ISMAIL
☐	Edit	Copy	Delete	14	AgriEngg-1707135	Md.Rana Babu

←T→				id	roll_no	name
☐	Edit	Copy	Delete	15	CSE-2102043	Amit Hasan Sikder
☐	Edit	Copy	Delete	16	MATH-2008276	MD TASMIR RAHMAN
☐	Edit	Copy	Delete	17	ECE-2102107	Md. Rafiur Rahman Rowdra
☐	Edit	Copy	Delete	18	ECE-2002130	Nafisa Noushin
☐	Edit	Copy	Delete	19	ECE-1902128	Md.Tanin Hossain
☐	Edit	Copy	Delete	20	ECE-1902147	Md Robaidul Islam
☐	Edit	Copy	Delete	21	HSTU	Md.Rafiul Islam
☐	Edit	Copy	Delete	22	ECE-1902135	Md. Fazle Hasan Mihad
☐	Edit	Copy	Delete	23	ECE-20021140	Arjina Akter
☐	Edit	Copy	Delete	24	ECE-2002150	Md. Khalid Hasan
☐	Edit	Copy	Delete	25	ECE-2002119	Arefin Joarder

Report : Class Attendance

Session:	2024 EDGE DATABASE
	Database-Database management system -
Course:	EDGE
Faculty:	Dr Tanjina Sultana
total	29
start	9/9/2024
end	11/23/2024

slno	rollno	name	attendent	percent
1	CSE-2002048	Md. Sakhawat Hosen	24	82.76
2	ECE-2002135	Md. Mamun Islam	25	86.21
3	AgriEngg-1907037	Md. Monirul Islam	14	48.28
4	CSE-2102008	Sourav Roy	22	75.86
5	ECE-2002118	Md Rakibul Islam	23	79.31
6	EEE-1902201	Atik Ahamed	24	82.76
7	ECE-2102108	Md.Mohsin Ahmed	23	79.31
8	ECE-2002174	Md. Humaun Kabir	24	82.76
9	MATH-2008233	MD.MAHAFUZ AHMED	23	79.31
10	MATH-2008224	MEHEDI HASAN IFTI	24	82.76
11	MATH-2008281	MD. ARIF MIA	23	79.31
12	CSE-2102042	Abdur Razzak	22	75.86

13	AgriEngg-2107045	MD ISMAIL	25	86.21
14	AgriEngg-1707135	Md.Rana Babu	20	68.97
15	CSE-2102043	Amit Hasan Sikder	23	79.31
16	MATH-2008276	MD TASMIR RAHMAN	23	79.31
17	ECE-2102107	Md. Rafiur Rahman Rowdra	23	79.31
18	ECE-2002130	Nafisa Noushin	25	86.21
19	ECE-1902128	Md.Tanin Hossain	24	82.76
20	ECE-1902147	Md Robaidul Islam	23	79.31
21	HSTU	Md.Rafiul Islam	23	79.31
22	ECE-1902135	Md. Fazle Hasan Mihad	19	65.52
23	ECE-20021140	Arjina Akter	23	79.31
24	ECE-2002150	Md. Khalid Hasan	25	86.21
25	ECE-2002119	Arefin Joarder	25	86.21

Advantages of the System

The Student Attendance Management System offers several key advantages over traditional methods of attendance tracking:

1. **Efficiency:** The system significantly reduces the time spent on manually recording attendance. Faculty can mark attendance with just a few clicks, and the system immediately updates the records in the database. This automated process helps in improving operational efficiency and reduces administrative overhead.

2. **Accuracy:** The system minimizes human errors in attendance marking and ensures data accuracy. Attendance data is automatically updated in real-time, eliminating the chances of missing or incorrect records.

3. **Real-Time Access and Reporting**: Students, faculty, and administrators have access to up-to-date attendance records at any time. This real-time access allows faculty to quickly identify student attendance patterns and take corrective action if needed. Administrators can generate detailed reports, offering insights into attendance trends across various courses and departments.

4. **Scalability:** The system can easily scale to accommodate large numbers of students, courses, and faculty members. MySQL's efficient database management and PHP's ability to handle multiple concurrent users ensure that the system can support institutions of varying sizes, from small colleges to large universities.

5. **User-Friendly Interface:** The application's user-friendly interface makes it easy for users with varying levels of technical expertise to navigate and interact with the system. Students can easily track their attendance, faculty can mark attendance without hassle, and administrators can generate reports with minimal effort.

6. **Security and Data Integrity:** The system provides secure access to data through user authentication and role-based permissions. Each user has access to only the data relevant to their role, ensuring privacy and protecting sensitive information. Additionally, the use of MySQL ensures that all data is stored securely with support for backup and recovery.

Conclusion

The Student Attendance Management System is a robust and efficient solution that addresses the limitations of traditional attendance management systems. By leveraging modern web technologies like HTML, CSS, JavaScript, PHP, and MySQL, the system provides a seamless, user-friendly experience that enhances accuracy, efficiency, and transparency in tracking student attendance. This automated solution benefits educational institutions by reducing administrative workload, ensuring real-time updates, and providing detailed insights into attendance patterns, thus supporting better decision-making and improving overall institutional management. With its scalability, security features, and intuitive design, the system is an ideal choice for educational institutions looking to modernize their attendance tracking processes.