

Abstract

The Human Resource Management System 360, or HRM 360, is an integrated approach for managing an organization's human resources. Recruitment, promotion, performance management, training, payment, and personal service for employees are just a few of the elements that HRM 360 offers to raise expectations for HR procedures, engage workers, and guarantee the efficient operation of the business. The technical foundation of HRM 360 is also covered. The system's 360-degree feedback mechanism aids in completing an exhaustive evaluation of workers, taking into consideration input from superiors, peers, and coworkers, thereby encouraging a culture of accountability and continual progress. Current concerns include regulation, diversity and inclusion, and remote employment. By automating repetitive procedures and offering a centralised framework for all HR functions, HRM 360 lessens administrative strain and frees up HR professionals to concentrate on strategic projects.

The report concludes with a discussion of the potential impact of HRM 360 on business performance, employee satisfaction and overall business performance, highlighting the important role of human resources management in today's business.

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Introduction

Human Resource Management (HRM) solutions are crucial for simplifying HR procedures and increasing operational effectiveness in the rapid business world of today. Constructed using the latest version of the CodeIgniter framework, the HRM-360 system is a cutting-edge solution meant to meet the many demands of human resource management. Its extensive features ensure that firms may manage their human resources more effectively and easily by streamlining numerous HR processes.

With a wide range of features covering significant aspects of workforce management, HRM-360 is an excellent choice. The system offers a comprehensive financial management solution, managing estimates, invoices, and billing in addition to handling bonuses, loan deductions, and provident funds. Centrally managed staff administration makes it easier to keep track of employees' data, and payroll and attendance are managed effectively with comprehensive reporting features.

The system's functionality includes leave management with thorough reporting, award and training administration, and more. Holiday scheduling, department and designation administration, and employee role management are just a few of the administrative tasks that HRM-360 can assist with. Its easy-to-use interface guarantees efficient operation and productive communication within the company, as do features like a centralised notice board and cost management.

HRM-360 is easy to use and versatile because to its responsive design and intuitive UI. Along with private notes and customisable permissions, the system offers capabilities for team and task management, file previews, comments, and team administration. With its extensive feature set, HRM-360 is a vital tool for contemporary HR departments, helping companies to run an effective and well-organised HR department in the fast-paced commercial world of today.

Problem Statement

2.1 Problem Statement:

Effectively managing human resources presents major challenges for businesses of all sizes in today's business conditions. Conventional approaches to HR tasks, like processing payroll, monitoring attendance, and managing employees, can be laborious, prone to mistakes, and ineffective. The complexity of handling personnel data, financial transactions, and HR procedures rises with business expansion, which frequently results in disorder and decreased productivity.

The comprehensive needs of contemporary enterprises are frequently not adequately met by the HR management solutions in use today. A lot of systems don't integrate well across different HR functions, which leads to inconsistent data and inefficiencies. Furthermore, it is challenging for organisations to successfully scale their HR operations and adjust to changing requirements when user-friendly interfaces and customisable features are lacking.

In order to solve these problems, the HRM-360 system offers an integrated, user-friendly solution that streamlines and simplifies HR procedures. HRM-360 makes use of the most recent version of the CodeIgniter framework to provide an extensive feature set for effectively managing employee records, payroll, attendance, leave, and other HR-related tasks. The ultimate goal of this system is to increase overall productivity and employee happiness by improving operational efficiency, lowering errors, and assisting companies in keeping an orderly HR department.

2.2 Objective:

The primary goal of the HRM-360 project is to create an all-encompassing Human Resource Management System that combines and optimises diverse HR operations onto a unified, integrated platform. Through the provision of a centralised solution for activities including payroll processing, personnel management, attendance monitoring, and leave administration, the system seeks to improve HR operations' efficiency and lessen the workload for administrative staff.

With two separate dashboards—a user dashboard for employees and an admin dashboard for HR experts—the HRM-360 system is built to meet the needs of various user roles. To serve each user group, a dashboard offers features and capabilities that are specifically designed for them. For instance, while administrators manage employee records, process payroll, and supervise leave requests, employees can manage their personal information, check attendance history, and request time off.

Furthermore, the system integrates advanced reporting and analytics functionalities with an emphasis on enhancing operational transparency and decision-making. In order to provide insights into performance indicators, attendance trends, and payroll summaries, this involves creating a variety of HR reports and visualisations. The goal of HRM-360 is to facilitate informed decision-making and improve overall efficiency within the company by combining these functions into an intuitive interface.

The ultimate goal of the HRM-360 project is to streamline HR procedures in order to guarantee a better structured, accurate, and effective HR department. Thus, the organization's strategic goals and objectives are supported and a more productive work environment is created.

2.3 Business aspects:

The HRM-360 system automates and streamlines regular HR operations including payroll processing, attendance monitoring, and leave management, greatly increasing operational efficiency. Processing times are sped up, errors are reduced, and less manual intervention is required due to this automation. The technology assists businesses in managing their human resources more efficiently by combining multiple HR tasks onto a single platform, freeing up critical time and funds for strategic projects.

For organisations, putting HRM-360 into practice can result in significant cost reductions. Automation lowers the demand for heavy human labour and the related expenses related to administrative work. Through increased precision and decreased errors, the technology also lessens the possibility of expensive compliance problems and payroll inconsistencies. Furthermore, by eliminating the need for different software solutions, the centralised approach lowers the cost of software maintenance and licensing.

HRM-360's advanced reporting and analytics features offer insightful data on a range of HR metrics and performance indicators. Better decision-making is made possible by this data-driven strategy, which provides a clear picture of payroll costs, attendance trends, and employee performance. These insights can help organisations make wise decisions regarding strategic planning, budgeting, and personnel management, which will eventually improve business results.

Due to its intuitive interface, the HRM-360 system improves the working environment for employees by tracking attendance, maintaining personal information, and requesting time off. Job satisfaction and engagement are increased by the interactive aspects of the system, which include task lists, calendar views, and notifications. HRM-360 supports a more productive and positive work environment, which in turn supports greater levels of employee morale and retention. It does this by streamlining HR procedures and making pertinent information easily accessible.

Methodology

3.1 Requirements Gathering and Analysis

In order to understand the needs and expectations of important stakeholders, such as end users, administrators, and super admins, the requirements collecting and analysis phase starts with their identification and engagement. In order to get comprehensive input on the features and functionalities needed for the HRM 360 system, this involves conducting workshops, surveys, and interviews. The emphasis is on outlining the requirements for each user function, such as payroll and record-keeping for administrators, system setup and supervision for super admins, and leave management and attendance monitoring for employees. After data collection, all relevant features, interactions, and permission levels are outlined in a thorough requirements document, guaranteeing that the system satisfies the demands of all parties involved.

3.2 System Design

The HRM-360 project's system design phase focusses on developing a strong architecture to meet the unique requirements of the admin and user dashboards. The first step in the process is creating thorough wireframes and prototypes for the User and Admin dashboards to make sure they satisfy the unique needs of the corresponding user groups. This involves developing user-friendly workflows and interfaces specific to each position. Simultaneously, the database architecture is carefully designed, creating a complete schema with tables for attendance, payroll, roles, and users. The HRM-360 system's numerous functionalities are supported by this schema, which guarantees effective data management and feature integration.

3.3 Development

3.3.1 Planning and Setup:

- Create a Git repository from scratch to handle version control right away. By guaranteeing that every modification to the code is recorded, this promotes cooperation and version control during the entire project.
- Install and set up CodeIgniter 4 according to industry standards for application organisation and directory structure. By laying the groundwork for backend development, this stage makes it possible to write reliable and maintainable code.
- To ensure that RESTful APIs are functioning properly, set up Postman for API testing. By assisting with the creation, sending, and analysis of API requests, this tool makes sure that every endpoint operates as it should.
- To ensure uniformity and prevent integration problems, make sure that every team member has the same configuration for their development environment, which includes Docker and Postman.

3.3.2 Backend Development:

- Configuring and migrating databases:
 - Schema Design: Create and design the database schema necessary to handle the payroll, user, and attendance tables found in the HRM-360 system.
 - Create migration scripts in order to initialise and seed the database with information. This guarantees that the database structure is ready for usage and established uniformly across various contexts.
- API Development:
 - RESTful APIs: Create RESTful APIs to manage essential functions like user administration, payroll processing, and attendance monitoring. Make sure these APIs offer the endpoints required for business logic and CRUD operations.
 - Integration: Link the front-end elements and external services to the APIs. In order to guarantee smooth data flow and interaction, this entails connecting the backend functionality with the user interfaces and other connected systems.

- Security and Validation:
 - Validation: Make sure that the data submitted via the APIs complies with the necessary constraints and formats by putting validation tests in place. This involves checking the accuracy of user information, attendance records, and payroll computation inputs.
 - Security: To safeguard sensitive data and procedures, including security measures. This entails putting authorisation and authentication procedures in place, encrypting private data, and protecting against frequent security risks.

3.3.3 Frontend Development:

- Interactive Prototypes: Using the design principles as a guide, create interactive prototypes and wireframes for the admin and user dashboards. By visualising the dashboards' design, usability, and navigation, these prototypes facilitate iterative design modifications and stakeholder feedback.
- Responsive design: Use HTML5, CSS3, and Bootstrap in responsive design to create a user interface that is both aesthetically pleasing and responsive. Make sure the dashboard interfaces adjust to different screen sizes and devices and work properly.
- Reusable Components: Use Vue.js and React.js to create reusable user interface components for dynamic and interactive elements. These elements make it possible to create and maintain interactive features like modals, tables, and forms in an effective manner.
- Charting and graph: To produce charts and graphs, use data visualisation tools such as Sparkline, Morris.js, and Gauge.js. By showcasing data patterns and performance metrics, these visualisations improve user understanding and decision-making.
- API Integration: To retrieve and display data, link frontend components to backend APIs. Make sure the data obtained from the APIs drives dynamic adjustments to the user interface.

3.3.4 Feature Implementation:

- User Dashboard:
 - Provide users with the means to access and modify their personal data, including contact details and profile preferences, through the use of personal data management tools.
 - Give users access to a thorough record of past attendance, including with clock-in and clock-out times.
 - Allow users ask for time off and monitor the progress of their leave requests.
 - Include calendar views for scheduling and keeping track of critical dates, task lists for managing individual tasks, and notifications to notify users of updates and necessary actions.
- Admin Dashboard:
 - Give administrators the resources they need to monitor and handle leave requests, such as leave balances and protocols for approval.
 - Allow the functions of payroll processing, such as disbursements, deductions, and salary computations.
 - Facilitate thorough control of personnel files, including hiring, updating, and firing.
 - Provide the ability to create and export a variety of HR reports, including payroll reports, performance reviews, and attendance summaries.

3.4 Integration and Testing:

- Make sure there is a smooth integration between the front-end and back-end elements. Check that data flows accurately between user interfaces and server-side processes, and that frontend interfaces communicate effectively with backend APIs.
- Perform thorough testing, including system tests to evaluate the overall functionality of the entire system, integration tests to verify interactions between modules, and unit tests to verify specific components.
- Verify through UAT that the system satisfies end users' needs and expectations. Get input on the overall user experience, functionality, and usability.
- To determine areas that need improvement, compile input from testing phases, including UAT. This feedback sheds light on any problems faced and how satisfied users are.
- Make the required modifications and enhancements in light of the input you've received. Before the system is finally deployed, take care of any problems or defects and improve the system's functionality and user experience.

3.5 Documentation:

- To help users with comprehension and future maintenance, include comments and explanations inside the code.
- To guarantee uniformity and readability, follow to coding standards and best practices.
- Create comprehensive guides and user manuals for administrators and end users. Provide instructions for use for the different features and functions.

3.6 Evaluation and Feedback:

- Analyse how well the system performs and accomplishes its objectives.
- Get input from users and stakeholders to determine which features need to be improved.
- Based on input and performance assessment, plan and execute updates and improvements. Make constant improvements to the system to better serve user needs.

System Design and Implementation

4.1 Architectural Design:

4.1.1 Creating a Blueprint:

- User Dashboard: Designed to give employees access to necessary functions including leave requests, attendance tracking, and modifications to personal data. This dashboard's wireframes guarantee a simplified user interface that puts an emphasis on convenience of use and rapid access to important features.
- This dashboard, designed with HR managers and administrators in mind, has tools for handling payroll, keeping track of employees, and producing reports. Prototypes concentrate on giving clear insights into employee data and facilitating the effective management of organisational HR activities.

4.1.2 Database Design:

- ER Diagram: Illustrates the relationships between the various elements in the database schema, including User, Role, Payroll, Attendance, and Leave. The User object, for instance, reflects the relationships and data structure of the system by linking to Payroll and Attendance.
- Schema Development: Builds the links and tables required to support the various HR functions. Relevant data, including payroll details, attendance records, and employee details, are stored in each table.
- Migration Scripts: Write scripts to seed initial data and configure the database structure.

4.2 Implementation Phase:

4.2.1 Backend Development:

- **API Development:** Use CodeIgniter 4 to create RESTful APIs that can handle queries for employee records, leave administration, and payroll. Ensuring seamless functionality, these APIs oversee data flows between the frontend and backend.
- **Business Logic:** Create backend logic to maintain employee records, approve leaves, and execute payroll calculations. Coding the workflows and rules necessary to automate HR procedures is part of this.
- **Database Integration:** Establish a connection between MySQL and the backend to guarantee data accuracy and speed.

4.2.2 Frontend Development:

- **UI Development:** Utilise HTML5, CSS3, and JavaScript frameworks like Vue.js and React.js to create interactive and responsive user interface components. The frontend's layout and design are intended to make it easy to use on many screens and devices.
- **Data Visualisation:** Use technologies such as Sparkline, Gauge, and Morris.js to provide performance metrics, data trends, and other visual insights. With the use of simple graphs and charts, these tools assist users in rapidly understanding complex data.
- **Frontend-Backend Integration:** Use AJAX calls to link UI elements to backend APIs.

4.2.3 Integration and Testing:

- **Module Integration:** Make sure that every element functions as a whole, including front-end interfaces, APIs, and third-party services. Linking and confirming the interaction between the frontend and backend capabilities is the task of this step.
- **Testing:** To make sure the system works as intended overall, perform comprehensive testing, which should include system tests, integration tests for interactions between components, and unit tests for individual components. The goal of this stage is to find and fix any problems prior to deployment.

4.2.4 Deployment:

- **Environment Configuration:** Configure the network and servers in the environment in order to host the application. This involves setting up server settings and making sure networking is secure and performs well.
- **Production Deployment:** Make the program accessible to end users by deploying it to the production environment. Keep an eye on the deployment to handle any urgent problems and guarantee proper functioning.
- **Performance Monitoring:** Keep focus on stability and performance.
- **Training and Documentation:** Train administrators and users how to operate the system efficiently. Provide thorough documentation, such as user manuals and technical specifications, to facilitate continued usage and maintenance.

4.3.2 User Flow Diagram:

The User Flow Diagram in the HRM-360 project describes the procedures users must follow in order to finish important tasks, including requesting a leave of absence. The process starts with the employee entering their login credentials, going to the Leave Management area, and completing the leave request form. The request is sent to the administrator for approval by the system when it is submitted. After revising the leave balance and informing the employee of the decision, the administrator either approves or rejects the request. The user experience is improved and all essential procedures are covered for efficient leave management are ensured by this flow, which guarantees a transparent, methodical approach for processing leave requests.

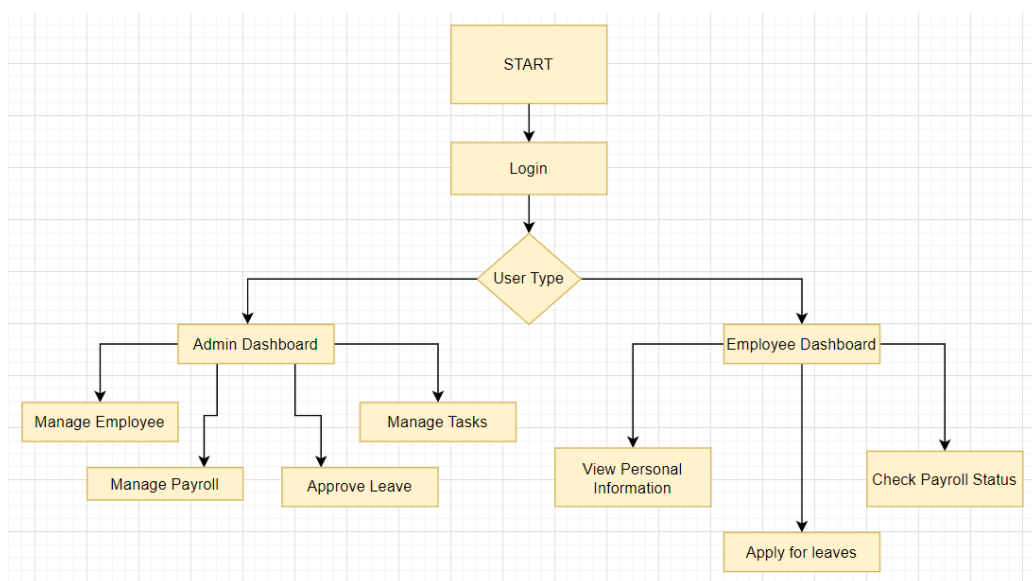


Figure 4.3.2 User flow diagram

Chapter -5:

Screenshots

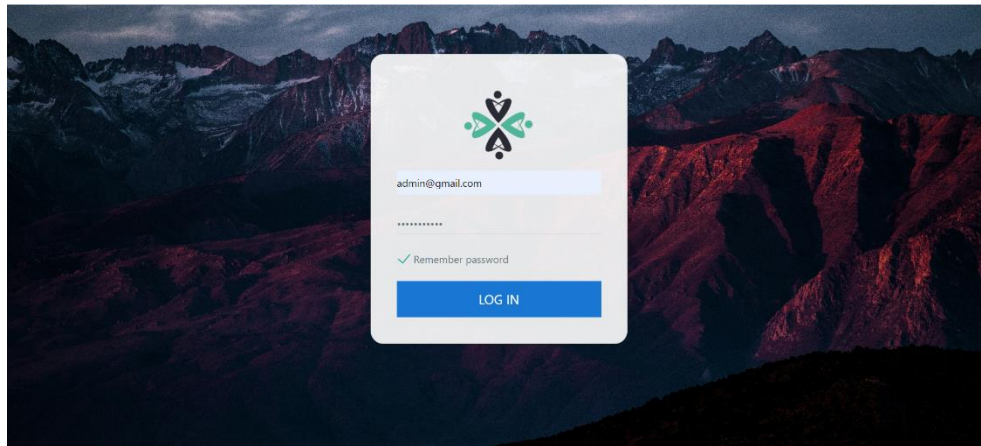


Figure 5.1: Login Page

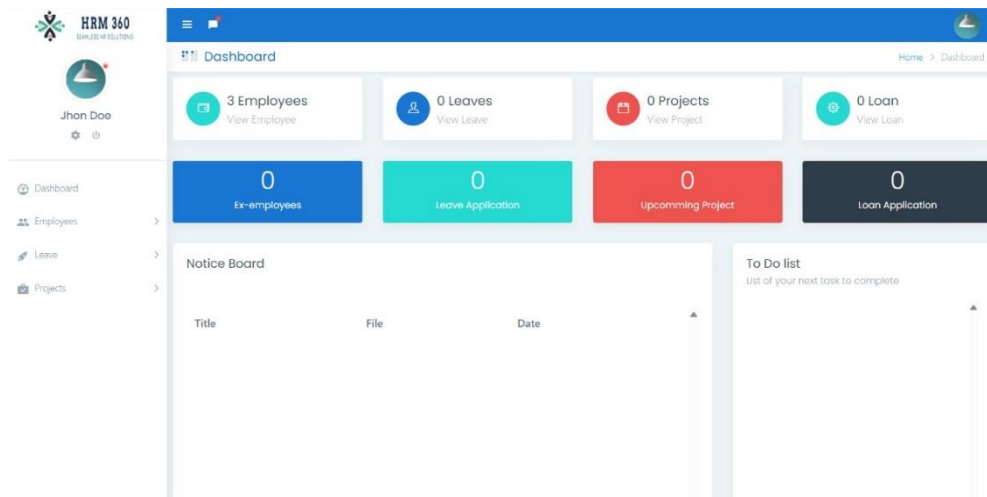


Figure 5.2: Dashboard

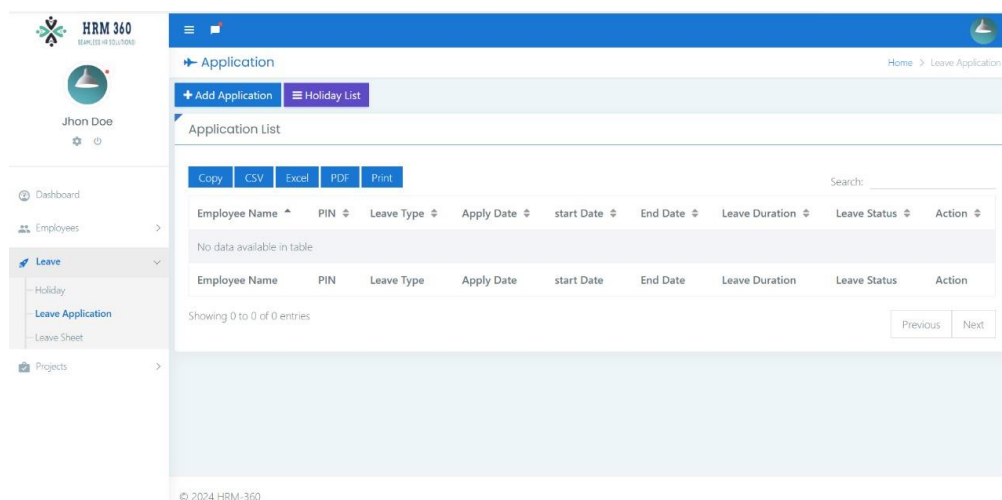


Figure 5.3: Leave Management

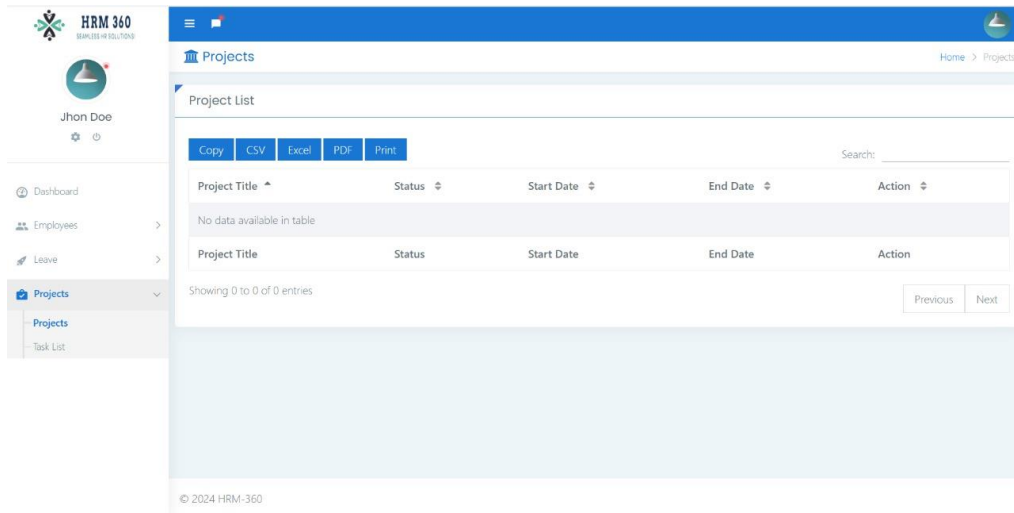


Figure 5.4: Project management

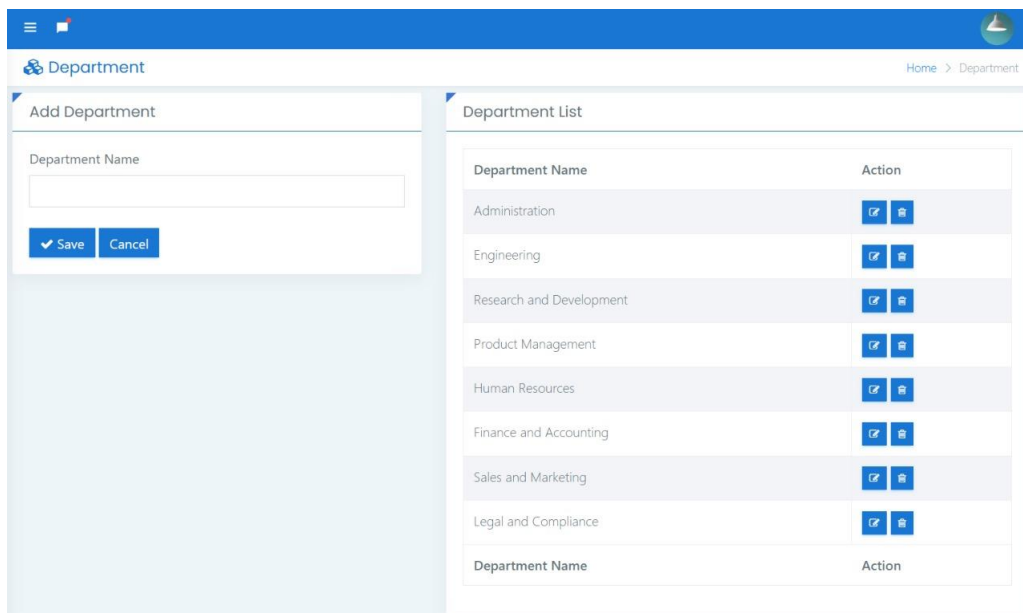


Figure 5.5: Department management

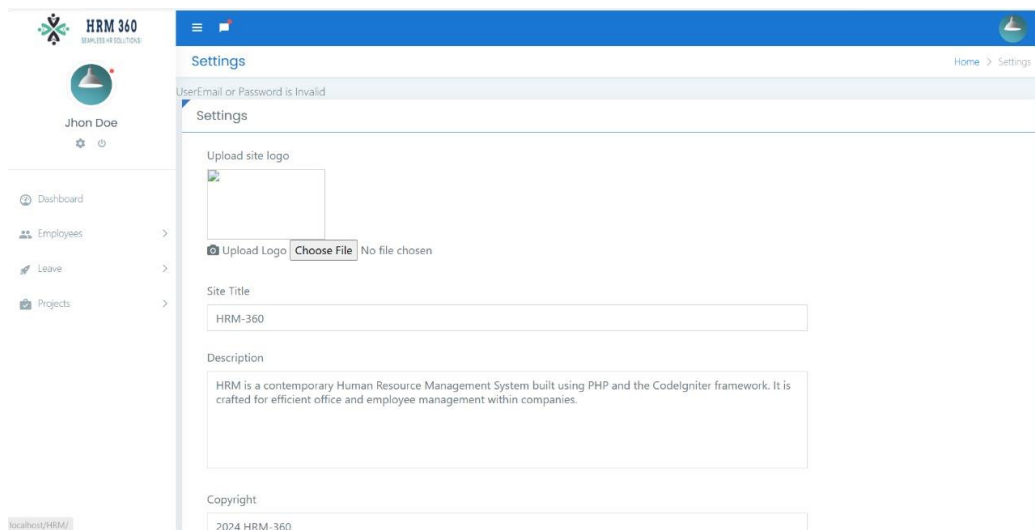


Figure 5.6: Site settings

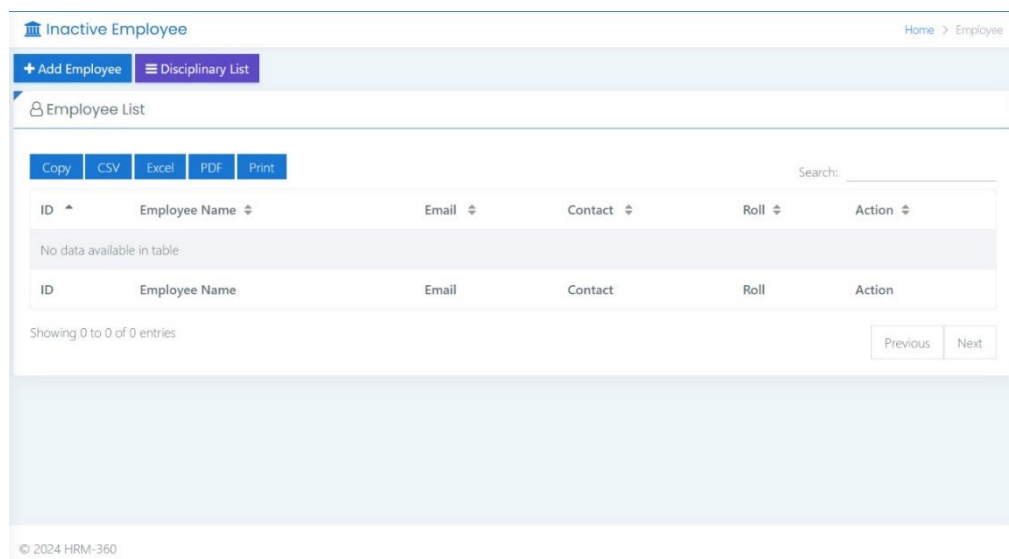


Figure 5.7: Employee list

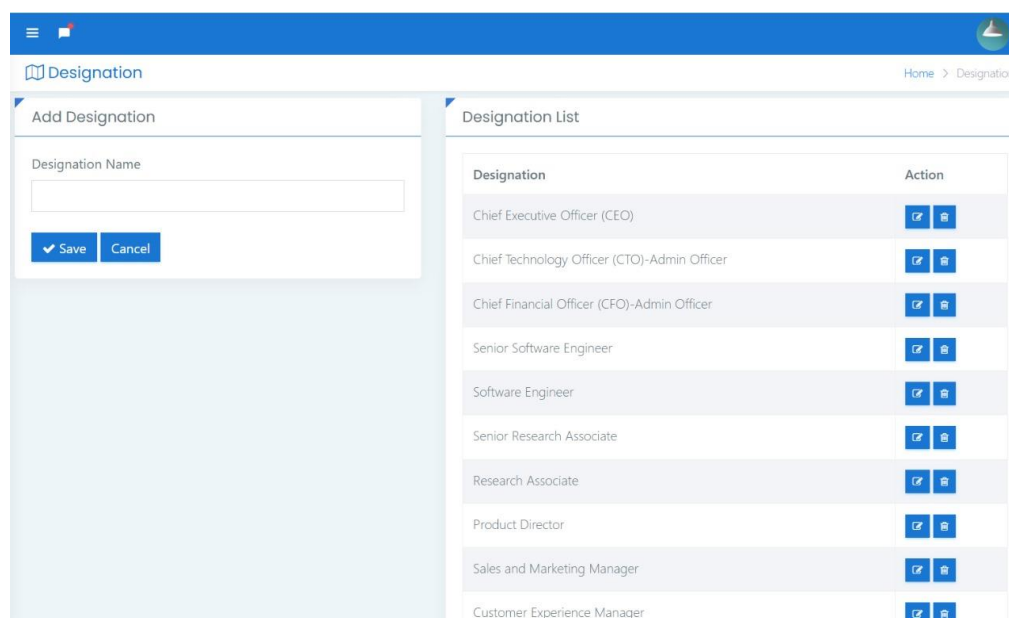


Figure 5.8: Designation assignment

Conclusion

The HRM-360, represents a revolutionary change in the way businesses handle human resources management. HRM-360 streamlines and improves procedures including hiring, performance management, compensation, benefits administration, and recruiting by combining a variety of HR tasks into a single, unified system. By ensuring that every HR function is effectively managed on a single platform, this all-inclusive strategy lowers complexity and boosts operational effectiveness.

The user-friendly interface of HRM 360, which is intended to make communication easier for all users—administrators and employees alike—is one of its best qualities. Sensitive HR data is safeguarded and managed in accordance with legal standards thanks to the system's robust security and compliance features and ease of use.

The system's function in fostering a positive work environment is complementary to its capacity to optimise human resource procedures. HR professionals can concentrate on strategic efforts that improve employee satisfaction and engagement by using HRM 360, which automates repetitive processes and offers important information.

In conclusion, HRM 360 provides a solid option for modern HR management. With an emphasis on user experience and data security, it integrates critical HR processes, offers advanced analytics, and seamlessly integrates with third parties. All of these features position it as an indispensable tool for businesses looking to enhance their HR operations and workplace culture. Organisations may increase productivity, make wise decisions, and cultivate a happy, productive work environment using HRM 360.

Future Scope

- **Advanced Analytics:** To gain a deeper understanding of HR indicators like employee performance trends and turnover forecasts, integrate advanced analytics with business intelligence tools.
- **Self-Service site:** Provide a self-service site where workers may request time off, examine their pay stubs, and manage their personal data.
- **AI and Automation:** Use AI-powered tools to automate time-consuming processes like candidate matching and resume screening.
- **Third-Party Integrations:** Include connections to other HR platforms and technologies, like learning management systems (LMS), applicant tracking systems (ATS), and benefit suppliers.
- **Improved Security Measures:** strengthen security procedures with elements like multi-factor authentication (MFA) and sensitive data encryption.
- **Develop Mobile App:** To give customers access to HRM-360 features while they're on the go, develop a specialized mobile application for iOS and Android.
- **User Feedback Mechanism:** Provide a means for gathering suggestions from users so that the system can be improved over time based on actual user experiences.

References

- *CodeIgniter Tutorial*. (n.d.). <https://www.tutorialspoint.com/codeigniter/index.htm>
- *W3Schools.com*. (n.d.). <https://www.w3schools.com/php/>
- *W3Schools.com*. (n.d.-b). <https://www.w3schools.com/MySQL/default.asp>
- *Human Resource Management System Project // HRMS Project // LazyCoder* [Video]. YouTube. <https://www.youtube.com/watch?v=WJYKAyRn9bs>
- Navaz, A. S. Syed & A S, Syed Fiaz & Prabhadevi, C. & Sangeetha, V. & Gopalakrishnan, S.. (2013). Human Resource Management System. International Organization of Scientific Research - Journal of Computer Engineering. 8. 62-71, (Impact Factor : 1.686).