Enhanced E-HR Management System

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Abstract: —

The HR Management System is a Python-based application designed for seamless HR processes. Its user-friendly interface ensures easy navigation. Key features include secure authentication, role-based access control, and integration with Firebase for data storage. The system accommodates various user roles like administrators, HR personnel, bosses, and employees, each with tailored functionalities. Modular design allows for future enhancements. Admins can manage credentials centrally via Firebase. Modules cater to HR tasks, employee records, and boss evaluations. Dynamic resizing of background images enhances the interface. The project aims to boost HR efficiency, reduce manual tasks, and enhance organizational productivity through digital transformation.[1]

Keywords: - [2]

1. HR – Human Resource
2. HRMS - Human Resource Management System
3. Firebase
4. Python

INTRODUCTION: -

In today's dynamic business environment, effective human resource management is essential for achieving strategic objectives and staying competitive. The HR Management System (HRMS) integrates technology and HR practices to streamline processes and improve efficiency.

As the central hub for HR activities, the HRMS manages employee information, recruitment, performance appraisal, and training. It automates tasks and provides valuable insights through analytics for informed decision-making.

In the digital era, the HRMS centralizes employee data securely and facilitates training programs for skill enhancement.

Recognizing the strategic value of human capital, the HRMS enhances employee experience, ensures regulatory compliance, and drives organizational success. This introduction sets the stage for exploring the HRMS functionalities, advancing modern HR practices.

Advantage: - [1]

• Easy to access to the data
• Data alteration is easy
• Maintenance of the project is easy
• Reduced manual work
• Timely report generation

1

HRM Practices: -

Effective organizations prioritize developing their human resources to achieve strategic goals. They create environments that foster individual growth, skill enhancement, creativity, and job fulfillment. Various HRM strategies, including selective hiring, employment security, self-managed teams, and high-performance-based compensation, enhance organizational effectiveness. Other practices involve extensive training, reduced status distinctions, and sharing financial information across the organization. [3]
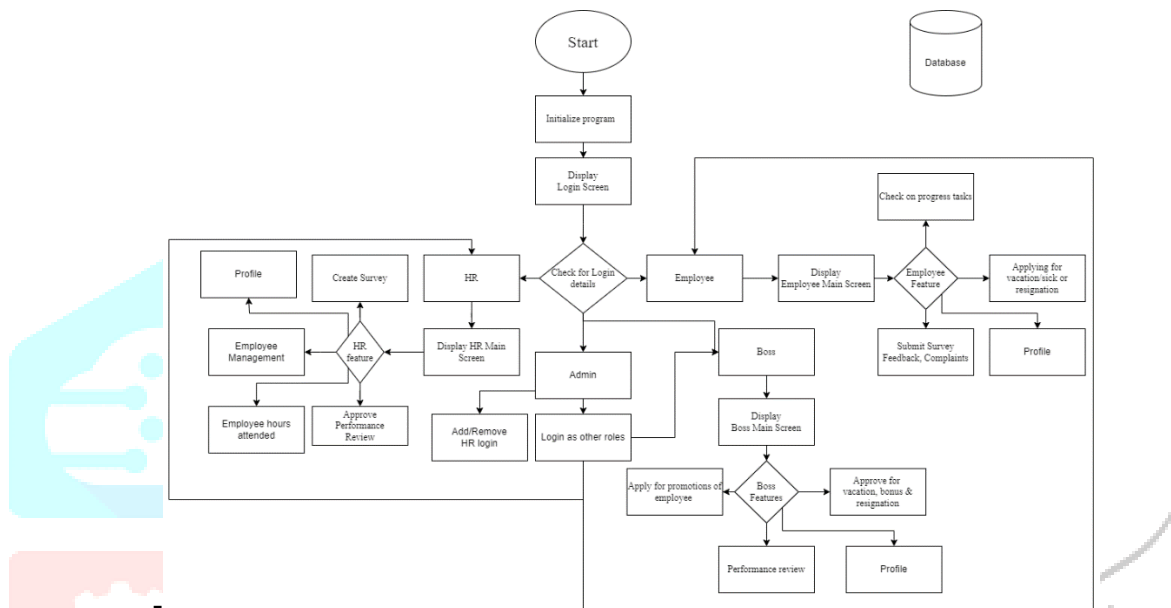
Flowchart:

Figure 1 – Flowchart of proposed HRMS

This is a flowchart of the basic showcase of HR Management System. [6]
1. Initialization: Users login to identify as Admin, HR, Boss, or Employee.
2. Database: User features correspond to login details.
3. Features: Differentiated for Admin, HR, Boss, and Employee.
4. Admin: Manages login details, sets permissions.
5. HR: Adds/removes staff, manages salary, approves feedback.
6. Boss: Views performance, approves leaves/resignations, bonuses/promotions.
7. Employee: Tracks progress, applies for leaves, submits surveys, requests vacations

Table: -[6]
  Admin: -

Sr.no	Emp id	User Name	Phone no.	password	Designation	Salary
1.	0	Samay	67********	Pandey	Super admin	12,000000/-

HR: -

SR.NO	Emp id	User Name	Phone no.	password	designation	Salary
1.	1	Armaan	34**********	Nakhuda	Team leader	23000/-

Manager: -

Sr.no	Emp id	User Name	Phone no.	Password	Designation	Salary
1.	21	Sushant	34******	Navle	Project manager	4300/-
2.	31	Paramjot	45*****	Singh	Marketing manager	4300/-

Employee: -

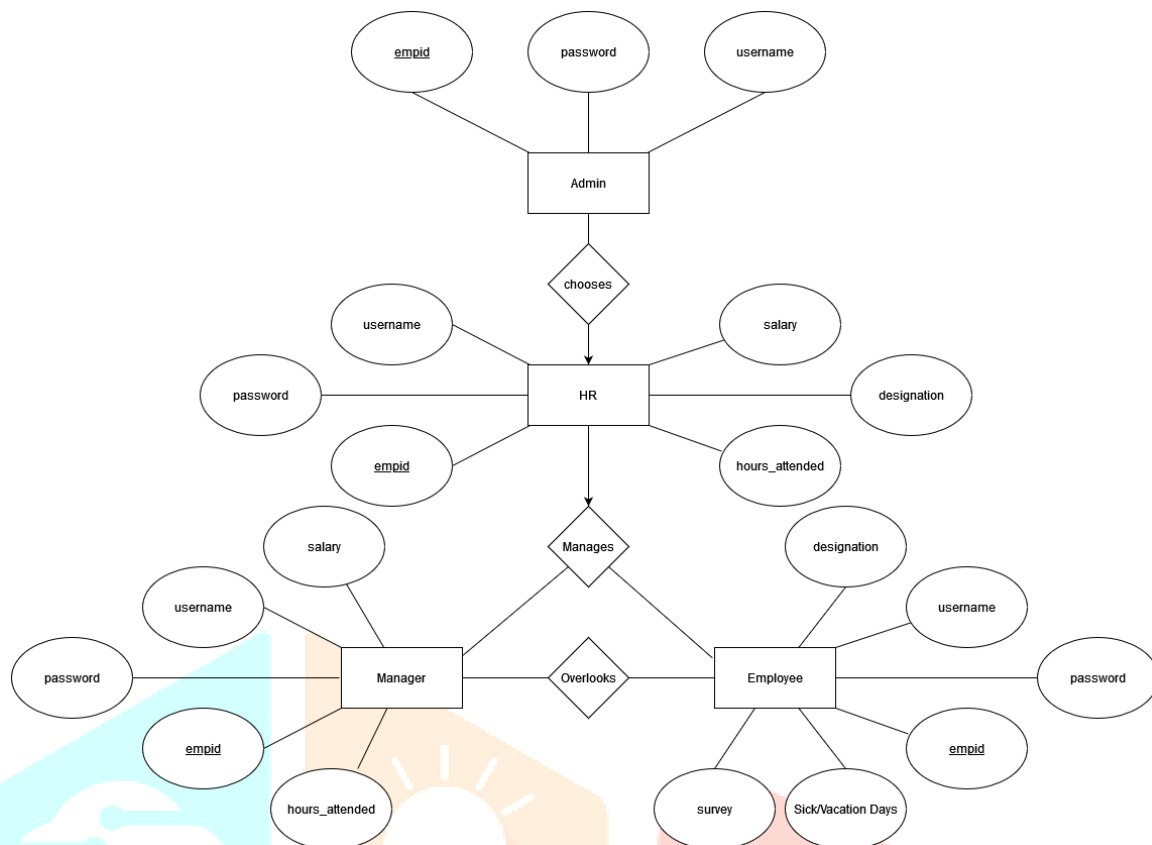| Sr.no	Emp id	User Name	Phone no.	Password	Designation	Salary
1.	27	Peeyush	54*******	Karnik	Accountant	2000/-
2.	18	Sairaj	65*******	Pai	Software developer	2000/-

ER Diagram: -

Figure 2 – ER diagram
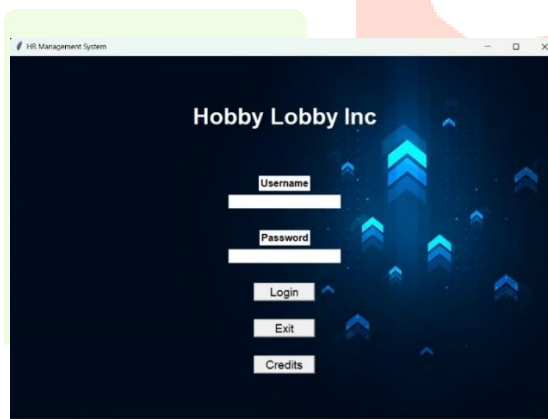
Figure: -
   1.Login Module: -

Figure 3 – login page

The initial page prompts users to input their username and password. After verification with the database server, users are logged in if credentials are valid. Four types of logins—Admin, HR, Manager, and Employee—open respective windows based on assigned roles in the database. [4]
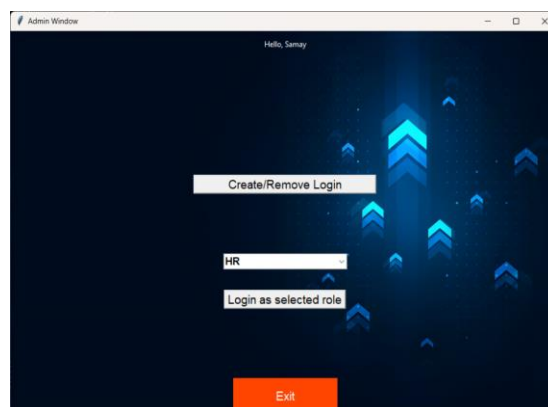
2.Admin Module. :-

Figure 4 – admin login

Create/Remove Login: This button will allow the Admin to add or remove logins of HR, Manager or Employee.
Login as Selected Role: The Admin will have an option to simulate as different levels of logins if he/she needs
to view or test something as a different permission level. This is provided to admin just so he can assure the
complete working of the app without needing the specific credentials[4]
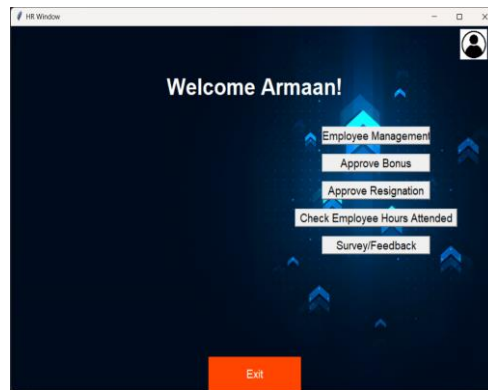
3. HR MODULE: -

Figure 5 – HR login

The first screen shown to the HR when the user logins in, it has buttons namely employee management to
manage Managers and Employees, Approve and assign bonus to employees and Managers respectively,
approve resignations for Managers and employees and send out survey with specified questions to the
employees to be filled.
This window basically provides the HR with the functionality to deal with the data of the employees similar to
a real time office. [4]
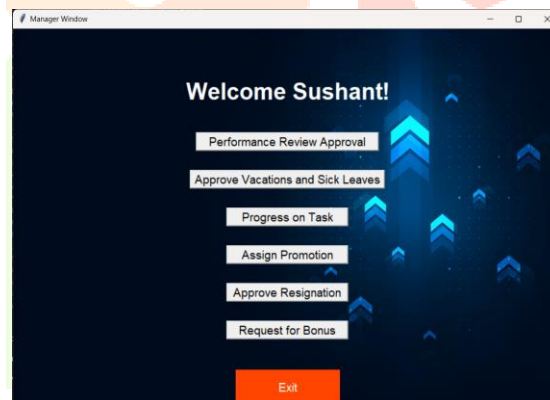
4.Manager Module: -

Figure 6 – manager login

Managers can approve performance reviews, leaves, and resignations, check task progress, assign
promotions, and request bonuses for employees. They receive and manage employee applications and can
initiate promotions or bonuses, pending HR approval. This window allows managers to oversee daily office
operations effectively. [4]
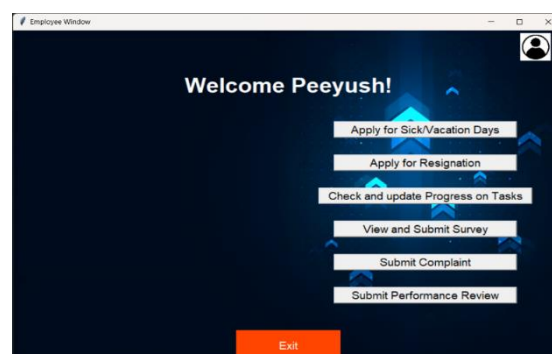
5. Employee Module: -

Figure 7 – employee login

The employee window allows for applying for sick/vacation days, resignation, checking/updating task progress, viewing/submitting HR surveys, submitting complaints, and performance reviews. Applications for sick/vacation days or resignation are sent for manager/HR approval, updating the database accordingly. Employees are notified of application status changes. [4]

Modern Day Challenges: -[6]

1. Data Storage: Storing years of data safely and efficiently has become challenging, but technology allows for secure and accessible records.
2. Shift to Information Age: Transitioning from the industrial age to the information age has made operations and planning easier due to internet and data availability.
3. Transparent Communication: Transparent communication in offices is essential to avoid misunderstandings and conflicts.
4. Individual Progress Tracking: Yearly data storage and reviewing can be cumbersome, necessitating proper individual progress tracking for skill assessment and improvement.

Acknowledgement: -[7]

Future Scope: -[8]

The future scope of HR management systems is promising and likely to evolve in several key areas:

1) User Authentication and Authorization: Implement more robust user authentication mechanisms such as two-factor authentication (2FA) or OAuth for enhanced security. Also, refine the authorization system to ensure that users only have access to the features and data relevant to their role.
2) User Interface Enhancements: Improve the user interface with modern design principles, responsiveness for different screen sizes, and accessibility features to cater to a wider range of users.
3) Advanced Reporting and Analytics: Integrate data visualization tools to generate comprehensive reports and analytics on employee performance, HR metrics, and managerial insights. This can help in making data-driven decisions and identifying areas for improvement.
4) Integration with External Systems: Enable integration with other enterprise systems such as payroll management, CRM, or project management tools to streamline data exchange and improve workflow efficiency.

Conclusion: -[5]

In conclusion, an HR management system plays a pivotal role in streamlining organizational processes, boosting employee engagement, and optimizing HR functions. It promotes efficiency, transparency, and compliance while facilitating ongoing evaluation and adaptation to evolving HR needs and technology. Implementing and maintaining such a system significantly enhances the organization's success and sustainability in today's dynamic business landscape.

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