

Attendance Management System

Sustainable Goal: Quality Education (Goal Number-4)

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Introduction to Project

We will be presenting the Attendance Management System project. This system addresses the challenges faced in manual attendance tracking within educational system and offering an efficient and automated solution. Our system will represent a significant leap forward from the manual methods that are still being used today in schools and colleges.

Problem Definition

- Inefficient attendance tracking
- Time-consuming manual processes
- Error-prone record-keeping
- Difficulty in monitoring attendance trends

Goals

- Automate attendance tracking
- Reduce manual effort for teachers
- Improve accuracy and reliability
- Enhance data analysis and reporting

Literature Survey

- Teachers taking attendance manually
- Inconsistent methods
- No automated reporting

Limitation of Existing system

- Human errors in data entry
- Difficulty in tracking previous data
- Lack of real-time insights
- Inability to handle large volumes

Hardware, Software & Tools

Hardware

- A system with following specs (minimum):
RAM: 4GB
Storage: 256GB
Processor: Intel 7th Gen
- Reliable internet connection to support real-time updates.

Software

- Django Web Framework
- HTML, CSS & JavaScript for user interface development
- MySQL for secure data storage

Tools

- Git for effective version control

Proposed System

- Automation of attendance tracking
- Real-time data updates
- User-friendly interface
- Enhanced security measures

Architecture/ Framework (Block Diagram, Conceptual Diagram, ER Diagram)

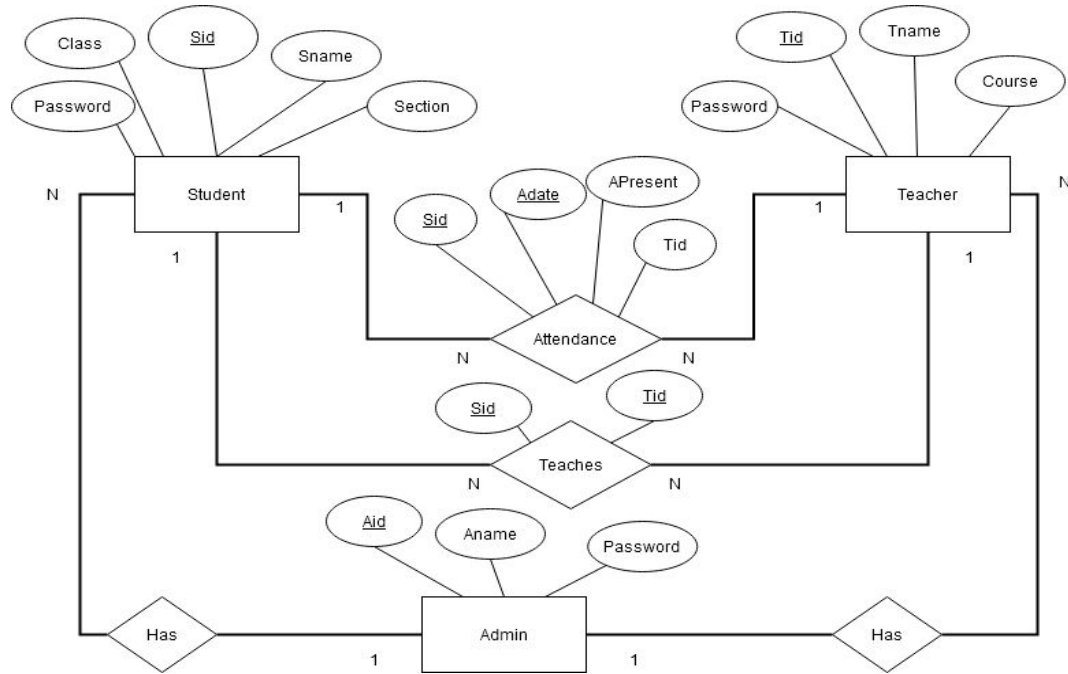


Fig 1. Entity Relation diagram of student attendance management system

Architecture/ Framework (Block Diagram, Conceptual Diagram, ER Diagram)

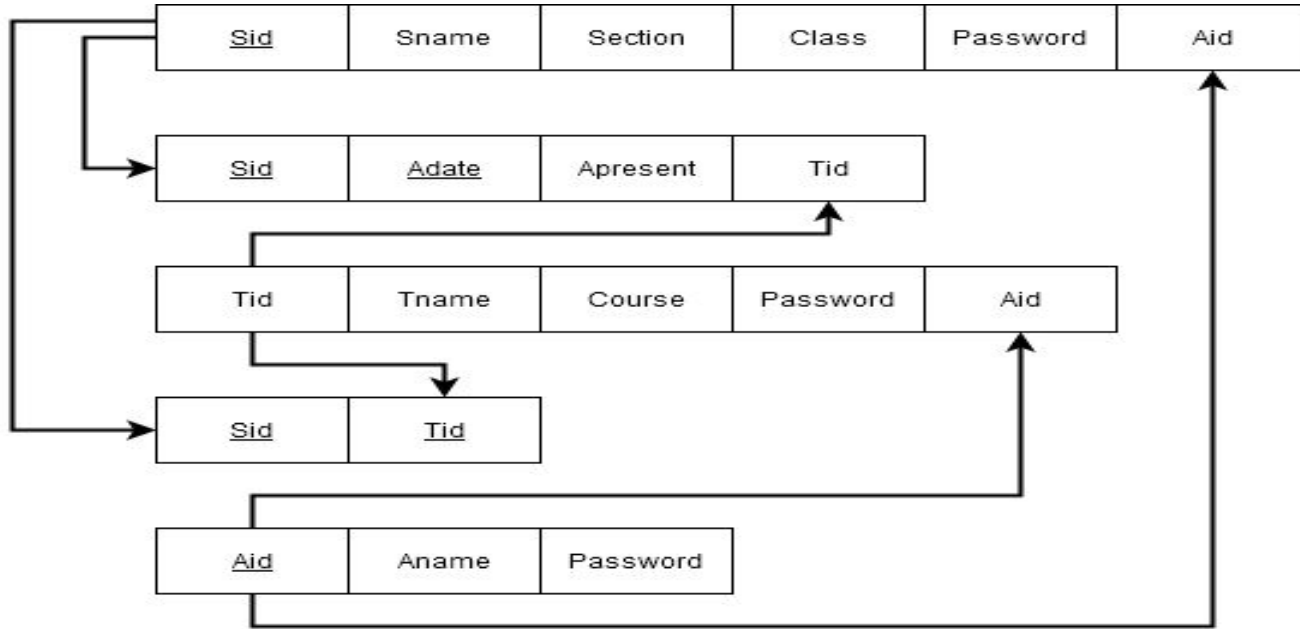


Fig 2. Relationship schema diagram of attendance management system

Methodology & Block Diagram / Conceptual

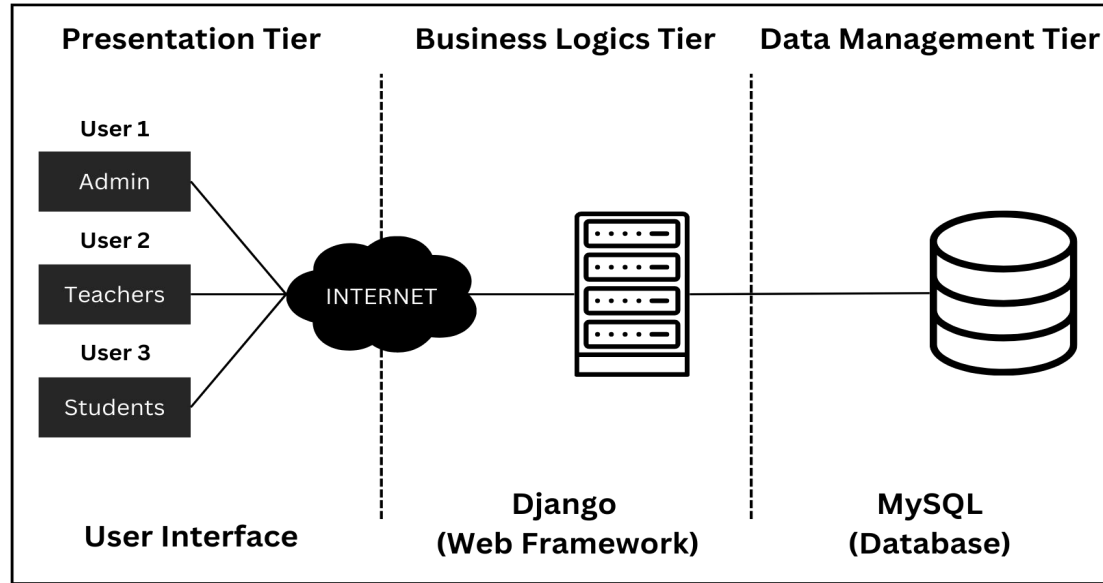
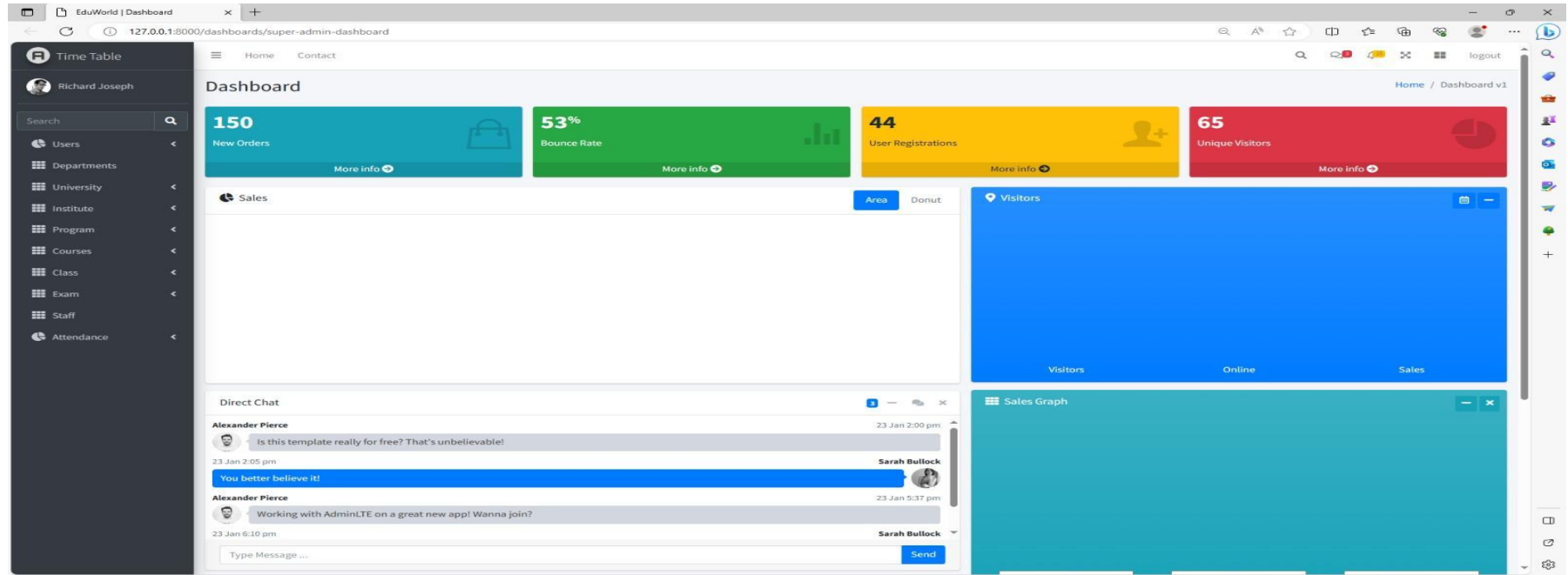


Fig 3. 3-tier architecture of student attendance management system

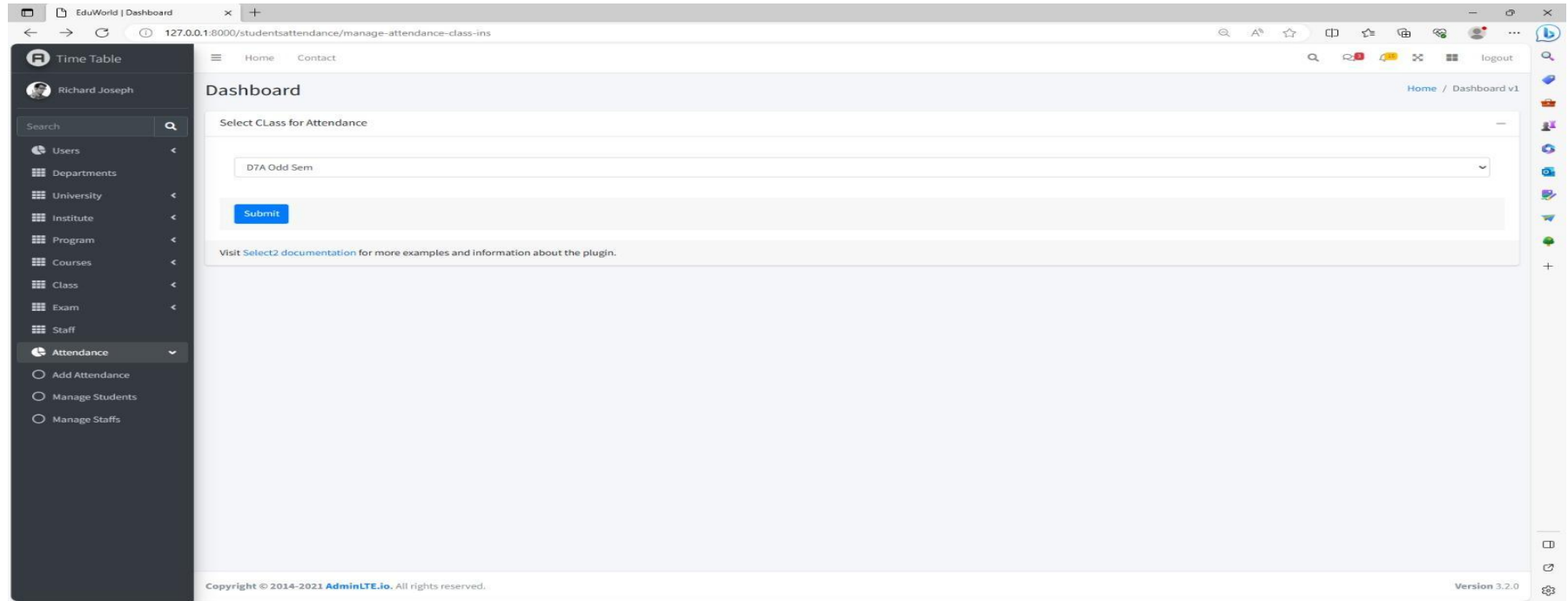
Methodology : Algorithm and Process Design

- **Requirement Gathering:** identify the requirements of the users.
- **Designing:** designing the interface.
- **Development:** backend or framework development using Django.
- **Testing:** testing the system's functionality, usability, and performance.
- **Deployment:** deploying the system to the user's.
- **Maintenance:** once the system is deployed, it can maintained to ensure that it functions smoothly.

Implementation details(GUI Screenshot, Dataset Used)



Implementation details(GUI Screenshot, Dataset Used)



Results Obtained

The screenshot shows a web browser window displaying the 'EduWorld | Dashboard' interface. The URL bar shows '127.0.0.1:8000/studentsattendance/manage-single-student-attendance-view-for-heads'. The left sidebar contains navigation links: 'Time Table', 'Richard Joseph' (user profile), 'Search', 'Users', and 'Attendance'. The main content area is titled 'Student-Wise Attendance' and includes a breadcrumb trail 'Home / Dashboard v1'. The form contains the following fields:

- Session:** A dropdown menu with 'EVEN Semester 2023-24' selected.
- Class:** A dropdown menu with 'D12A' selected.
- Student:** A dropdown menu with 'Chengalva Harikha' selected.
- Start Date:** A date input field with '01-02-2024' and a calendar icon.
- End Date:** A date input field with '29-02-2024' and a calendar icon.

Below the form is a blue 'Get Report' button. Underneath the button, the text 'Attendance Data' is displayed above a table. The table is currently empty, and a message at the bottom states 'No attendance data available.'

Fig 3A. Report generation (Student-wise view)

Results Obtained

The screenshot displays the 'Manage Single Student Attendance View for Heads' interface. The sidebar on the left includes 'Time Table', 'Richard Joseph' (user profile), 'Search', 'Users', and 'Attendance'. The main content area features a form with the following fields:

- Student:** A dropdown menu.
- Start Date:** A date input field with a calendar icon.
- End Date:** A date input field with a calendar icon.
- Get Report:** A blue button.

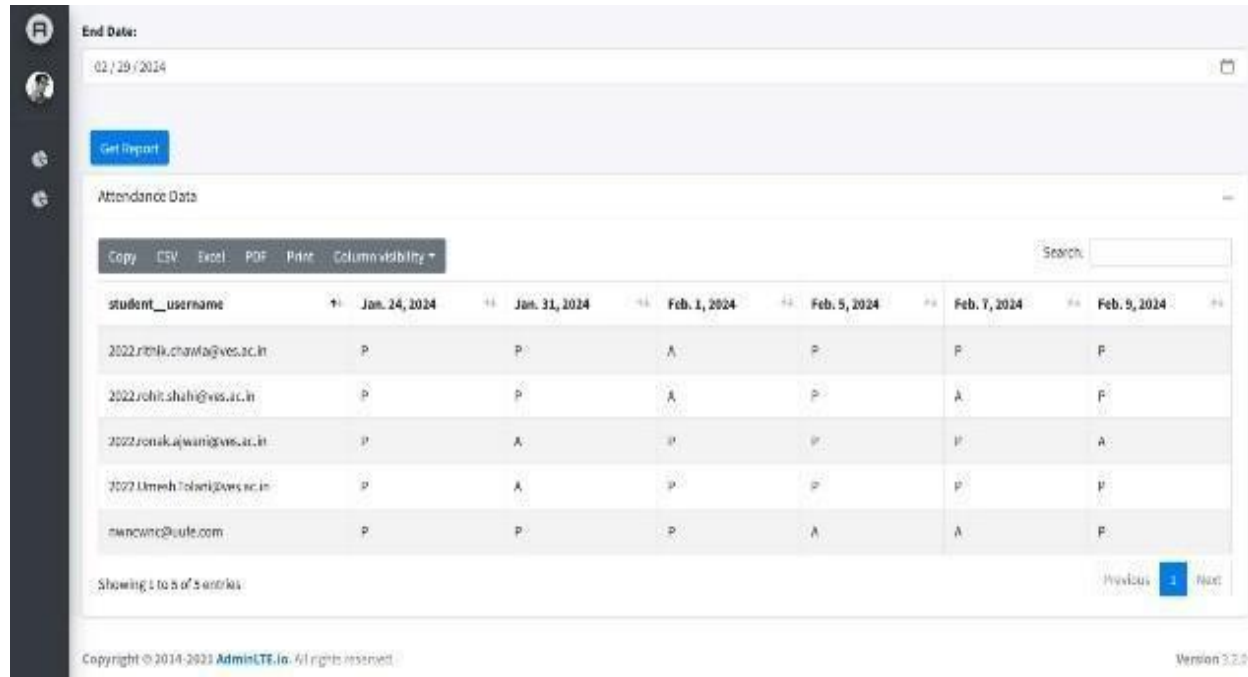
Below the form is the 'Attendance Data' section, which includes a table with the following data:

student_attendance__course__course_name	Feb. 1, 2024	Feb. 7, 2024	Feb. 9, 2024
Mobile Computing	P	P	P

The table is preceded by a toolbar with 'Copy', 'CSV', 'Excel', 'PDF', 'Print', and 'Column visibility' options, and a search bar. Below the table, it states 'Showing 1 to 1 of 1 entries' and includes 'Previous', '1', and 'Next' pagination controls. The footer shows 'Copyright © 2014-2021 AdminLTE.io. All rights reserved.' and 'Version 3.2.0'.

Fig 3B. Report generation (Student-wise view)

Results Obtained



The screenshot displays a web application interface for generating reports. On the left is a dark sidebar with a vertical stack of icons. The main content area has a light gray header with an 'End Date' field set to '02/29/2024' and a 'Get Report' button. Below this is a section titled 'Attendance Data' containing a table with attendance records. The table has a toolbar with 'Copy', 'CSV', 'Excel', 'PDF', 'Print', and 'Column visibility' options, and a search bar. The table columns are 'student_username', 'Jan. 24, 2024', 'Jan. 31, 2024', 'Feb. 1, 2024', 'Feb. 5, 2024', 'Feb. 7, 2024', and 'Feb. 9, 2024'. The rows list five students with their usernames and attendance status (P for Present, A for Absent). At the bottom of the table area, it says 'Showing 1 to 5 of 5 entries' and has 'Previous', '1', and 'Next' navigation links. The footer contains the copyright notice 'Copyright © 2014-2023 AdminLTE Inc. All rights reserved.' and the version number 'Version 3.2.0'.

End Date:

02/29/2024

Get Report

Attendance Data

Copy CSV Excel PDF Print Column visibility

Search

student_username	Jan. 24, 2024	Jan. 31, 2024	Feb. 1, 2024	Feb. 5, 2024	Feb. 7, 2024	Feb. 9, 2024
2022.ronik.chawla@ves.ac.in	P	P	A	P	P	P
2022.ronit.shah@ves.ac.in	P	P	A	P	A	P
2022.ronika.wanig@ves.ac.in	P	A	P	P	P	A
2022.Umesh.Tolani@ves.ac.in	P	A	P	P	P	P
mancwmc@puale.com	P	P	P	A	A	P

Showing 1 to 5 of 5 entries

Previous 1 Next

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Version 3.2.0

Fig 4. Report generation (Course-wise view)

Evaluation Measures

- **Customization:** Offer customization options to adapt the system to different organizational needs or preferences. This includes configurable settings for attendance rules, reporting formats, and user permissions. Like we can scale it for other institutions of ves and not only restricting it to VESIT depending and customising according to their needs.
- **Scalability:** Ensure the system is scalable to accommodate future growth in the number of users or locations. This could involve optimizing database structures, improving network infrastructure, and adopting cloud-based solutions.

Conclusion and Future Scope

In summary, our project addresses the shortcomings of manual attendance tracking by introducing an automated and accurate solution. By leveraging the DJANGO framework, we ensure efficiency, security, and flexibility in managing attendance. This not only improves processes for instructors and students but also signifies a shift towards modern management strategies. While our system meets current departmental needs, there remains scope for future enhancements and refinements.

References

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