AI-BASED HUMAN RESOURCE MANAGEMENT SYSTEM

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Abstract- This project presents an AI-Based Human Resource Management System that automates and optimizes key HR operations such as recruitment, payroll, performance tracking, and employee management using artificial intelligence.

Keywords- AI, HRM System, Payroll, Recruitment, Performance Management, Automation, Employee Data, Timesheet, Attendance, Appraisal.

I. INTRODUCTION

The system aims to modernize traditional HR processes by integrating AI to reduce manual workload, improve accuracy, and enhance employee engagement and organizational efficiency.

Purpose : This To create an intelligent HR platform that streamlines daily HR tasks, supports data-driven decisions, and improves workforce management through automation.

A. Scope

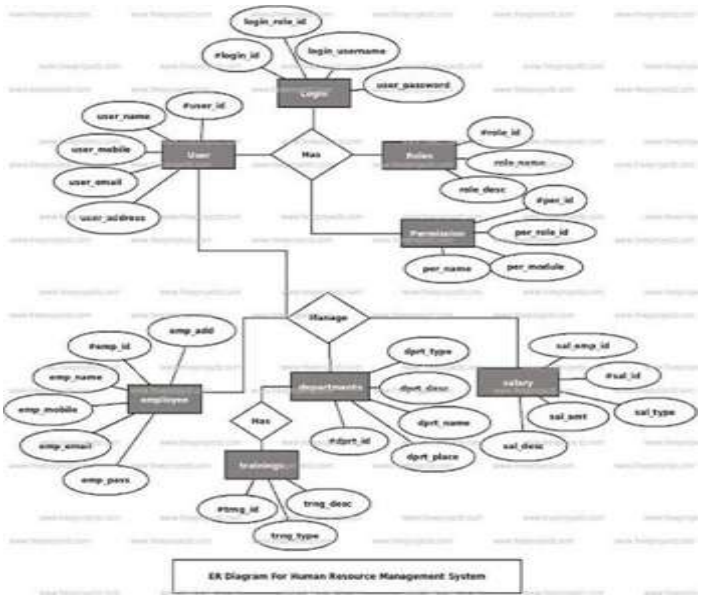
The system covers various HR functions including employee management, payroll, attendance, performance evaluation, recruitment, and reporting, scalable for both small and large organizations.

B. Literature Survey

Past research highlights the need for automation in HR. Traditional systems lack adaptability, while AI-based systems show improved efficiency, reduced bias, and better decision-making.

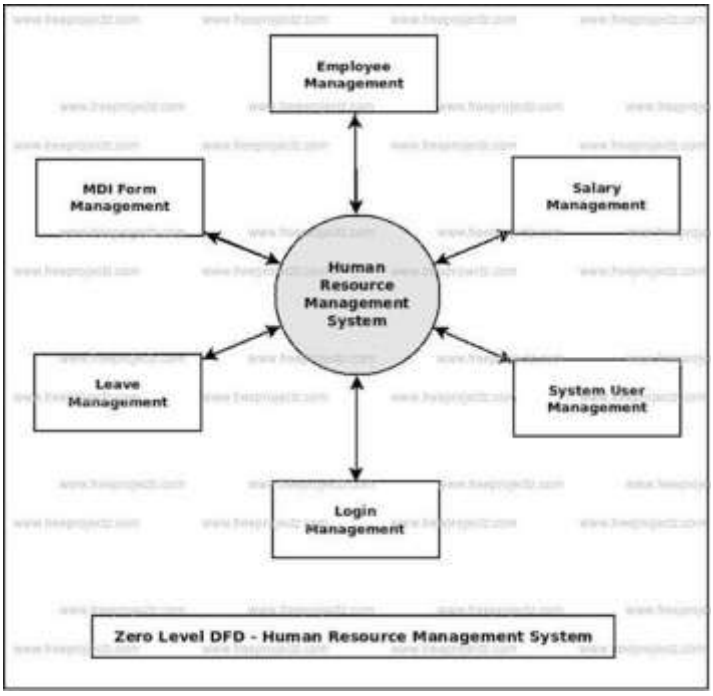
ER Diagram

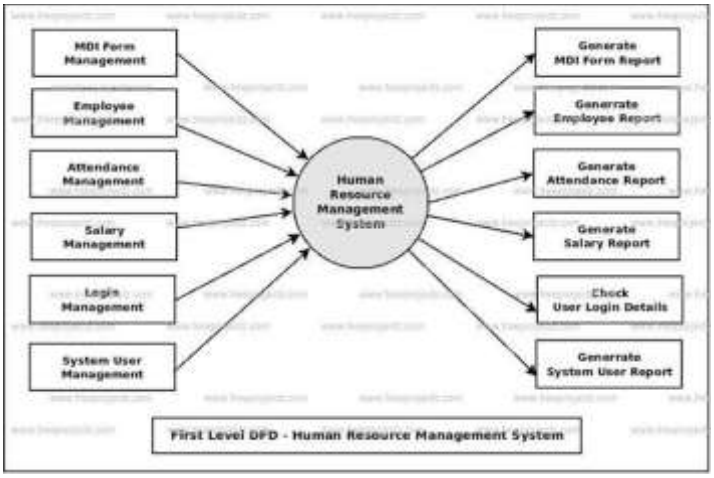
The ER diagram illustrates the relationship between key entities such as Employee, Payroll, Roles, Departments, and Training, forming the system's data structure.



DFD(Data Flow Diagram)

The Data Flow Diagram shows how data moves through different modules like Login, Attendance, Payroll, and Recruitment, ensuring a clear understanding of system workflows.





II. METHODOLOGY

The system follows a modular and structured development approach, incorporating AI algorithms for automation, a relational database for secure data handling, and a web-based interface for usability.

System Design: The system is designed using a three-tier architecture:

- Presentation Layer: Developed using React.js to ensure a dynamic and responsive UI.
- Business Logic Layer: Built in Laravel, responsible for data processing and route control.
- Data Layer: MySQL is used to manage and store sleaves, designations, and salaries.

B. Implementation : The AI-Based Human Resource Management System was implemented using modern web technologies and follows a modular design approach. The front end was developed using **HTML, CSS, and JavaScript**, ensuring a responsive and user-friendly interface. The back end was built with **PHP** and **MySQL**, providing secure data handling and smooth database operations.

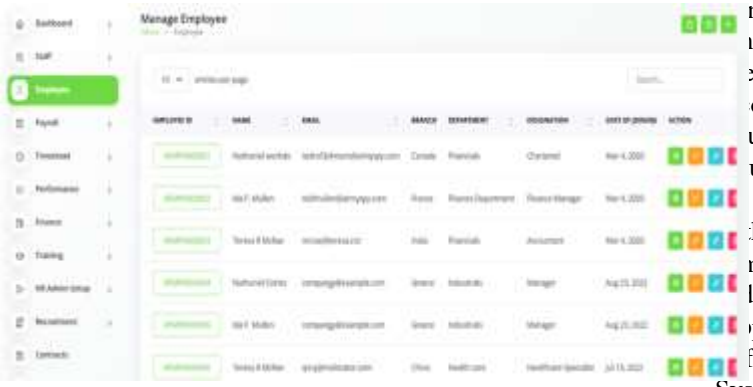
C. Each module—such as Employee, Payroll, Attendance, Recruitment, and Performance—was developed and tested individually before integration. AI components were integrated to automate tasks like resume screening, performance analysis, and sentiment evaluation. Role-based access control was implemented to ensure secure and personalized access for employees and administrators.

D. The system was deployed in a test environment for initial evaluation, followed by performance tuning and user feedback collection to improve the overall functionality and reliability.

DASHBOARD

The dashboard provides a real-time overview of system metrics like employee count, attendance, payroll summaries, and pending HR tasks.

EMPLOYEE



This module manages complete employee records, including personal details, roles, salaries, attendance, performance, and history of promotions or transfers.

III. CONCLUSION

The AI Based HRM System has demonstrated its value as a powerful tool in transforming traditional human resource management into a smarter, more efficient, and data-driven process. By automating key HR functions such as recruitment, attendance tracking, payroll management, and performance evaluation, the system addresses many of the challenges faced by modern HR departments.

Its AI-driven capabilities, including predictive analytics and sentiment analysis, empower HR managers to make informed decisions and proactively manage employee engagement and retention. Despite initial challenges such as system setup and training, the long-term benefits include reduced administrative workload, increased accuracy, and improved employee satisfaction. Overall, the system marks a significant step toward intelligent and adaptive HR practices that align with organizational goals and modern workplace expectations.

FUTURE SCOPE

The AI-Based Human Resource Management System holds great potential for future development and enhancement. One of the key areas of improvement is the integration of biometric and IoT-based attendance systems, which would automate and streamline employee tracking in real-time. The addition of AI-powered chatbots can revolutionize employee support by providing instant responses to HR-related queries without manual involvement. Developing a mobile application for both Android and iOS platforms would further increase accessibility, allowing employees and HR personnel to interact with the system anytime and from anywhere.

Another promising advancement lies in the implementation of predictive analytics, which could help HR departments forecast employee turnover, identify performance trends, and recommend personalized training programs. The system could also be expanded to include self-service portals, enabling employees and nagers to independently manage their profiles, view reports, and ıdle tasks like leave applications and goal tracking. Furthermore, egration with third-party platforms such as online job portals, ounting tools, and enterprise resource planning (ERP) systems uld create a more comprehensive solution that aligns with ustry standards.

he future, the system can be equipped with automated legal and npliance features that notify HR teams of regulatory changes l generate required reports. Multi-language and localization port can also be introduced to cater to a diverse user base across ferent regions. With these advancements, the AI-Based HRM System has the potential to become a fully intelligent, scalable, and globally adaptable solution for modern workforce management.

REFERENCES

1. W3Schools – PHP Documentation
This website was used as a key resource for learning and implementing PHP scripting in the backend development of the HRM system. It provided clear explanations and practical examples that helped in building dynamic functionalities such as login authentication, form handling, and database interactions.*(https://www.w3schools.com/php/)*

2. HRMGo – SaaS HRM and Payroll Tool
HRMGo served as a reference for understanding the structure and features of a professional HRM system. It provided valuable insights into modern HR modules such as payroll, attendance, employee management, and performance tracking, which inspired similar functionalities in this project. *(https://codecanyon.net/item/hrmgo-saas-hrm-and-payroll-tool/25982934)*

3. GeeksforGeeks
GeeksforGeeks was referred to for solving coding-related challenges and understanding complex programming concepts. It helped in backend integration, database handling, and debugging during project implementation. *(https://www.geeksforgeeks.org/)*