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International Journal of Engineering Technology Research & Management (IJETRM)
Journal Article
https://ijetrm.com/issue/

EMPLOYEE MANAGEMENT SYSTEM

S Nithisha
Register No: 23105816, Mobile: 7806862011 Bachelor of Computer Applications (BCA) - In Progress Department of Computer Applications, India

S. Janani,
Register No: 23105809, Mobile: 9080355802, Bachelor of Computer Applications (BCA)-In Progress. Department of Computer, Applications, India.

ABSTRACT
The Employee Management System (EMS) is a web-based application developed to efficiently manage employee information and attendance within an organization. In many organizations, employee data is maintained manually using registers or spreadsheets, which leads to errors, data redundancy, and difficulty in managing records. The main objective of this project is to provide a centralized and automated system that simplifies employee data management and attendance tracking. The system allows administrators to add, update, and delete employee details, as well as record and monitor attendance accurately. Designed using modern technologies, the application provides a user-friendly interface for easy interaction, ensuring data accuracy and improving overall organizational efficiency.

Keywords:
Employee Management, EMS, Attendance Tracking, Web Application, Data Centralization, Admin Control, Report Generation.

I. INTRODUCTION

In today's fast-paced digital environment, organizations require efficient systems to manage employee data and administrative tasks. With the increasing number of employees in organizations, maintaining records manually using registers or spreadsheets has become difficult, time-consuming, and prone to errors. These traditional methods often result in data redundancy, lack of security, and inefficient handling of employee information. An Employee Management System (EMS) is designed to overcome these challenges by providing a centralized and automated platform for managing records and attendance.

Problem Statement: Manual systems often result in data redundancy, human errors, and difficulty in maintaining accurate records. As the number of employees increases, it becomes increasingly complex to store, update, and retrieve data in a timely manner. Additionally, there is no centralized platform to manage all employee-related information, leading to scattered data and poor coordination between departments.

Motivation: The motivation behind developing this system arises from the need to overcome the limitations of manual record-keeping. By implementing a web-based Employee Management System, administrative tasks can be streamlined, data accuracy can be improved, and information can be accessed quickly and securely. This project aims to provide an effective solution for modern organizations, reducing manual workload and improving overall management.

II. METHODOLOGY

The system follows a structured Software Development Life Cycle (SDLC) model to ensure quality and reliability. The development process is divided into the following phases:

- **Requirement Analysis:** Identifying key functionalities such as employee management and attendance tracking.
- **System Design:** Planning the architecture and designing the database schema (Employee and Attendance tables).
- **Development:** Coding the system using HTML, CSS, JavaScript for the frontend and Django/Python or PHP for the backend.
- **Testing:** Performing unit, integration, and functional testing to ensure system reliability.
- **Deployment:** Hosting the system on a suitable environment for real-time access.

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Component	Technology Recommended
Frontend	HTML, CSS, JavaScript
Backend	Python (Django) / PHP
Database	MySQL / SQLite

Table 1: Development Environment Overview

III. SYSTEM TESTING

The system testing phase was conducted to verify that the application meets all the functional requirements and operates correctly under various conditions. This phase involves checking the integration of all modules and ensuring
that the data flow between the frontend and database is accurate. Various testing strategies were applied to identify and fix bugs before final deployment.

Test Case ID	Description	Expected Result	Status
TC01	Admin Login	Access granted to the dashboard	Pass
TC02	Add New Employee	Record added to the database successfully	Pass
TC03	Attendance Logging	Daily attendance recorded and saved	Pass
TC04	Form Validation	Error messages displayed for empty fields	Pass

IV. CONCLUSION

The Employee Management System (EMS) has been successfully designed to provide an efficient solution for managing employee data and attendance. The system replaces traditional manual methods with a centralized and automated approach, improving accuracy, reliability, and ease of access. It reduces manual workload, minimizes human errors, and ensures better organization of data within the organization. While the system meets current requirements, it also provides scope for future enhancements such as mobile application integration and advanced reporting features.

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ISSN: 2456-9348
Impact Factor: 8.232

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