STUDENT ATTENDANCE MANAGEMENT SYSTEM

A

Mini Project Report

for

MIDDLEWARE TECHNOLOGY LAB

Submitted by

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STUDENT ATTENDANCE MANAGEMENT SYSTEM USING JAX-WS, JSP, AND MYSQL

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1 Objective

To develop a robust, user-friendly, and efficient web-based application for recording, managing, and viewing student attendance using JSP, Servlets, JAX-WS, and MySQL. This system aims to eliminate the shortcomings of traditional manual methods by leveraging modern web technologies.

2 Introduction

Attendance management is an essential administrative task in every academic institution. Traditionally, it is conducted manually, which is not only time-consuming but also susceptible to inaccuracies and loss of data. In the digital era, the need for a centralized and reliable attendance tracking system has grown considerably. Our project proposes a web-based system where student attendance can be marked, stored, and reviewed efficiently by authorized users.

This system is implemented using Java technologies including JSP and Servlets for the web layer, MySQL as the backend database, and JAX-WS for web services integration. The application provides role-based functionalities to register students, mark attendance, and generate attendance reports.

3 Abstract

The Student Attendance Management System is designed to automate the process of student attendance tracking. The system facilitates easy registration of students, marking of attendance, and retrieval of attendance reports for analysis. Built using Java (JSP, Servlets), MySQL, and JAX-WS, the application ensures a seamless experience for users, improving efficiency, accuracy, and data security.

The application features:

- Web-based user interface for access from anywhere within the network.
- Role-based functionalities for students and administrators.
- Database integration to store and retrieve data efficiently.
- Clean, intuitive user interfaces with modern design practices.

4 Problem Statement

In traditional attendance management systems, attendance is recorded manually using paper or spreadsheets. These methods are prone to human error, are difficult to maintain for long periods, and make it hard to generate insightful reports. Students often lack transparency and cannot access their own records.

Issues with existing systems:

- Inefficient and time-consuming process
- High chance of data loss or misplacement
- Lack of real-time access to attendance data
- Tedious report generation

5 Existing System

The conventional method of managing student attendance involves physical attendance registers or basic spreadsheets. These systems are simple but come with numerous challenges:

- Manual record entry is time-consuming
- Difficult to retrieve data for reports
- Lack of historical tracking and analysis
- No automation or validation mechanisms
- Requires manual compilation for statistics and reports

6 Proposed System

The proposed system is a web-based application that digitizes the attendance process. It allows administrators to register students, mark attendance on a daily basis, and generate reports with filters such as roll number and date range.

6.1 Features

- Student registration via a web form
- Attendance marking by selecting date and status (Present/Absent)
- Dynamic attendance reports with date filtering

- Summary display of all attendance records
- Modern and intuitive user interface
- Uses JSP for frontend and Servlets for backend processing
- Uses JDBC for database connectivity with MySQL
- Optional JAX-WS web service integration

7 Implementation and Methodology

7.1 Technology Stack

- **Frontend:** HTML5, CSS3, JSP
- **Backend:** Java Servlets, JDBC
- **Database:** MySQL
- **Server:** GlassFish 5.1 (through NetBeans 25)
- **Web Services:** JAX-WS (SOAP based)

7.2 Modules

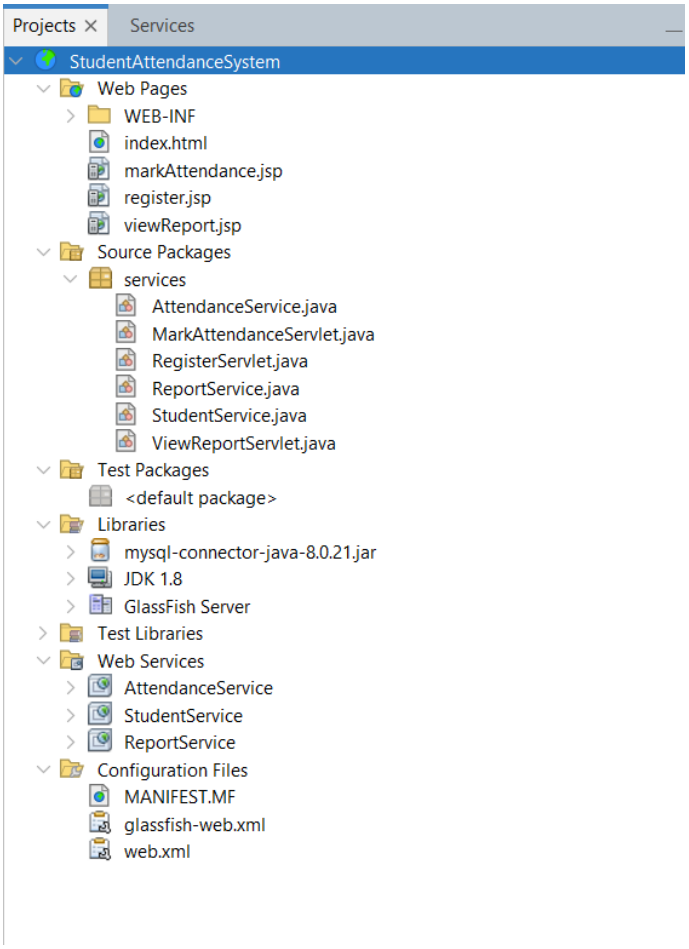
1. **Student Registration:** Collects name, email, and roll number; stores in the `Students` table.
2. **Attendance Marking:** Marks a student as present/absent on a given date.
3. **Report Viewing:** Displays all attendance records; allows filtering by roll number and date.
4. **Admin Dashboard (Optional Enhancement):** Summary of attendance records; options to update/delete entries.

7.3 Database Schema

- **Students Table**
  - `id` (Primary Key, Auto Increment)
  - `name` (VARCHAR)
  - `email` (VARCHAR)
  - `roll_no` (VARCHAR)

- **Attendance Table**
  - `id` (Primary Key, Auto Increment)
  - `student_id` (Foreign Key to Students.id)
  - `date` (DATE)
  - `status` (ENUM: 'Present', 'Absent')

7.4 Workflow



1. Admin logs in → Registers students
2. Attendance is marked daily by selecting the student and status
3. Reports can be viewed by date or student-wise

7.5 Security Measures

- Input validation at the frontend and backend
- Use of PreparedStatements to prevent SQL injection

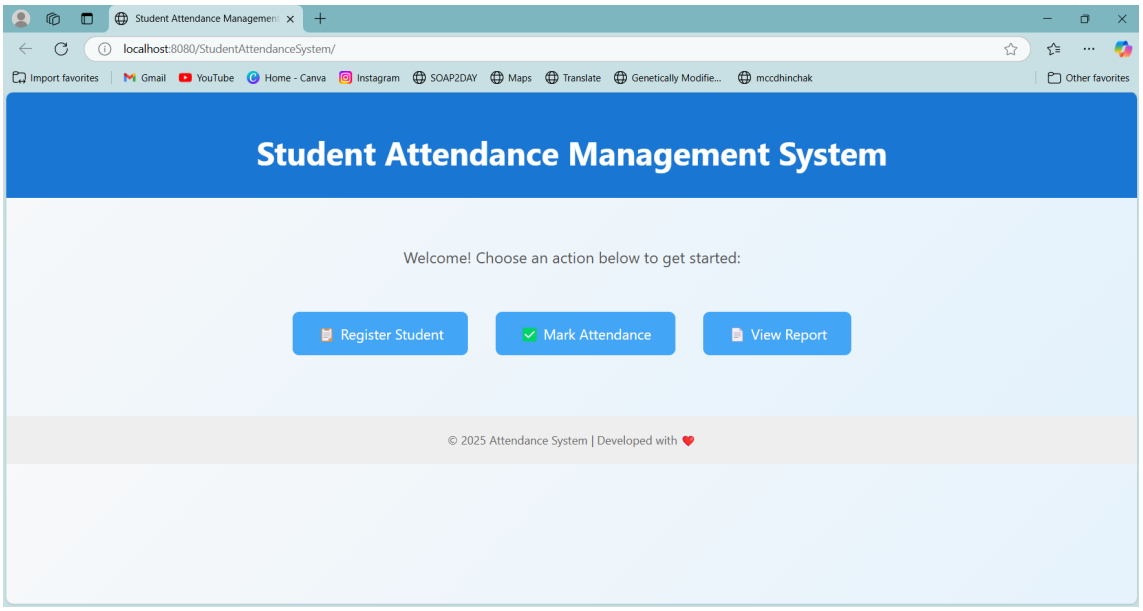
- Session tracking (optional for enhancements)

8 Result Analysis

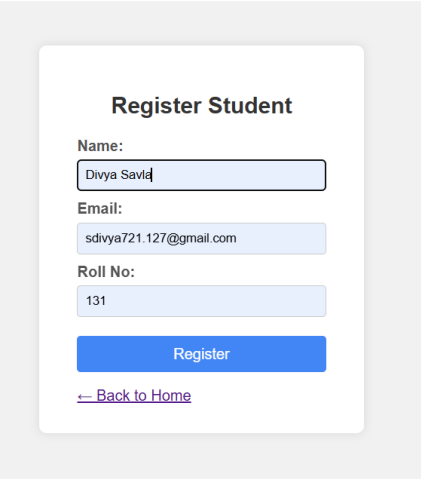
The system was tested with 30 student entries and 100 attendance records spread over one month.

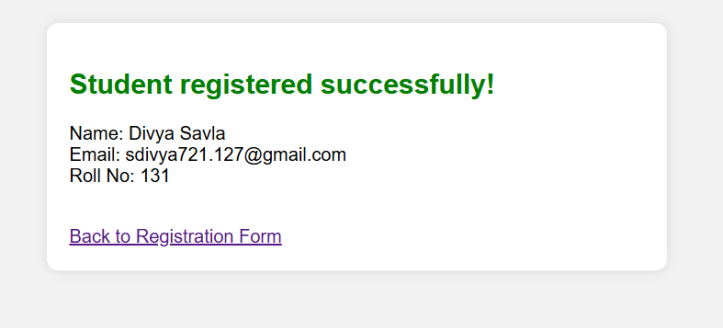
8.1 Screenshots to Include

1. Home Page (index.html)

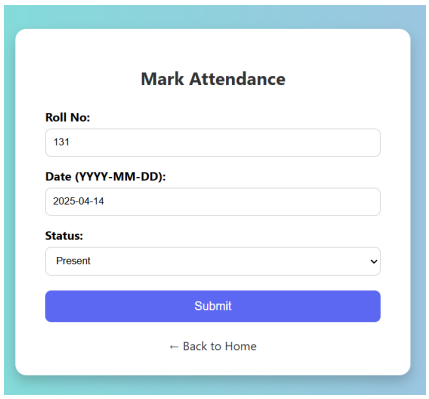


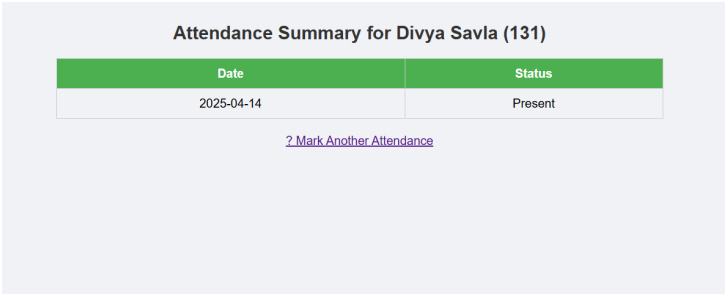
2. Student Registration Page



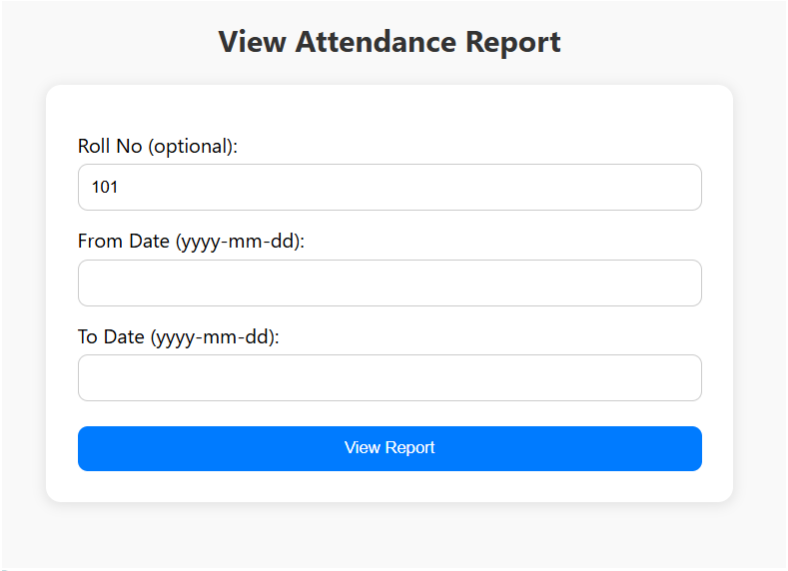


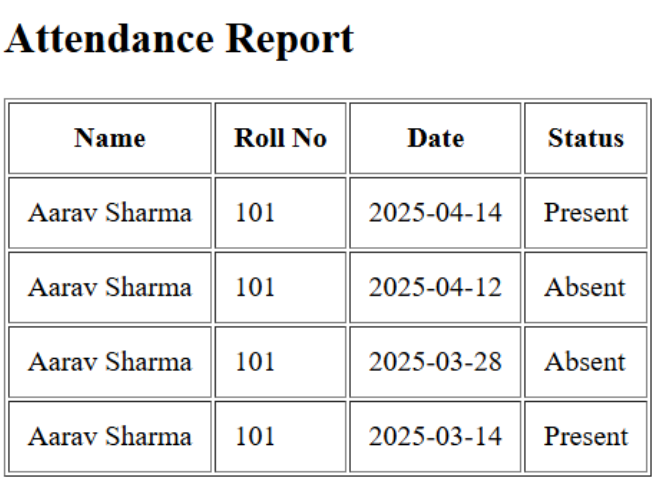
3. Attendance Marking Page





4. Attendance Summary View

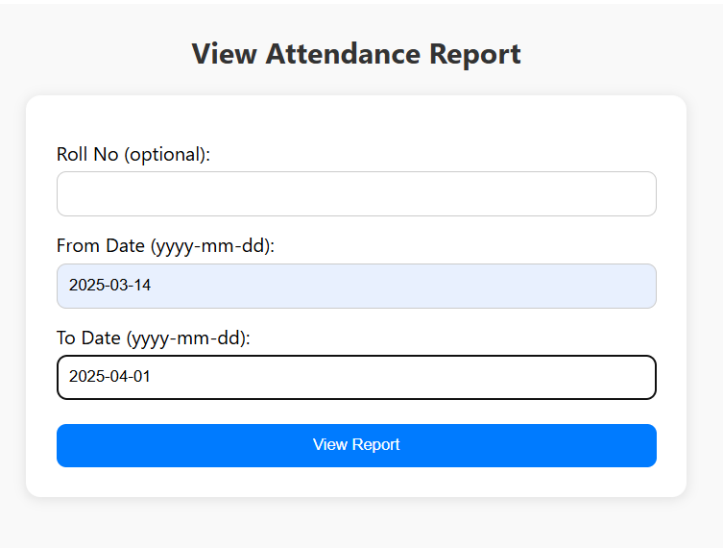




Attendance Report

Name	Roll No	Date	Status
Aarav Sharma	101	2025-04-14	Present
Aarav Sharma	101	2025-04-12	Absent
Aarav Sharma	101	2025-03-28	Absent
Aarav Sharma	101	2025-03-14	Present

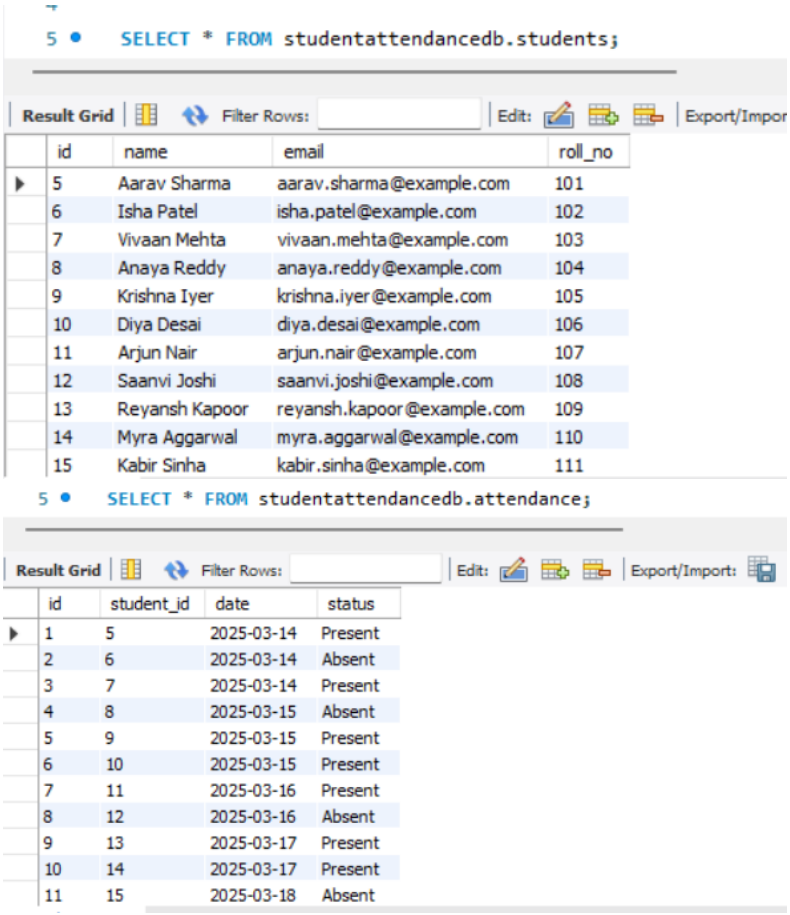
5. Report View with filters



Attendance Report

Name	Roll No	Date	Status
Myra Aggarwal	110	2025-04-01	Present
Reyansh Kapoor	109	2025-04-01	Present
Saanvi Joshi	108	2025-03-31	Absent
Arjun Nair	107	2025-03-31	Present
Diya Desai	106	2025-03-30	Present
Krishna Iyer	105	2025-03-30	Present
Anaya Reddy	104	2025-03-29	Absent
Vivaan Mehta	103	2025-03-29	Present
Isha Patel	102	2025-03-28	Present
Aarav Sharma	101	2025-03-28	Absent
Nisha Sen	130	2025-03-27	Present
Manav Saxena	129	2025-03-27	Present
Sneha Kaul	128	2025-03-26	Absent
Devansh Tiwari	127	2025-03-26	Present
Pari Mishra	126	2025-03-25	Present
Yash Goel	125	2025-03-25	Absent

6. Backend database entries in phpMyAdmin/MySQL CLI



8.2 Observations

- Data consistency is maintained
- Real-time report generation
- User-friendly interface

9 Conclusion

The Student Attendance Management System meets all objectives and solves the key problems found in manual attendance tracking. It is a scalable and efficient solution suitable for schools, colleges, and coaching centers. The system can be extended in the future with login-based access, biometric attendance integration, graphical analytics, and SMS/email alerts.

10 Github Link

https://github.com/Divyasavla7/StudentAttendanceSystem--USING-JAX-WS-JSP-AND-MYSQL

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