Project Report

Human Resource Management System

Submitted by:

Kusum Meghrajani (IU1941220028)

In the fulfilment of the requirement for the degree of

Bachelor of Technology

In

Information Technology

INDUS INSTITUTE OF TECHNOLOGY & ENGINEERING,

AHMEDABAD, GUJARAT

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Prepared by:

Kusum Meghrajani (IU1941220028)

Under Guidance of:

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CANDIDATE'S DECLARATION

I declare that final semester report entitled "**Human Resource Management System**" is my own work conducted under the supervision of the guide **Ms. Parinita Hajira.**

I further declare that to the best of my knowledge, the report for B.Tech final semester does not contain part of the work which has been submitted for the award of B.Tech Degree either in this university or any other university without proper citation.

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Date: 30/03/2023

To Whomsoever it may concern

This is to certify that Ms. Kusum Meghrajani, Student of Indus University, is undergoing 6-month internship in the field of Node Js, pursuing from 02/01/2023.

During the period her internship program with us, so far, she has been exposed to different processes and found diligent, hardworking and inquisitive.

This certificate is issued upon her request for the purpose of university procedure, this holds no other obligation on the part of our company.

Best Regards

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UNIVERSITY CERTIFICATE

INDUS INSTITUTE OF TECHNOLOGY AND ENGINEERINGINFORMATION TECHNOLOGY

2022 -2023

ज्ञानेन प्रकाशते जगत्
INDUS UNIVERSITY

CERTIFICATE

Date: 21 - 4 - 2023

This is to certify that the project work entitled "HUMAN RESOURCE MANAGEMENT SYSTEM" has been carried out Kusum Meghrajani under my guidance in partial fulfillment of degreeof Bachelor of Technology in INFORMATION TECHNOLOGY (Final Year) of Indus University, Ahmedabad during the academic year 2022 – 2023.

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ACKNOWLEDGEMENT

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Moreover, we acknowledge with a deep sense of reverence, my gratitude towards my parents, who have always supported me morally. At last, we are immensely obliged to our friends for their elevating inspiration, encouraging guidance and proper supervision in the completion of this project.

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ABSTRACT

The HUMAN RESOURSE MANAGEMENT SYSTEM is to maintain the data of all active and inactive employees requires a significant amount of time if we do it without software. Every organization has their own human resources in order to perform the internal and external human resource activities. Among the total human resource activities, managing the human capital i.e. employees is the significant task to any HR.

The main function of HR is to recruit, manage and store the employee data which includes their personal information including their job roles, job streams, projects allotted, salaries and many more which allows them to face huge workload. In order to support the HR's, there are some electronic based HR systems called HRMS human resource management system. Organizations should maintain HRMS software with a huge number of client server applications, service providers as well as control tools. But this application is cost effective one that allows them to manage their employee's data in a simple manner.

This HUMAN RESOURSE MANAGEMENT SYSTEM will allow the HR's to manage the employee information systems, employees recruitment, employee leaves, employee holidays, employee departments. This project belongs to a category of web application that can be accessed through PC with internet connection.

COMPANY PROFILE

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About Us

Wappnet Systems serve customers across Blockchain world, Healthcare, Media, Financial Services, Entertainment, Engineering, Retail, Software Product Houses and Independent Software Vendors. Wappnet Systems is committed to make use of the latest tools and technologies to deliver the best solutions to our clients globally. We have experience of developing and maintaining successful software products, eCommerce portals, marketplaces, social networks, real-time business analytics and composite sync and integrations.

Vision

Everything Wappnet Systems do is aimed towards satisfaction and positive feedback.
wappnet team works smart to help the clients get result-oriented solutions that help them stay ahead in the competition.

ABBREVIATION

Abbreviations used throughout this whole document are:

JSON	JavaScript Object Notation
TS	Type Script
API	Application Programming Interface
SQL	Structure Query Language

1. Introduction

1.1 Purpose

1.2 Scope

1.3 Intended Audience

1.4 Technology Used

Chapter 1: Introduction

1. INTRODUCTION

The Human Resource Management System (HRMS) is a comprehensive software solution designed to manage the employee-related activities of an organization. It includes various modules such as User Management, Employee Management, Department Management, Holiday Management, and Leave Management. With the User Management module, the system enables the creation, modification, and deletion of user accounts, providing secure access to the HRMS. The Employee Management module allows the management of employee records such as personal information, job details, and performance evaluations. The Department Management module handles the creation and management of departments and their respective roles and responsibilities. The Holiday Management module helps manage the organization's holiday calendar and track employee leave requests. Finally, the Leave Management module streamlines the management of employee leave requests and approvals, including sick leave, vacation, and other types of time-off. Overall, the HRMS is a centralized tool that enables efficient management of human resource processes, increasing the productivity and effectiveness of the organization.

1.1 PURPOSE

The purpose of the Human Resource Management System (HRMS) is to provide a centralized tool for managing employee-related activities within an organization. The system aims to streamline various HR processes, including employee record management, departmental organization, holiday scheduling, and leave requests. The HRMS enables efficient tracking and management of employee data, enhancing decision-making processes and enabling effective resource allocation.

Additionally, the system aims to improve employee satisfaction and engagement by providing timely access to relevant information and streamlining processes such as leave requests and approvals. Overall, the primary goal of the HRMS is to optimize HR processes, increase productivity, and improve employee satisfaction and retention rates. By simplifying and automating HR tasks, the system frees up HR personnel to focus on more strategic tasks, ultimately benefiting the entire organization.

1.2 SCOPE

The project scope of the Human Resource Management System (HRMS) includes the implementation of the following modules: User Management, Employee Management, Department Management, Holiday Management, and Leave Management. The key points of each module are as follows:

- User Management: This module enables the creation, modification, and deletion of user accounts, providing secure access to the HRMS. It includes features such as login authentication, user roles and permissions management, and password reset.
- Employee Management: This module handles the management of employee records such as personal information, job details, and performance evaluations. It includes features such as employee profile creation, attendance management, and salary information management.
- Department Management: This module manages the creation and management of departments and their respective roles and responsibilities. It includes features such as department creation, employee department transfer, and departmental reporting.
- Holiday Management: This module manages the organization's holiday calendar and tracks employee leave requests. It includes features such as holiday management, leave calendar management, and leave request approval.
- Leave Management: This module streamlines the management of employee leave requests and approvals, including sick leave, vacation, and other types of time-off. It includes features such as leave request submission, leave balance tracking, and leave request approval or rejection.

The HRMS project scope aims to provide a comprehensive tool for managing human resources processes efficiently. It facilitates the automation of repetitive and time-consuming tasks, allowing HR personnel to focus on more strategic activities.

By implementing the HRMS, the organization can optimize HR processes, increase productivity, and improve employee satisfaction and retention rates.

1.3 INTENDED AUDIENCE

The intended audience for a Human Resource Management System (HRMS) project can vary depending on the organization, but typically includes HR personnel, management, and employees who will be using the system. Other potential stakeholders may include IT staff, project sponsors, and external vendors or consultants involved in the project. The project team should also consider the needs of any regulatory bodies or compliance requirements that may impact the HRMS.

1.4 TECHNOLOGY

Technology and tools wise this project covers:

- Front-end: Angular is a TypeScript-based open-source web application framework that allows developers to build complex and dynamic single-page web applications. It provides a component-based architecture, with robust features for data binding, dependency injection, and routing. Angular offers a wide range of built-in directives and services that make it easy to develop responsive and scalable front-end applications.

- Back-end: NestJS is a powerful Node.js framework that provides a scalable and efficient platform for building server-side applications. It is built with TypeScript and offers a modular architecture that allows developers to easily structure their code into reusable and maintainable modules. NestJS provides a range of features such as dependency injection, declarative programming, and a powerful middleware system that makes it easy to build scalable and efficient back-end applications.

- Database: MySQL is an open-source relational database management system that is widely used in web development. It is a fast and reliable database system that offers features such as support for transactions, multiple storage engines, and

powerful indexing capabilities. MySQL is also scalable, secure, and has a large community of developers, making it a popular choice for building web applications.

By using Angular for the front-end, NestJS for the back-end, and MySQL for the database, the HRMS project can take advantage of the robust features, scalability, and maintainability offered by these technologies. This combination of technologies provides a powerful platform for building a modern, efficient, and scalable HRMS.

2. Literature Review

2.1 Literature Review

Chapter 2: Literature Survey

2. 1 LITERATURE REVIEW

HRMS is a software application used by organizations to manage and automate human resource processes such as recruitment, payroll, employee management, and performance management.

Several research studies have highlighted the benefits of HRMS. A study by Chung and Kim (2019) found that HRMS can improve the efficiency of HR processes and reduce errors, resulting in cost savings for organizations. Another study by Huang and Li (2020) found that HRMS can enhance employee engagement and satisfaction, leading to improved job performance.

HRMS can also provide insights into employee data, such as employee performance and engagement, which can be used to make data-driven decisions to improve organizational performance. A study by Cho and Moon (2020) found that HRMS can provide significant benefits to organizations by improving data accuracy, reducing administrative tasks, and enhancing employee engagement and satisfaction.

However, there are also challenges associated with HRMS implementation. One of the main challenges is the resistance to change from employees and HR personnel, as the new system may require changes in the way work is done. Another challenge is the integration of the HRMS with other organizational systems, such as accounting and finance.

Effective change management strategies are critical for successful HRMS implementation. A study by Shariq et al. (2019) highlighted the importance of stakeholder involvement, communication, and training to ensure user adoption and integration with other systems.

In conclusion, the literature suggests that HRMS can provide significant benefits to organizations, including increased efficiency, improved data accuracy, and enhanced employee engagement and satisfaction. However, successful implementation requires careful planning, stakeholder involvement, effective change management strategies, and integration with other organizational systems.

3. Overall Description

3.1 Product Perspective

3.2 Product Functions

3.3 User Characteristics

3.4 Constraints

3.5 Assumptions and Dependencies

Chapter 3: Overall Description

3.1 PRODUCT PERSPECTIVE

The HRMS project is a software system that is designed to manage various HR-related tasks such as employee information, attendance, leaves, and holidays. The system is intended to be an all-in-one solution that provides a centralized platform for HR management, making it easier for HR personnel, management, and employees to access and manage HR-related information. The project is designed to be scalable and flexible, allowing for future updates and integrations with other systems as needed.

3.2 PRODUCT FUNCTIONS

The HRMS project is designed to perform the following functions:

- User Management: Allows HR personnel to manage user accounts, roles, and permissions.
- Employee Management: Allows HR personnel to manage employee information such as personal details, employment history, and job information.
- Department Management: Allows HR personnel to manage department information such as structure, roles, and responsibilities.
- Holiday Management: Allows HR personnel to manage holidays and vacations for employees.
- Leave Management: Allows employees to request leaves and for HR personnel to manage leave requests and approvals.
- Dashboard: Provides a centralized dashboard for HR personnel to view and manage various HR-related data and tasks.

3.3 USER CHARACTERISTICS

The HRMS project is designed for the following types of users:

- HR Personnel: These are the primary users of the system who will use it to manage various HR-related tasks such as employee information, attendance, leaves, and holidays. They are expected to have a good understanding of HR processes and procedures, and the ability to use software applications effectively.
- Managers: These are the users who will use the system to view employee information and monitor their performance, attendance, and leaves. They are expected to have a good understanding of their team's performance and the ability to use software applications effectively.
- Employees: These are the users who will use the system to request leaves, view their attendance, and access their personal information. They are expected to have a basic understanding of the HR processes and procedures, and the ability to use software applications effectively.

The system is designed to be user-friendly and intuitive, with easy-to-use interfaces and features that can be accessed by users with varying levels of technical knowledge. The system also provides appropriate levels of access and permissions to ensure data security and privacy.

3.4 CONSTRAINTS

The user data must be stored in our database which we will be able to do analysis.

3.5 ASSUMPTIONS AND DEPENDENCIES

HRMS project may have the following assumptions and dependencies:

- The project assumes that the HR personnel and employees have access to the necessary hardware and software infrastructure to use the system effectively.

- The project assumes that the HR personnel and employees have the necessary skills and knowledge to use the system effectively, or that appropriate training will be provided.
- The project may depend on third-party libraries, frameworks, and technologies, such as Angular, NestJS, and MySQL, which may impact the system's functionality, performance, and maintenance.
- The project may also depend on external services and systems, such as email and calendar services, which may impact the system's functionality and reliability.
- The project may assume that the HR processes and procedures are well-defined and documented, and can be mapped to the system's functionality effectively.
- The project team will need to identify and manage these assumptions and dependencies effectively to ensure the successful development and implementation of the HRMS system.

4. Specific Requirement

4.1 Functionality

4.2 Usability

4.3 Reliability

4.4 Supportability

Chapter 4: Specific Requirements

4.1 FUNCTIONALITY

The HRMS system provides a range of functionality related to human resources management, including:

- User Management: The system allows HR personnel to manage user accounts and access levels, assign roles and permissions, and maintain user profiles.
- Employee Management: The system provides HR personnel with tools to manage employee records, such as personal details, employment history, performance reviews, and salary information.
- Department Management: The system enables HR personnel to manage department structures, assign employees to departments, and track departmental performance and metrics.
- Holiday Management: The system provides HR personnel with tools to manage employee holiday requests, approve or reject requests, and track employee holiday entitlements.
- Leave Management: The system allows HR personnel to manage employee leave requests, such as sick leave, parental leave, and other types of leave. The system can also track employee leave entitlements and balances.

Overall, the HRMS system aims to automate and streamline human resources management processes, improve data accuracy and accessibility, and enhance HR personnel's efficiency and productivity.

4.2 USABILITY

The HRMS system is designed to be user-friendly and intuitive, with a simple and consistent user interface that is easy to navigate. The system provides contextual help and guidance to users, and allows for customization and personalization to suit individual user preferences. The system is also optimized for performance and scalability, ensuring that it can handle large volumes of data and users without compromising usability.

4.3 RELIABILITY

The HRMS system aims to be highly reliable, ensuring that it can operate continuously and without interruption. The system is designed with redundancy and failover mechanisms to minimize the impact of hardware or software failures. The system also includes robust backup and recovery procedures to protect against data loss or corruption. Additionally, the system is regularly tested and validated to ensure that it meets high standards of reliability and can handle expected load and usage.

4.3.1Availability

The model is available 24*7.

4.3.2Accuracy

Accuracy: The HRMS system aims to be highly accurate, ensuring that the data it stores and processes is reliable, consistent, and up-to-date. The system includes validation and verification mechanisms to ensure data accuracy, and provides tools for users to correct errors or inconsistencies.

4.3.3Access Reliability

The model will provide 100% access reliability.

4.4 PERFORMANCE

4.4.1 Responsiveness

The HRMS system aims to provide fast and responsive user interface, with minimal latency and delay. The system is optimized for efficient data retrieval and processing, and includes caching mechanisms to speed up common operations.

4.4.2 Scalability

The HRMS system aims to be highly scalable, able to handle growing volumes of data and users without performance degradation or loss of functionality. The system includes load balancing mechanisms, distributed architecture, and other techniques to ensure scalability.

4.4.3 Scalability

The HRMS system aims to be efficient in its use of system resources, such as memory, CPU, and storage. The system includes optimization techniques such as compression, indexing, and data partitioning to minimize resource usage and improve performance.

4.4.4 Monitoring

The HRMS system includes monitoring and reporting tools to help administrators and users track system performance, identify bottlenecks and inefficiencies, and optimize system usage.

5. System Requirement

5.1 Functional Requirements

5.2 Non-Functional Requirements

5.3 Hardware and Software Requirements

Chapter 5: System Requirements

5.1.1 FUNCTIONAL REQUIREMENTS

Functional requirements of the HRMS system include:

- User Management: The system should allow administrators to create and manage user accounts, set user roles and permissions, and track user activity.
- Employee Management: The system should allow administrators to create and manage employee records, including personal information, employment history, job details, and performance evaluations.
- Department Management: The system should allow administrators to create and manage departments, assign employees to departments, and track departmental information such as budgets and expenses.
- Leave Management: The system should allow employees to request leave, managers to approve or deny leave requests, and administrators to track leave balances and history.
- Holiday Management: The system should allow administrators to create and manage holiday calendars, and allow employees to view and request holiday time off.

5.1.2 NON-FUNCTIONAL REQUIREMENT

Non-Functional requirements of the HRMS system include:

- Usability: The system should have an intuitive user interface, be easy to navigate, and require minimal training for users to understand and operate.
- Reliability: The system should be reliable and available 24/7, with minimal downtime or disruptions.
- Performance: The system should be fast and responsive, with quick load times and minimal delays in processing user requests.
- Scalability: The system should be able to scale up or down to accommodate changes in user demand, without affecting performance or reliability.

- Security: The system should be secure, with appropriate measures in place to protect against unauthorized access, data breaches, and other security threats.
- Compatibility: The system should be compatible with a range of operating systems, browsers, and devices, to ensure accessibility for all users.
- Maintainability: The system should be easy to maintain and update, with clear documentation and support for ongoing maintenance and troubleshooting.
- Integration: The system should be easily integrable with other HR and business systems, allowing for seamless data transfer and communication between different systems.

5.1.3 HARDWARE AND SOFTWARE REQUIREMENT

Hardware and Software Requirements are used to describe the minimum hardware and software requirements to run the Software. These requirements are described below.

5.1.4 HARDWARE REQUIREMENT

Server: Minimum 4 GB RAM, 2 GHz processor, 50 GB hard disk space

Client: Any device with a modern web browser and internet connectivity

5.1.5 SOFTWARE REQUIREMENT

Operating System: Linux, Windows

Web Server: Nginx, Apache

Database Server: MySQL, PostgreSQL, MongoDB

Backend Framework: NestJS

Frontend Framework: Angular

Other dependencies and libraries as required

6. Feasibility Study

6.1 Operational Feasibility

6.2Technical Feasibility

6.3 Economic Feasibility

Chapter 6: Feasibility Study

The terrible 1st introduction of any system development life cycle is preliminary investigation. The practicableness study may be a major part of this section. In life however helpful or sensible the data is, the main aim of the event of any data system tothe organization is the practicableness study of the data system. The practicableness of the event software package is often studied in terms of the subsequent aspects: one, Operational practicable-ness two, Technical practicable-ness and three, Economicpracticable-ness.

6.1 OPERATIONAL FEASIBILY

This involves assessing whether the proposed HRMS system can be integrated into the existing organizational structure and business processes. This may include evaluating the impact on existing workflows, training requirements for users, and other operational considerations.

6.2 TECHNICAL FEASIBILITY

This involves assessing whether the proposed HRMS system can be built using the chosen hardware and software technologies. This may include evaluating whether the system can handle the expected user traffic, integrate with other HR and business systems, and meet other technical requirements.

6.3 ECONOMICAL FEASIBILITY

This involves assessing the costs and benefits of developing and implementing the HRMS system. This may include evaluating the costs of hardware, software, development, implementation, and ongoing maintenance, as well as the expected benefits in terms of increased productivity, improved data accuracy, and other factors.

7. Project Planning

7.1 Project Development Approach

7.2 Project Planning

7.3 Timeline Chart

Chapter 7 Project Planning

7.1 PROJECT DEVELOPMENT APPROACH

Our system uses an Incremental model for software development. Following figure shows the figure of our system's process model:

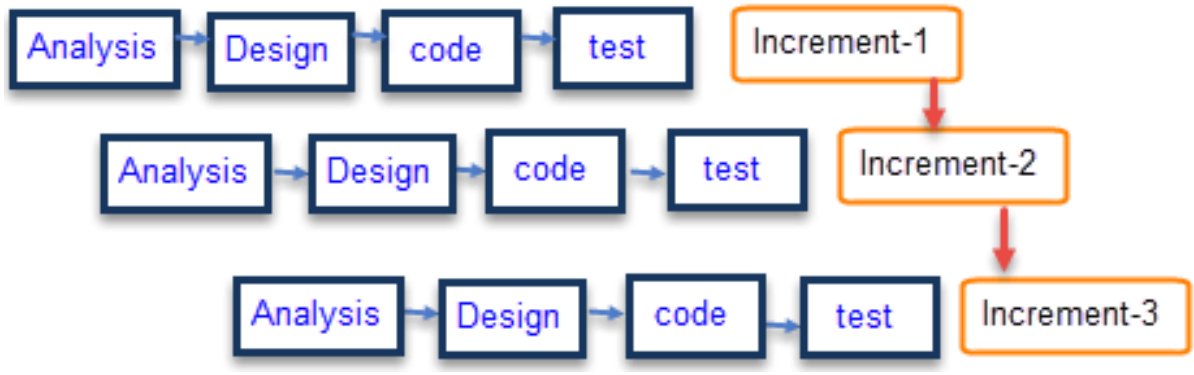

Fig 7.1 Project Development Approach

The process that deals with technical and management issues of software development is called software process.

In a Project model the first phase is requirement gathering. In this phase you gathering all the related requirements of system what you are going to developed.

Second phase is System analysis. The system analysis is "What is done, and How it is done" This is the most important and critical state of project or system. In this phase the basic requirements of the software must be understood by an Analyst.

- All the requirements are then well documented and discussed further with the client or end-user, for reviewing.
- After the analysis of the system, you will get the actual or real time problem of the system.

Third phase is system design. This phase is between the analysis and implementation stages. In design phase you will design the project. It has some attributes such as:

- Data Structure
- Software architecture
- Interface representation

- Algorithm details
- The all requirements are translated in some easy to represents from using whichcoding can be done effecting and efficiently. The design needs to be documented for further use.

Forth phase is implementation. It is a step in which design is translated into machinereadable form. If design is done in sufficient detail, then coding can be done effectively. Programs are created in this phase. The coding is done with the help ofsome programming language. In our system we are using Python as implementationlanguage.

Fifth phase is testing. It begins when coding is done. While performing testing the major focus is on logical internals of the software. It also ensures execution of all the paths, functional behaviors. If any error in your system occurs, it will detect thaterror and the fix the error and meet the customer requirements. There are many criteria for testing, like white box testing, black box testing, etc.

Sixth and the last phase is maintenance. This is a huge phase of this model. It maintains the system after deploying it on the particular space like any computer system.

7.2 PROJECT PLANNING

A project plan defines project goals and objectives, specifies tasks and how goals will be achieved, identifies what resources will be needed and associated budgets and timelines for completion. A project plan defines all work in a project and identifies who will do it. The organizational structure has a major influence on the execution of the project. The organizational structure decides the resources, communication methods and other aspects of project management. A typical project plan consists of a timeline chart.

7.3 TIMELINE CHART

Module↓	Month→	January		
		2nd week	3rd week	4th week
Analysis & Required Gathering				
Design				
implemantation				
tesing				
documantation				
Final presentation				

Module↓	Month→	February			
		1st week	2nd week	3rd week	4th week
Analysis & Required Gathering					
Design					
implemantation					
tesing					
documantation					
Final presentation					

Module↓	Month→	March			
		1st week	2nd week	3rd week	4th week
Analysis & Required Gathering					
Design					
implemantation					
tesing					
documantation					
Final presentation					

Fig.7.2 TimeLine Chart

8. System Design

8.1 Use-Case Diagram

8.2 Activity Diagram

8.3 ER Diagram

8.4 Data Dictionary

Chapter 8: System Design

System Design is a process of planning a new business system or replacing an existingsystem by defining its components or modules to satisfy the specific requirements. It isthe phase that bridges the gap between the problem domain and the existing system ina manageable way. In this phase, the complex activity of system development is divided into several smaller sub-activities, which coordinate with each other to achieve the main objective of system development.

The purpose of the System Design process is to provide sufficient detailed data and information about the system and its system elements to enable the implementation consistent with architectural entities as defined in models and views of the system architecture. It basically provides the developing team with a graphical view of the application, which in turn, is easier to understand.

8.1 USE-CASE DIAGRAM

As shown below, a use-case diagram graphically describes the functions or interactions that a user can perform while remaining inside the system boundary. This eases the task of a new user that tries to operate the system.

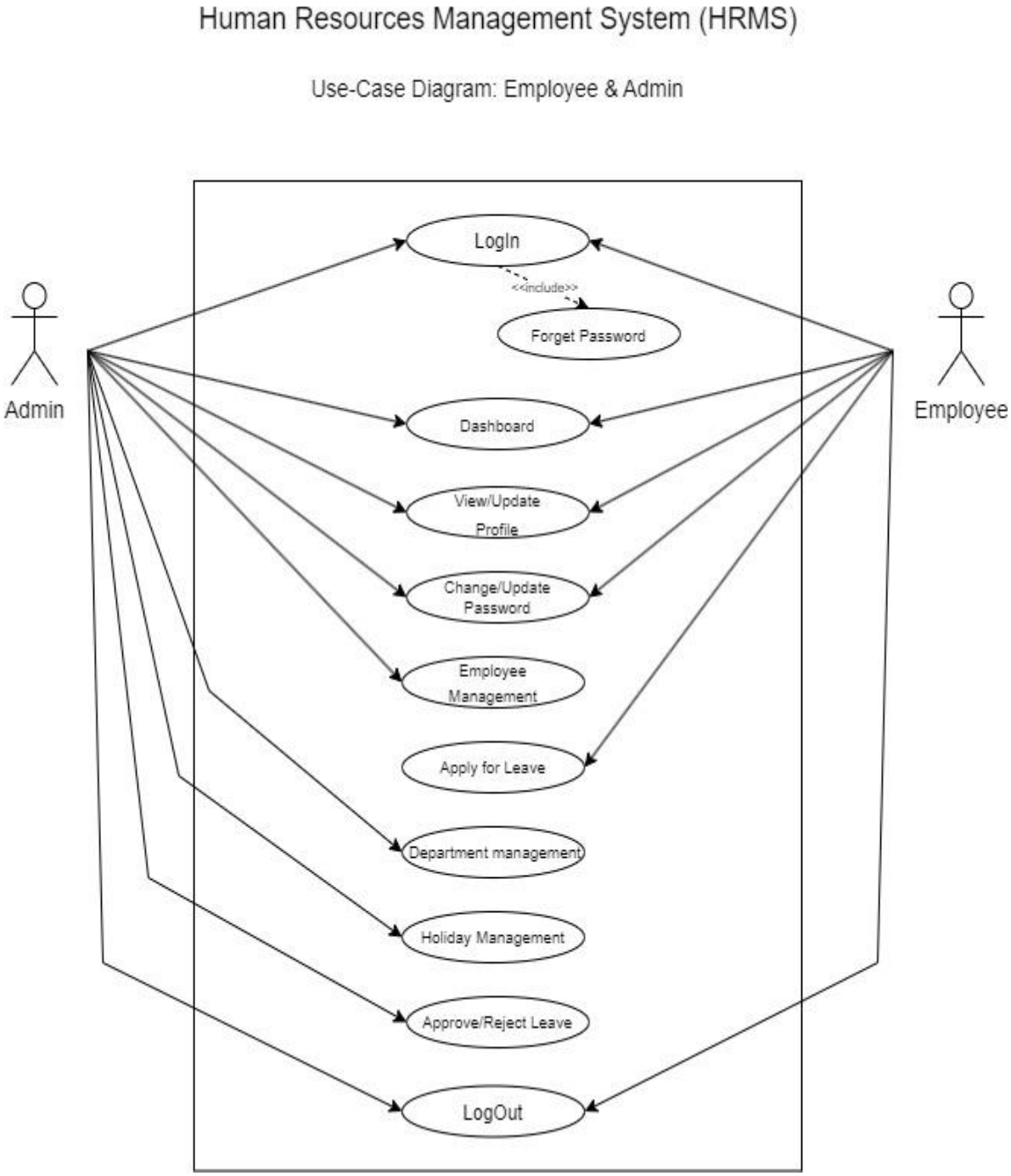

Fig.8.1.1 Use case Diagram: Employee & Admin

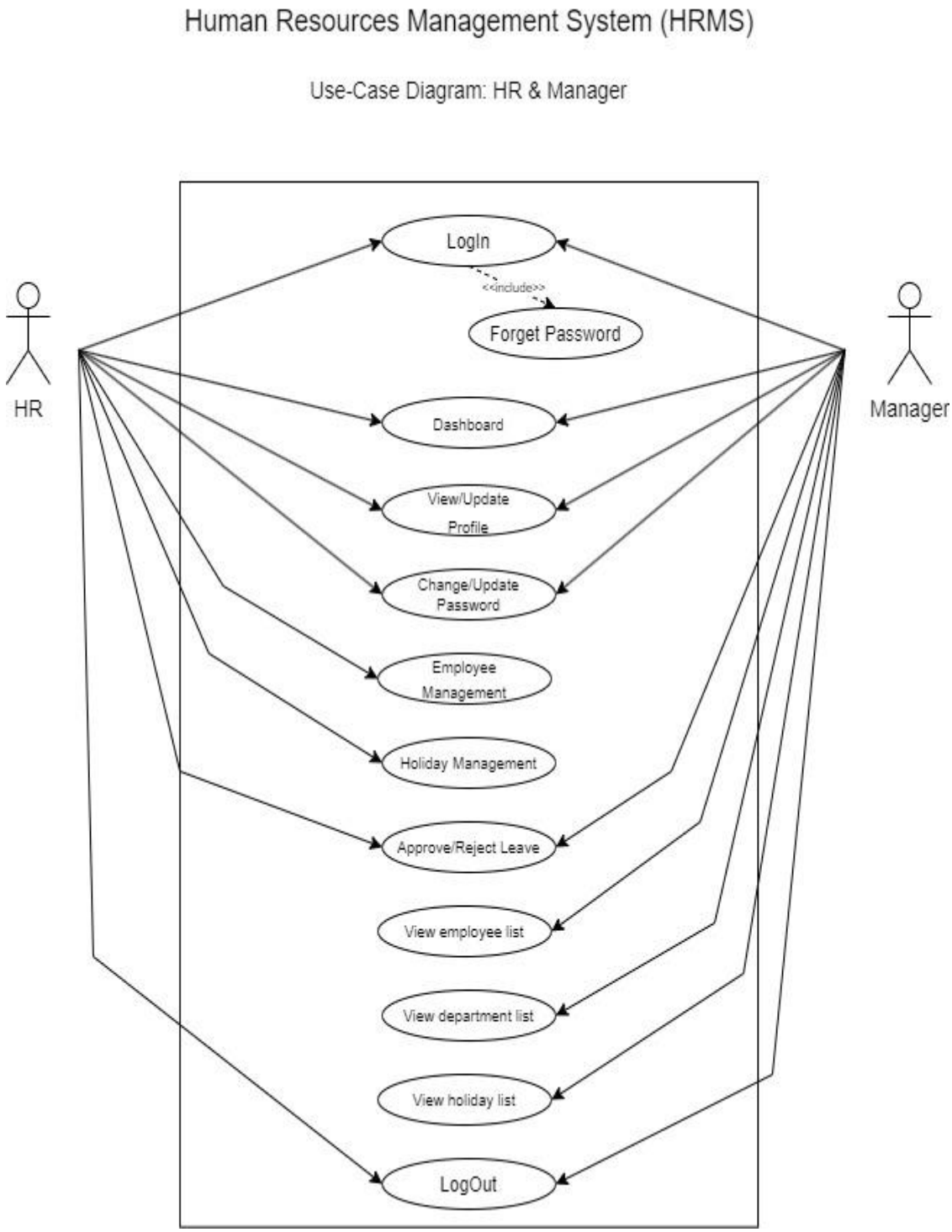

Fig.8.1.2 Use case Diagram: HR & Manager

8.2 ACTIVITY DIAGRAM

Activity diagram is essentially an advanced version of flowchart that models the flow from one activity to another activity. Activity is a particular operation of the system. Activity diagrams are not only used for visualizing the dynamic nature of a system, but they are also used to construct the executable system by using forward and reverse engineering techniques

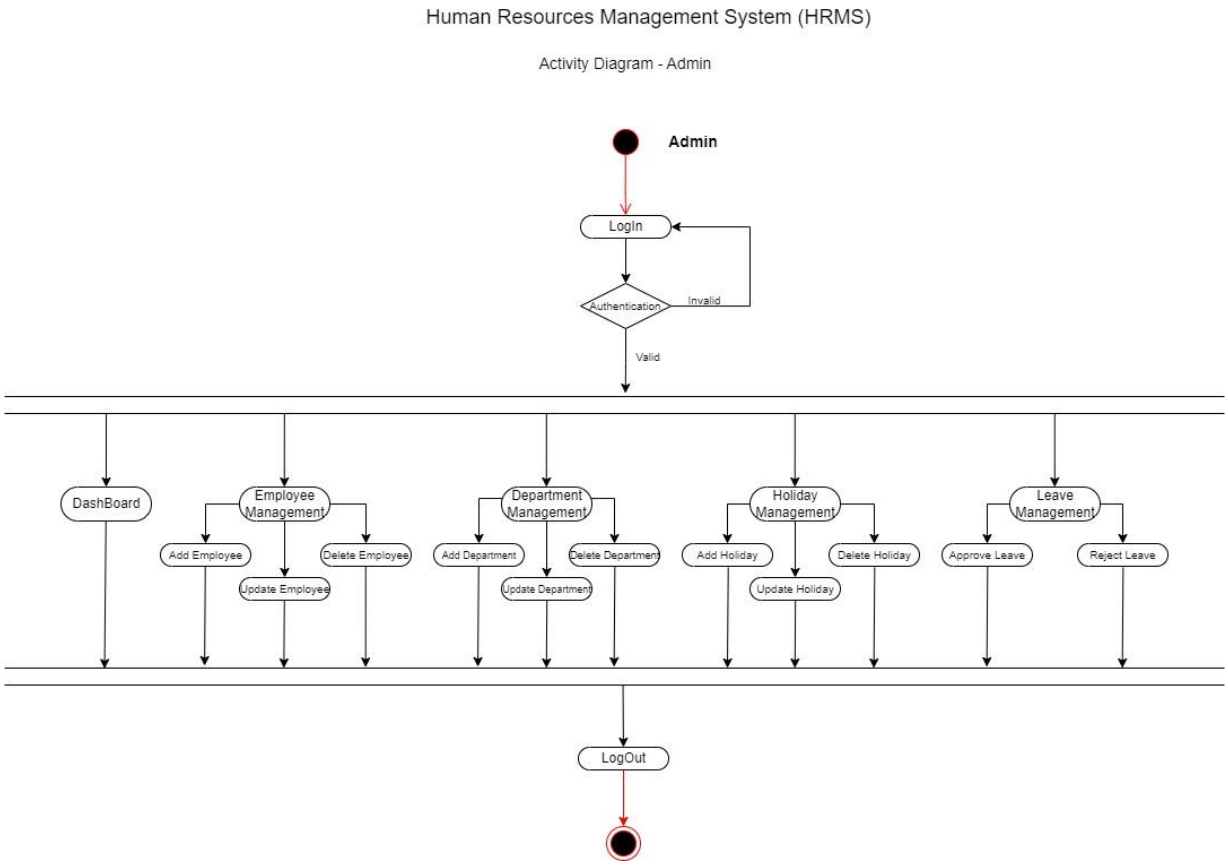

Fig.8.2.1 Admin Activity Diagram: Admin

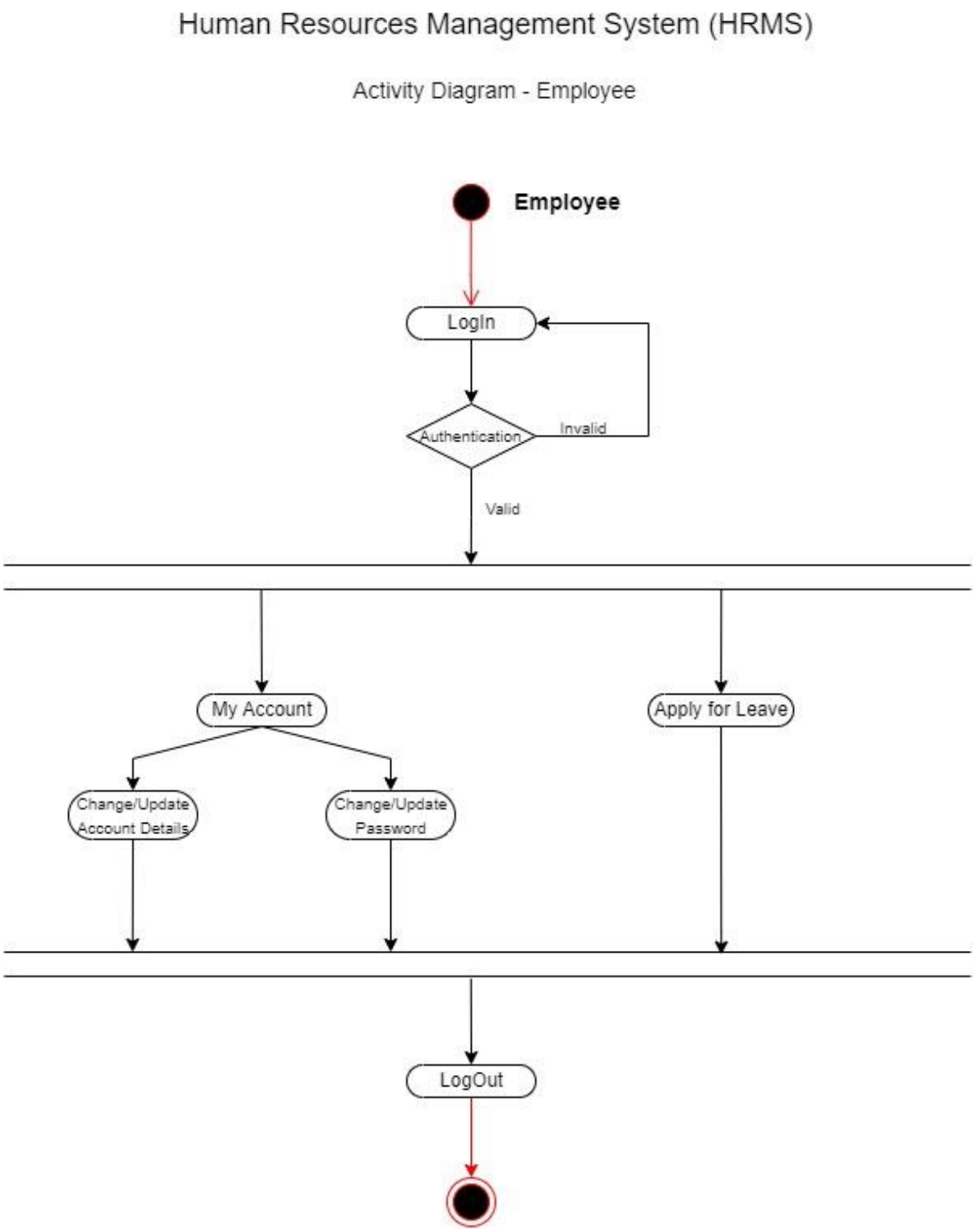

Fig.8.2.2 Activity Diagram: Employee

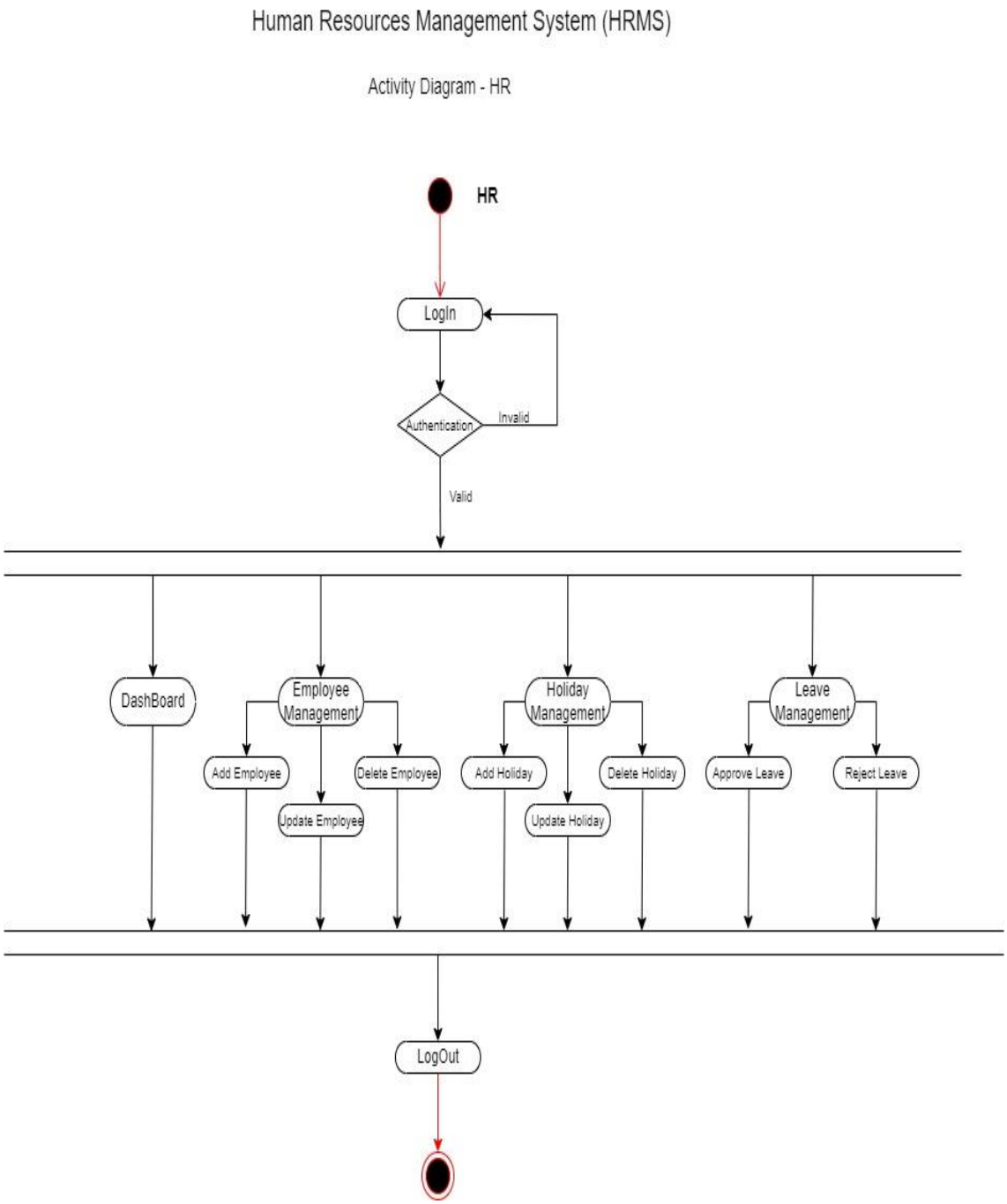

Fig.8.2.3 Activity Diagram: HR

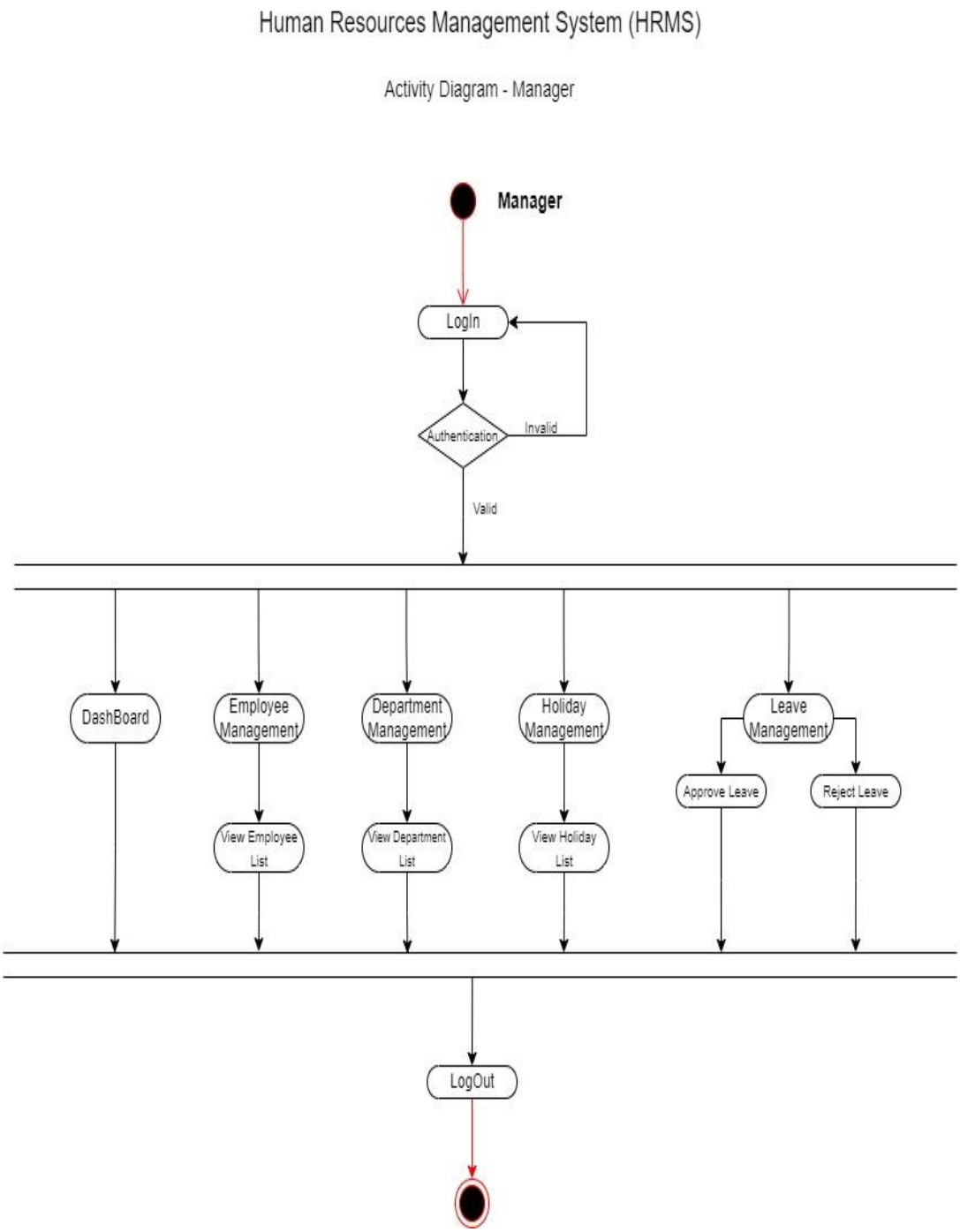

Fig.8.2.4 Activity Diagram: Manager

8.3 Flowchart

A flowchart is a graphical representation of a process or algorithm that uses different shapes, symbols, and arrows to illustrate the flow of steps involved in the process. Flowcharts are commonly used in software development, engineering, and business analysis to visually represent complex processes, workflows, and decision-making steps.

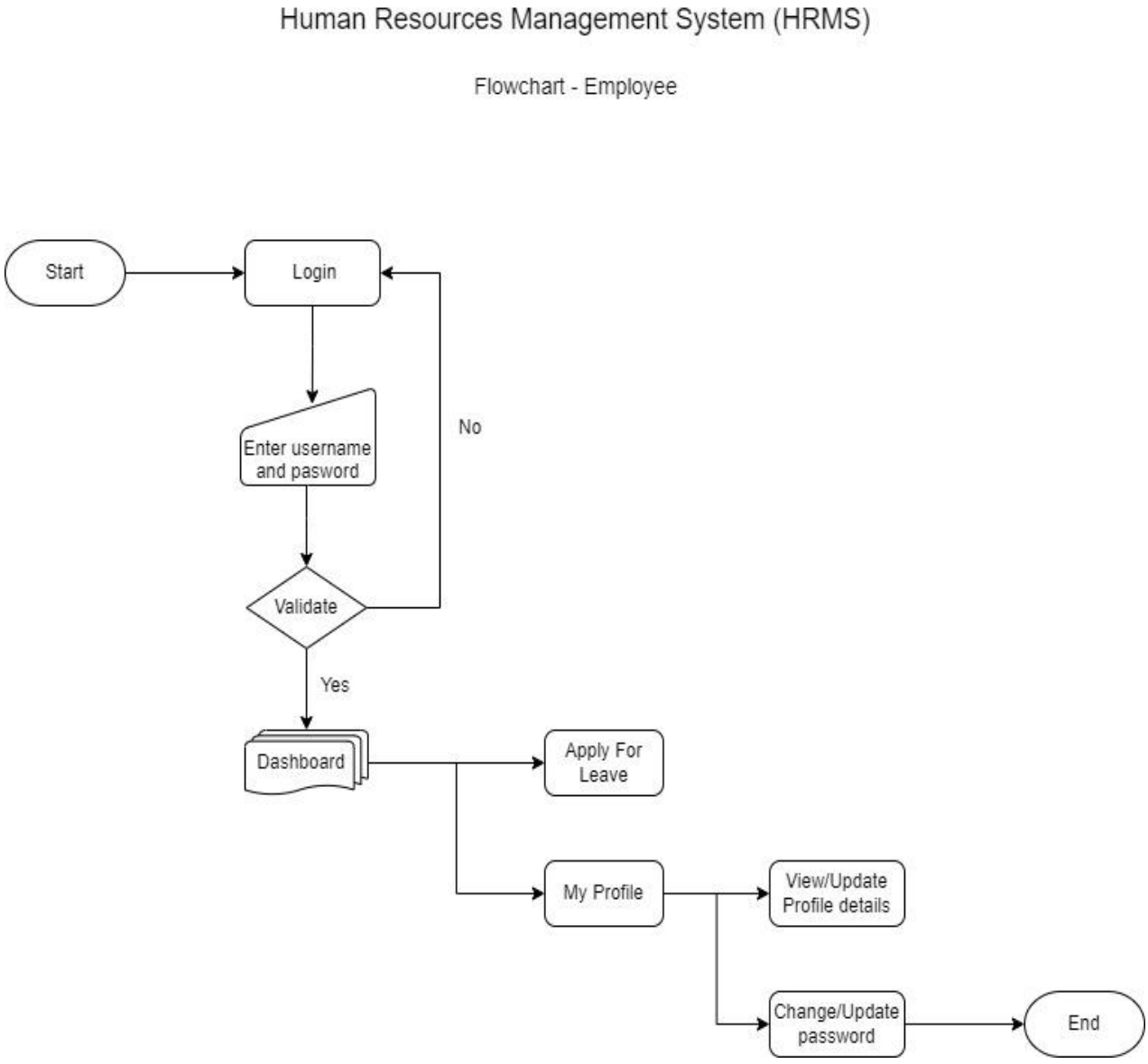

Fig.8.3.1 Flowchart: Employee

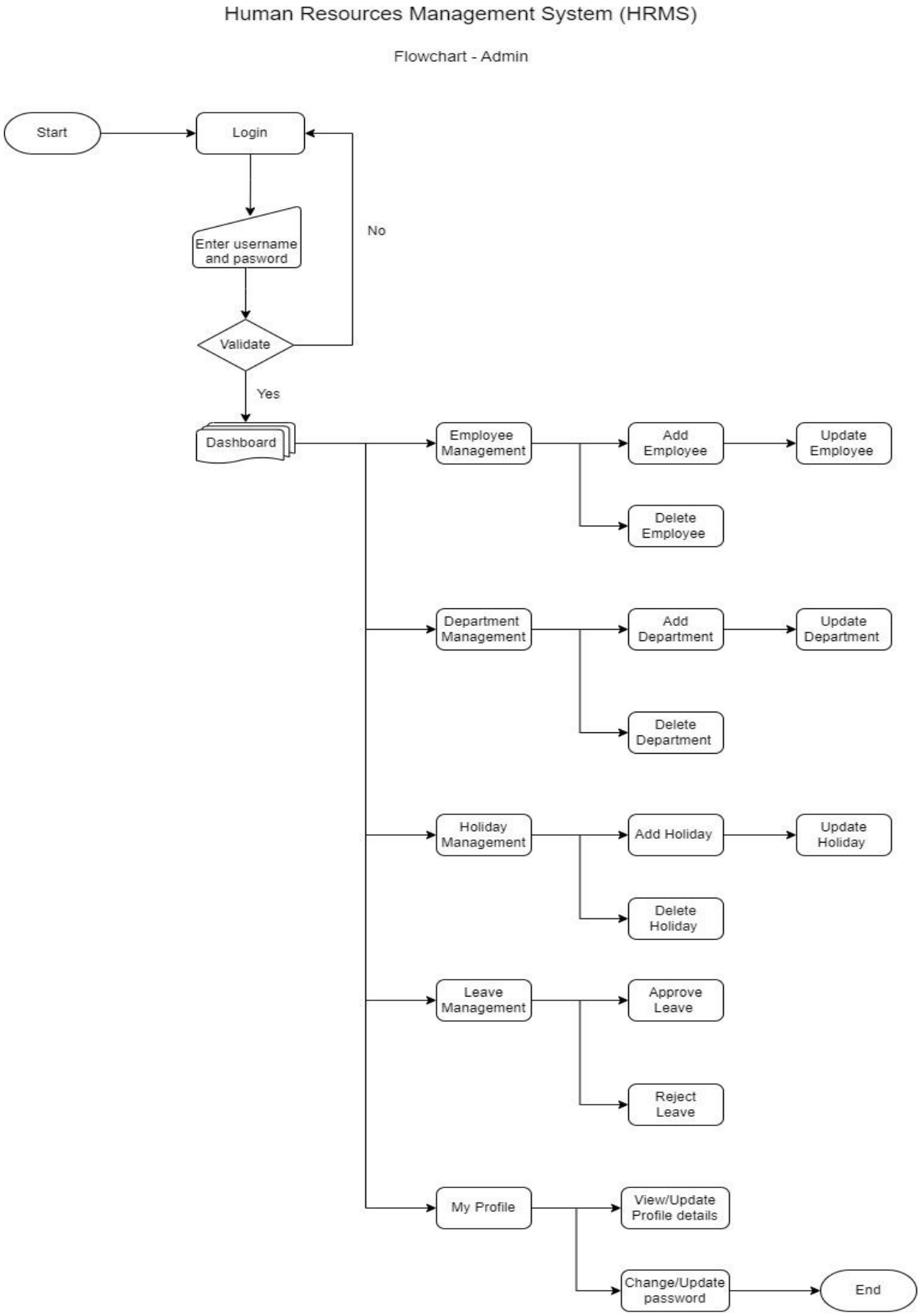

Fig.8.3.2 Flowchart: Admin

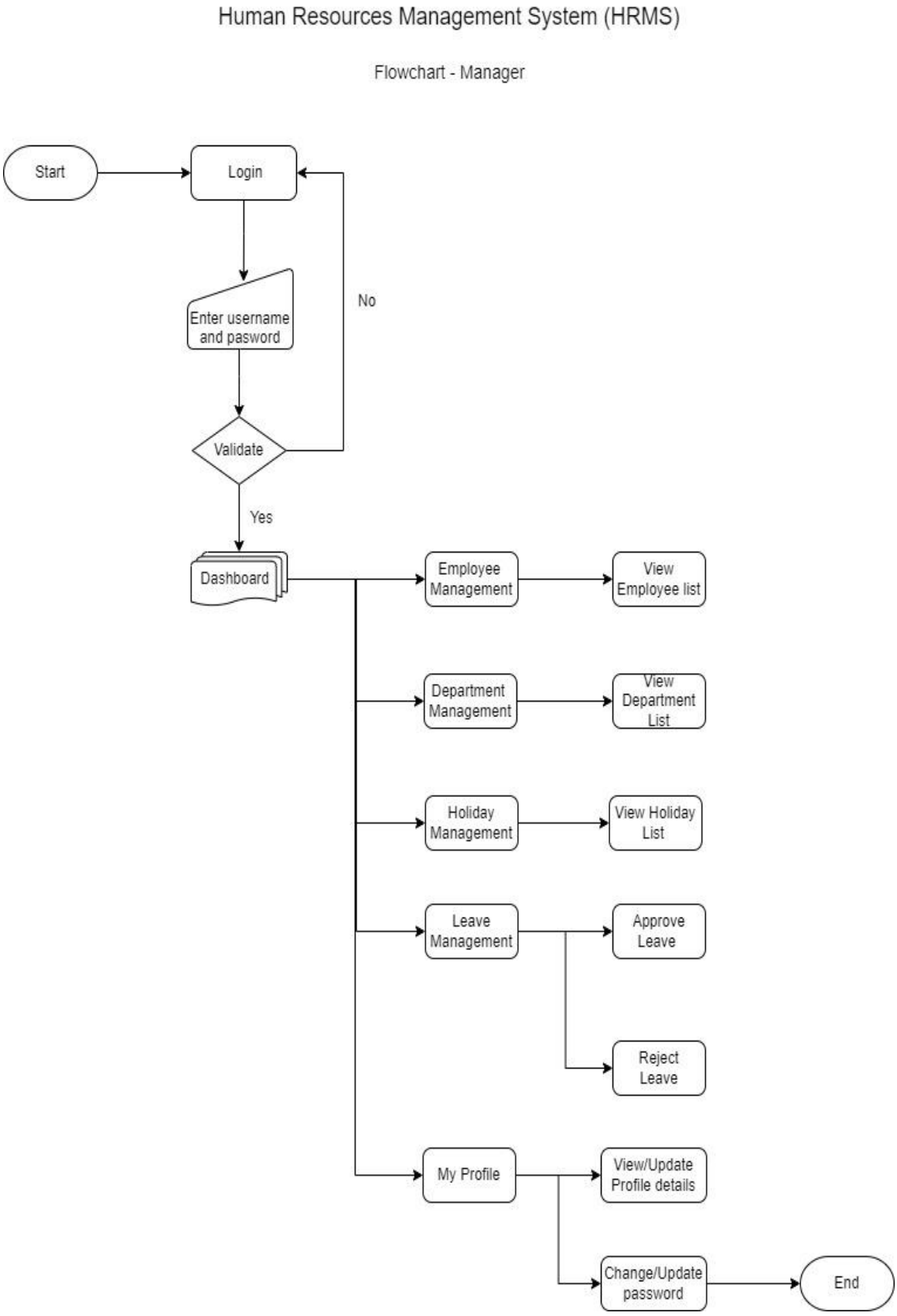

Fig.8.3.3 Flowchart: Manager

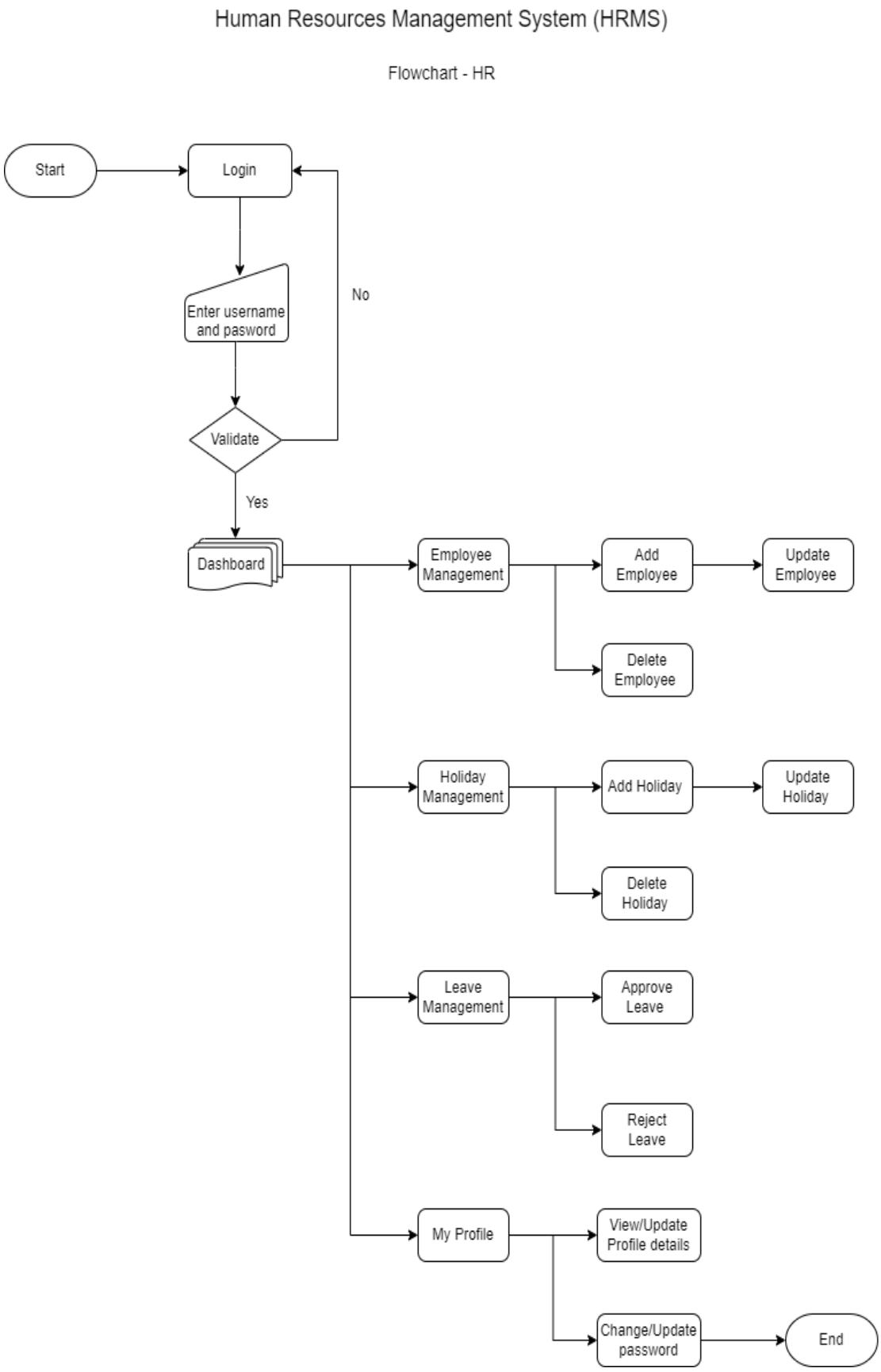

Fig.8.3.4 Flowchart: HR

8.4 ER DIAGRAM

An ER diagram is a graphical representation of entities and their relationships to each other in a database. It helps to visualize the relationships between different entities and how they interact with each other. The ER diagram consists of three basic components: entities, attributes, and relationships.

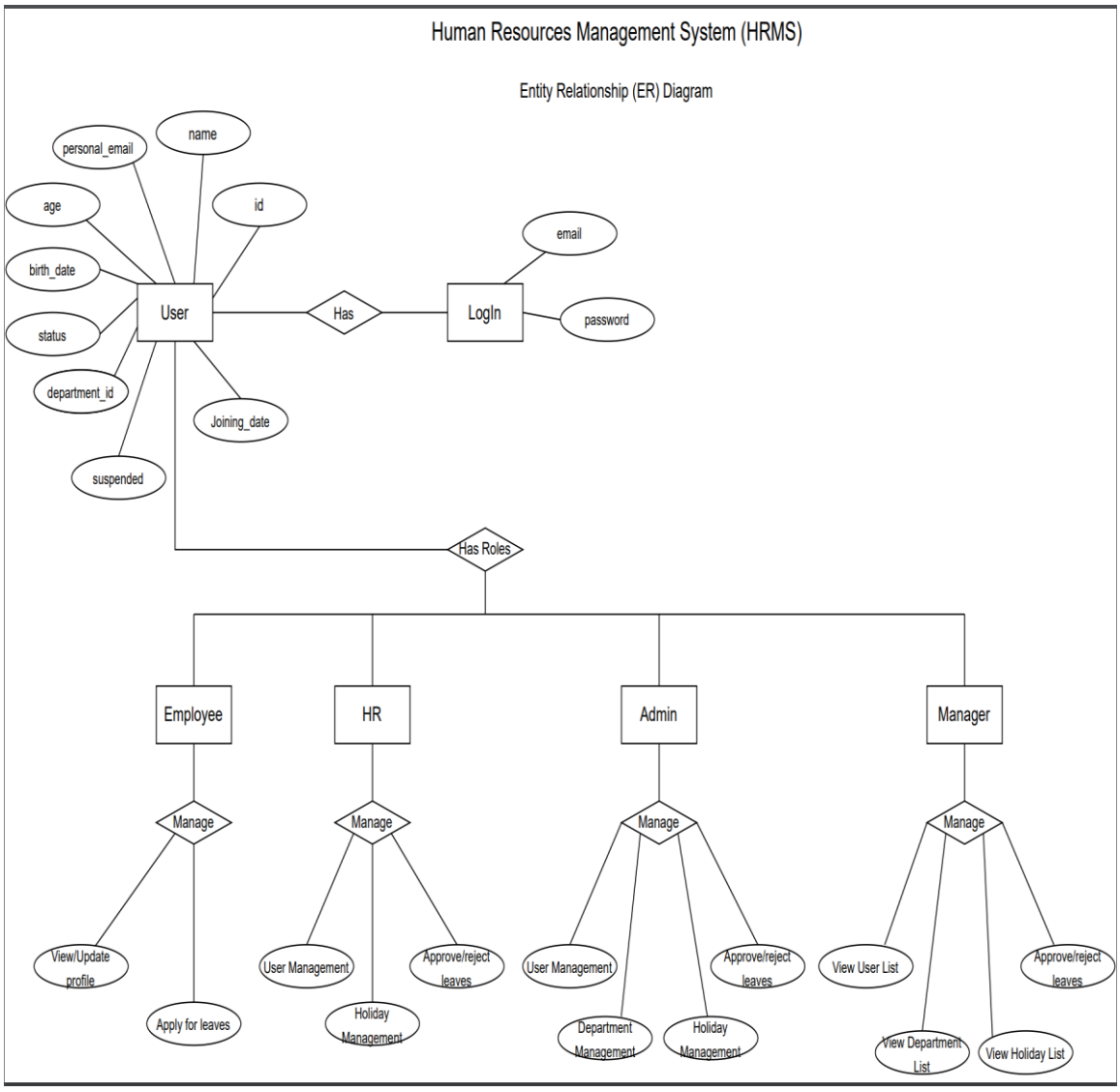

Fig.8.4 ER Diagram

8.5 DATA DICTIONARY

Table:1 Users

Field name	Datatype	Size	Constrain
id	int	10	Primarykey
name	Varchar	50	Not null
email	Varchar	40	Not null
password	Varchar	40	Not null
age	Varchar	40	Not null
role	enum	-	Not null
ProfileImage	Varchar	100	Not null

Table:2 Department

Field name	Datatype	Size	Constrain
id	int	10	Primarykey
department	Varchar	50	Not null

Table:3 Employee

Field name	Datatype	Size	Constrain
id	int	10	Primarykey
name	Varchar	50	Not null
personal_email	Varchar	50	Not null
age	int	10	Not null
birth_date	datetime	-	Not null
Joining_date	datetime	-	Not null
depaetment_id	int	10	foreignKey
Status	Boolean	-	Not null
Suspended	Boolean	-	Not null
user_id	int	10	foreignKey

Table:4 Holiday

Field name	Data type	Size	Constrain
id	int	10	Primarykey
title	Varchar	20	Not null
isOptional	Boolean	-	Not null
status	Boolean	-	Not null
date	datetime	-	Not null

Table:5 Leave

Field name	Data type	Size	Constrain
id	int	10	Primarykey
subject	Varchar	50	Not null
employee_id	int	10	foreignKey
description	Varchar	70	Not null
start_date	datetime	-	Not null
end_date	datetime	-	Not null
reason	Varchar	100	Not null
assigned_to	Varchar	20	Not null
HR_status	Boolean	-	Not null
action_taken_on	Boolean		Not null

Table:6 Otp

Field name	Data type	Size	Constrain
id	int	10	Primarykey
email	Varchar	50	Not null
otp	Varchar	10	Not null

9. Detailed Description

9.1 Detailed Description and actual Screenshot

CHAPTER 9: DETAILED DESCRIPTION

9.1 DESCRIPTION WITH ACTUAL SCREENSHOTS

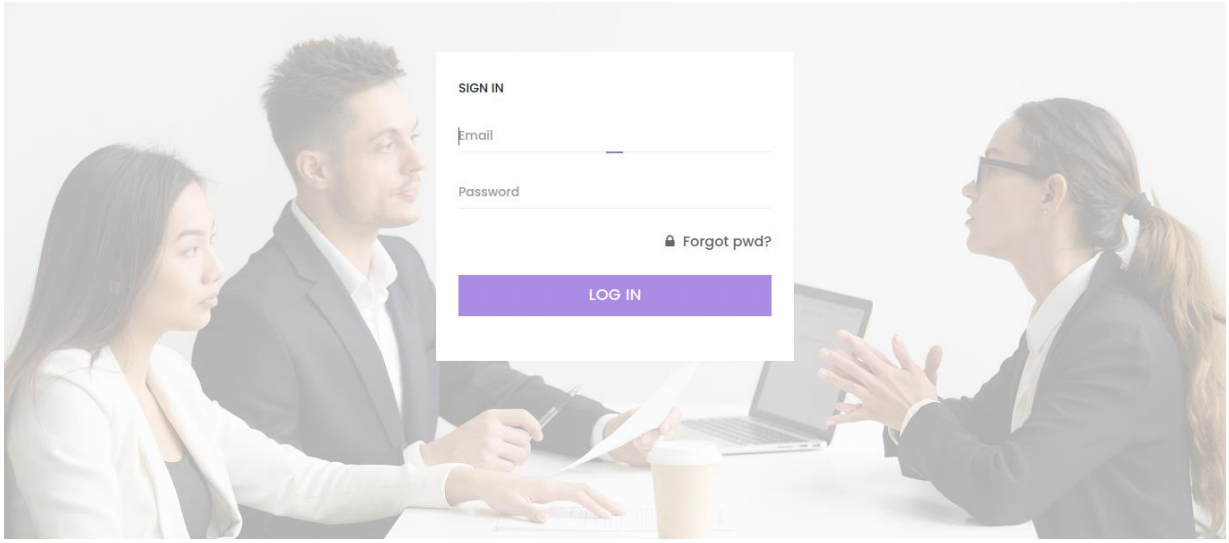

Fig 9.1 Login Page

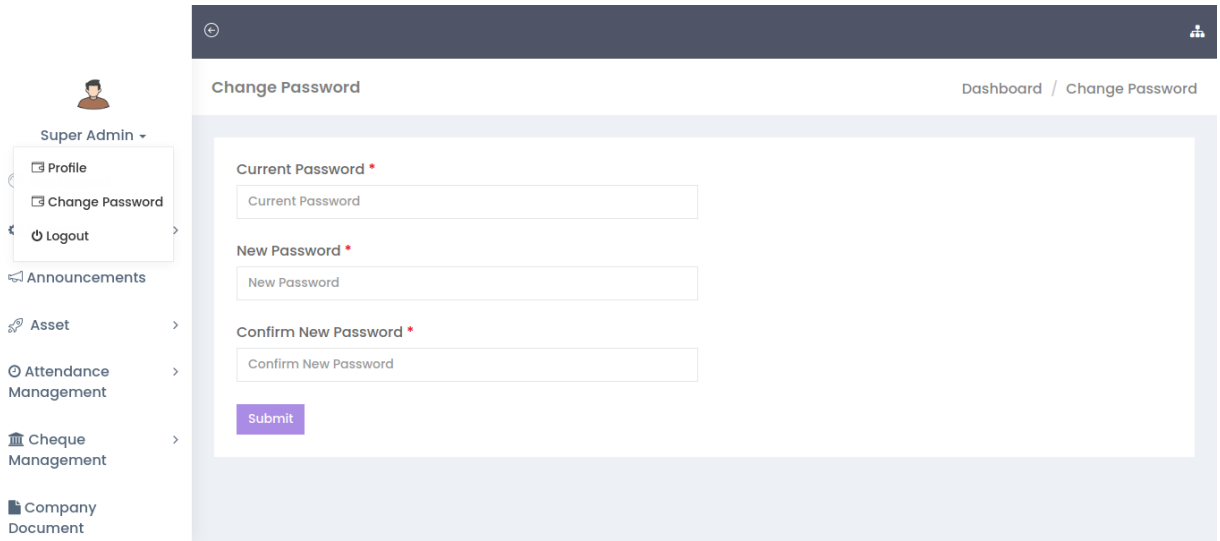

Fig 9.2 Change Password

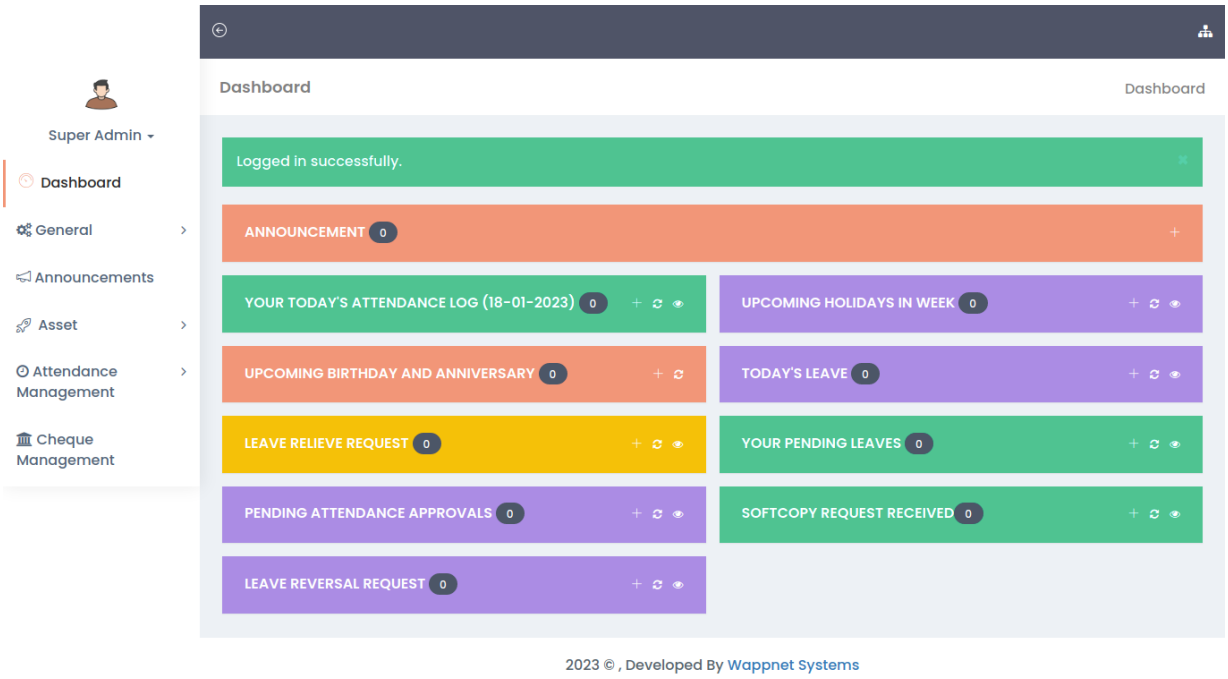

Fig 9.3 Dashboard

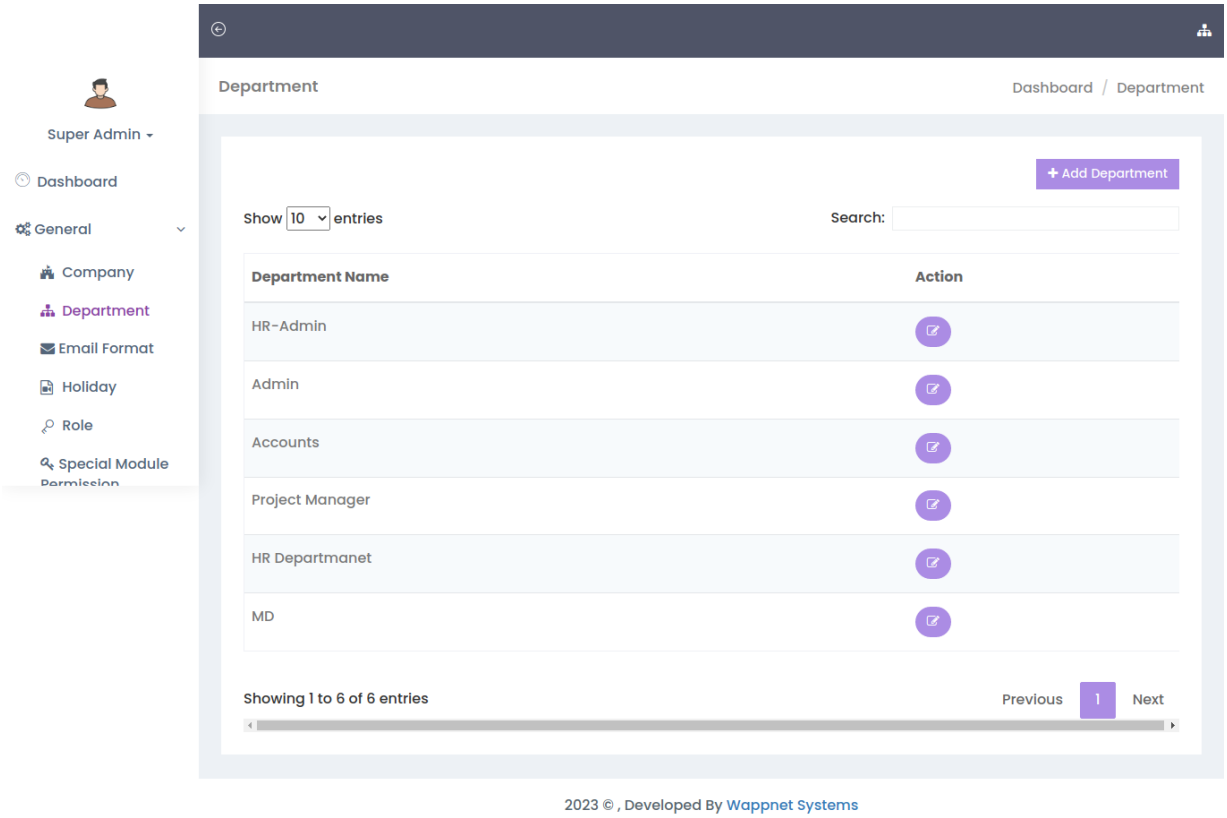

Fig 9.4 Add Department

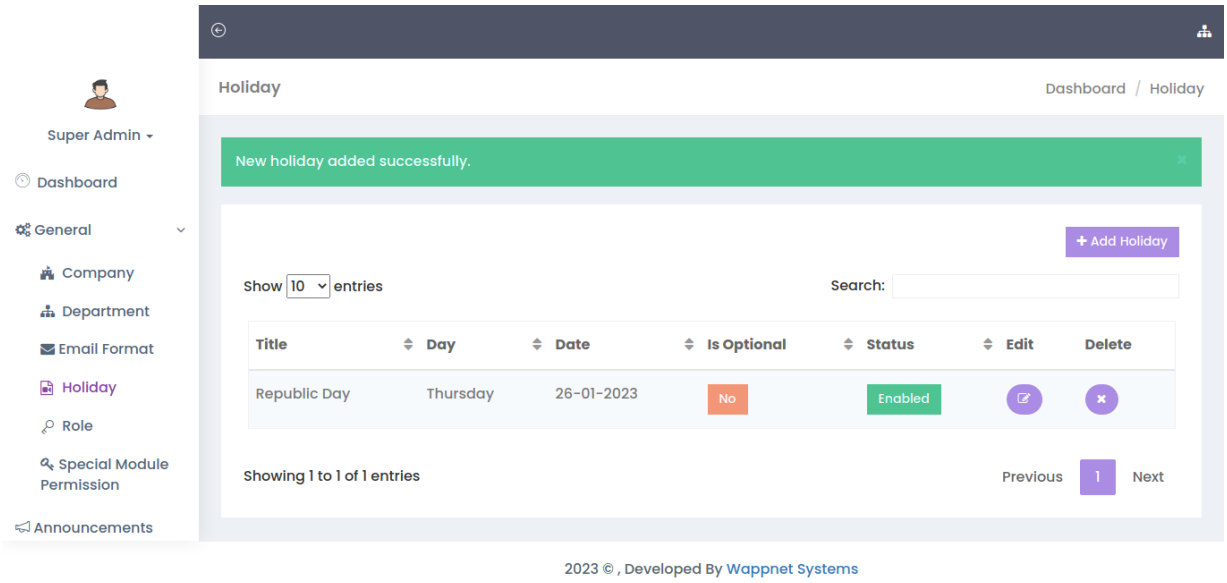

Fig. 9.5 Add Holiday

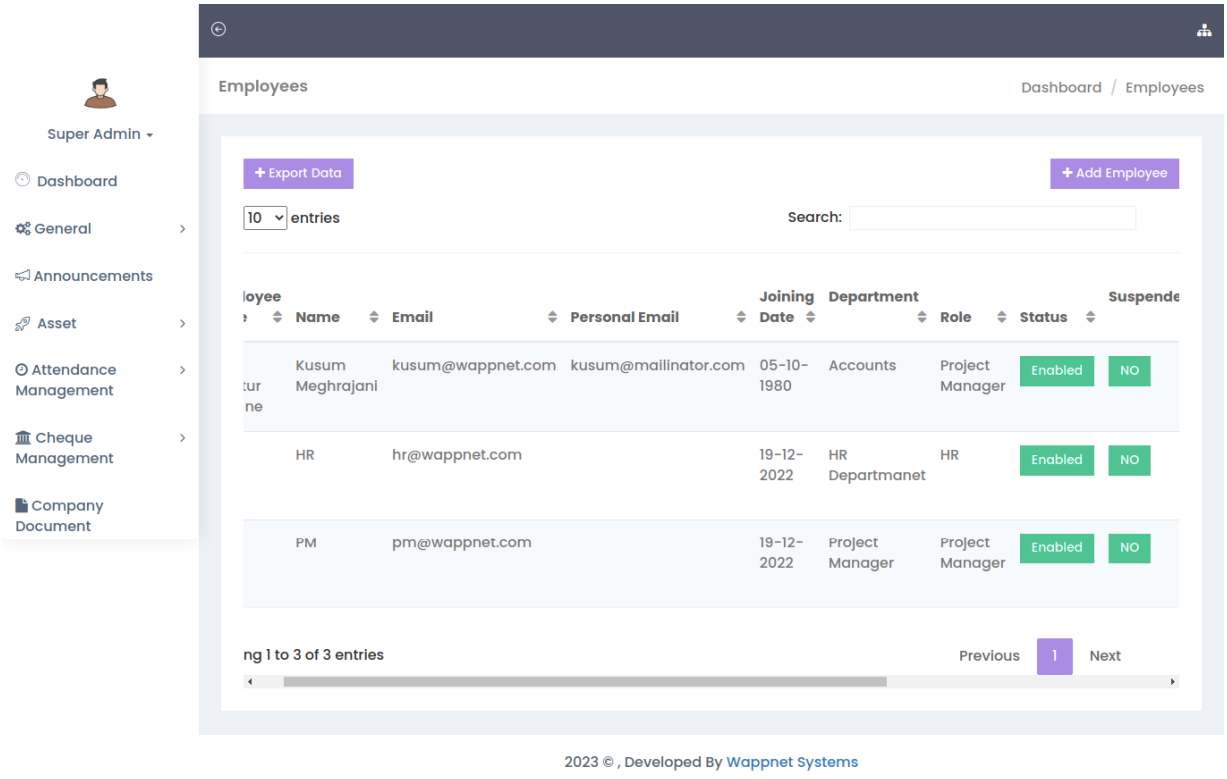

Fig 9.6 Add Employee

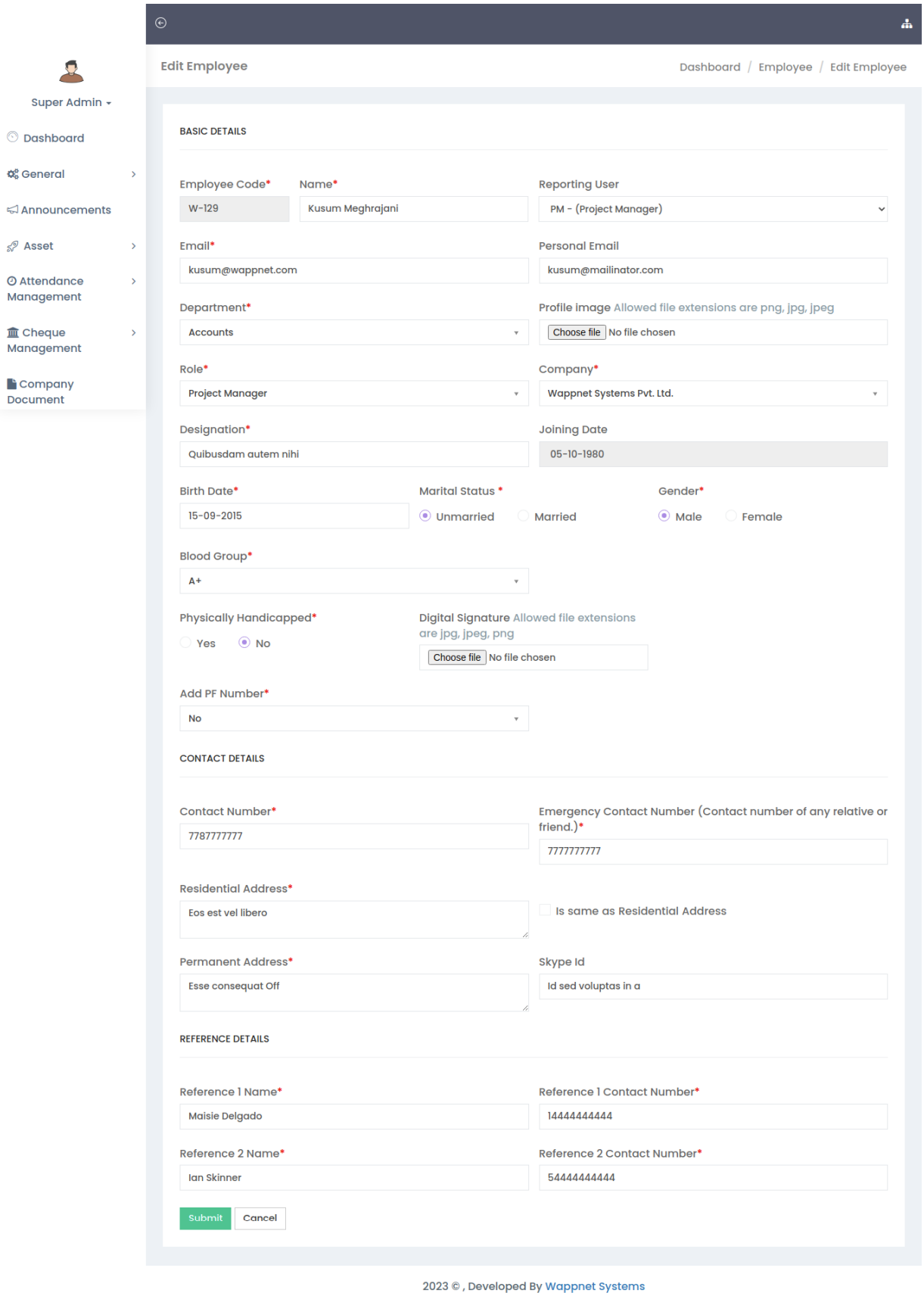

Fig 9.7 Edit Employee

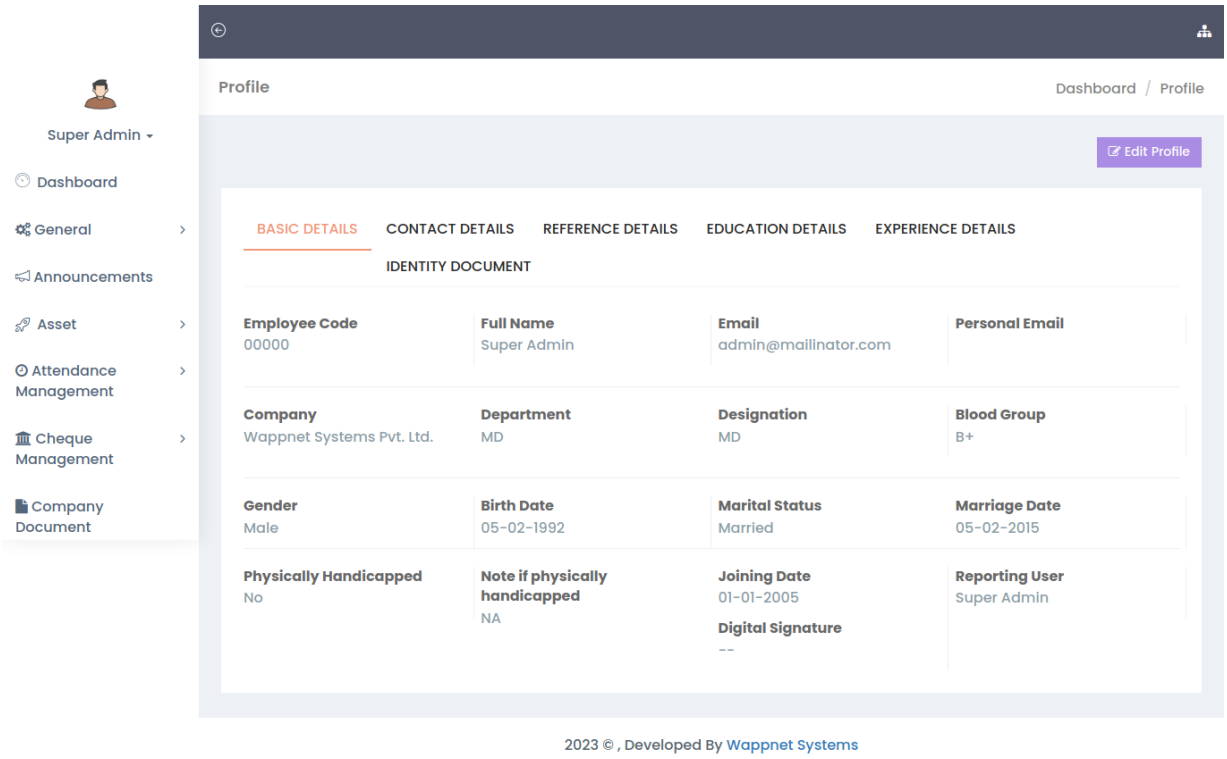

Fig 9.8 My Profile

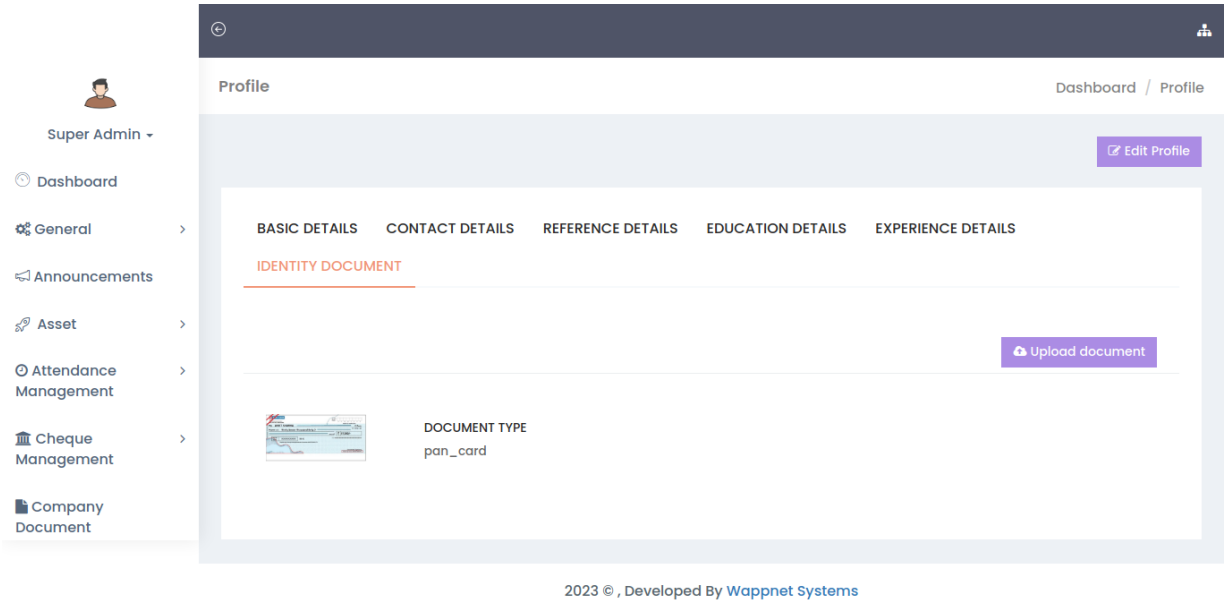

Fig 9.9 Upload Image

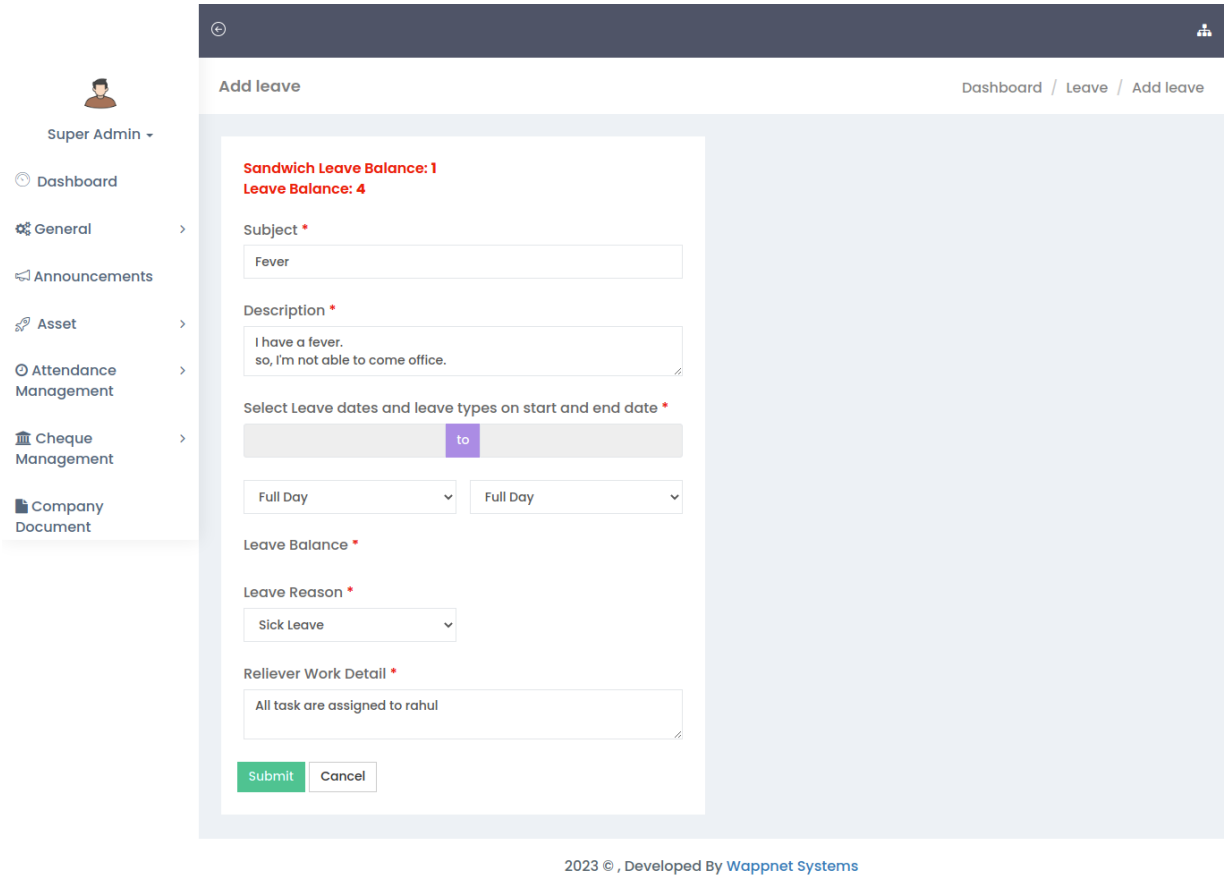

Fig 9.10 Add Leave

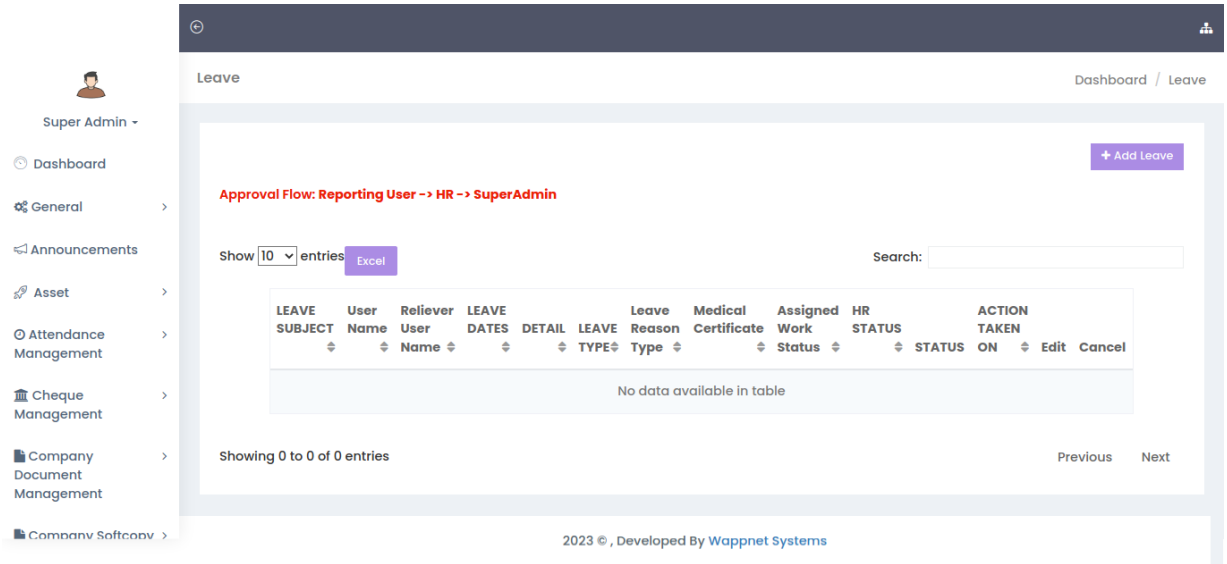

Fig 9.11 Leave Approval

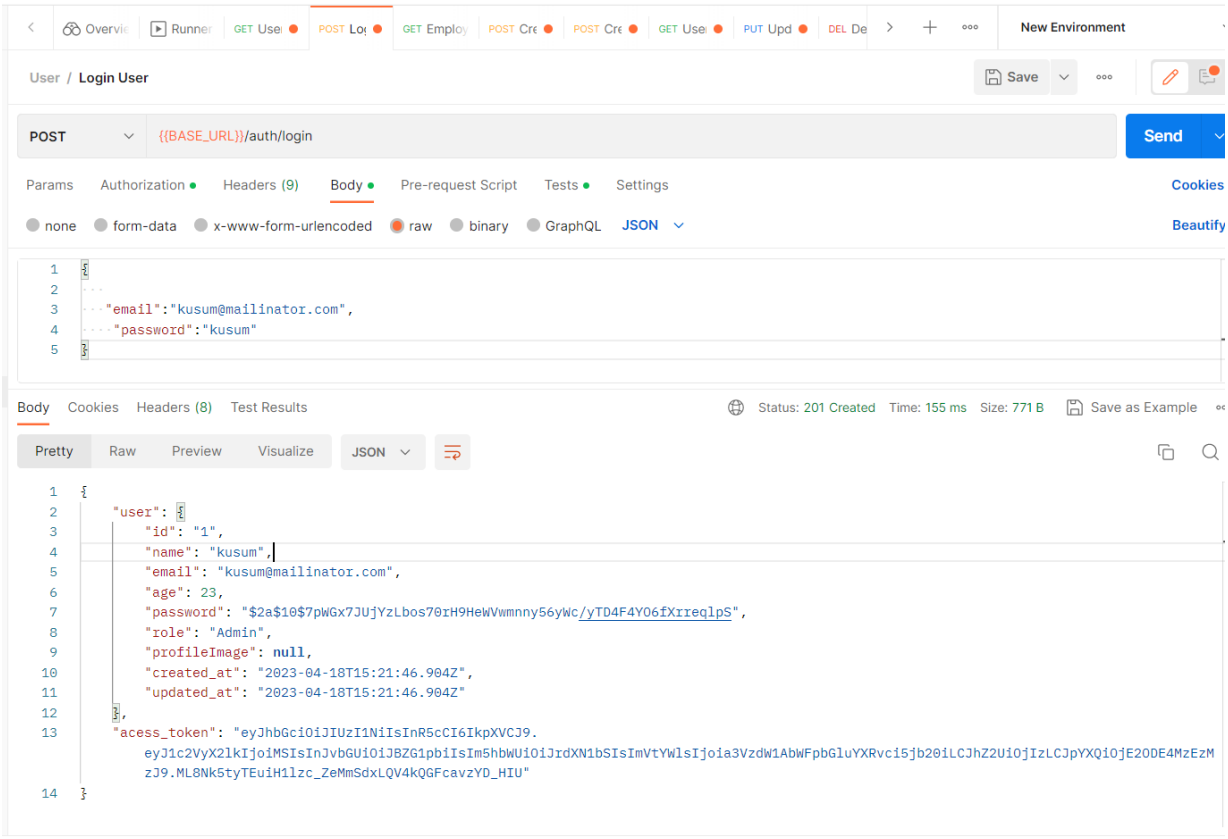

Fig 9.12 Login

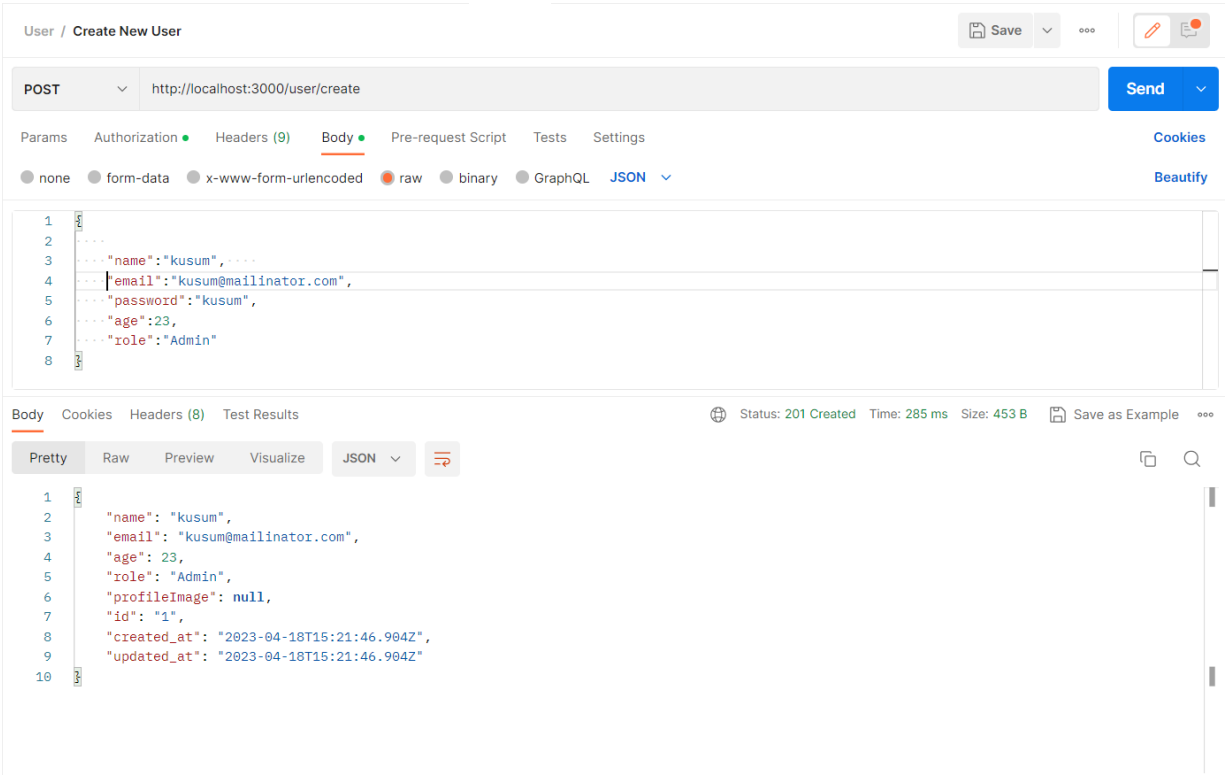

Fig 9.13 Add User

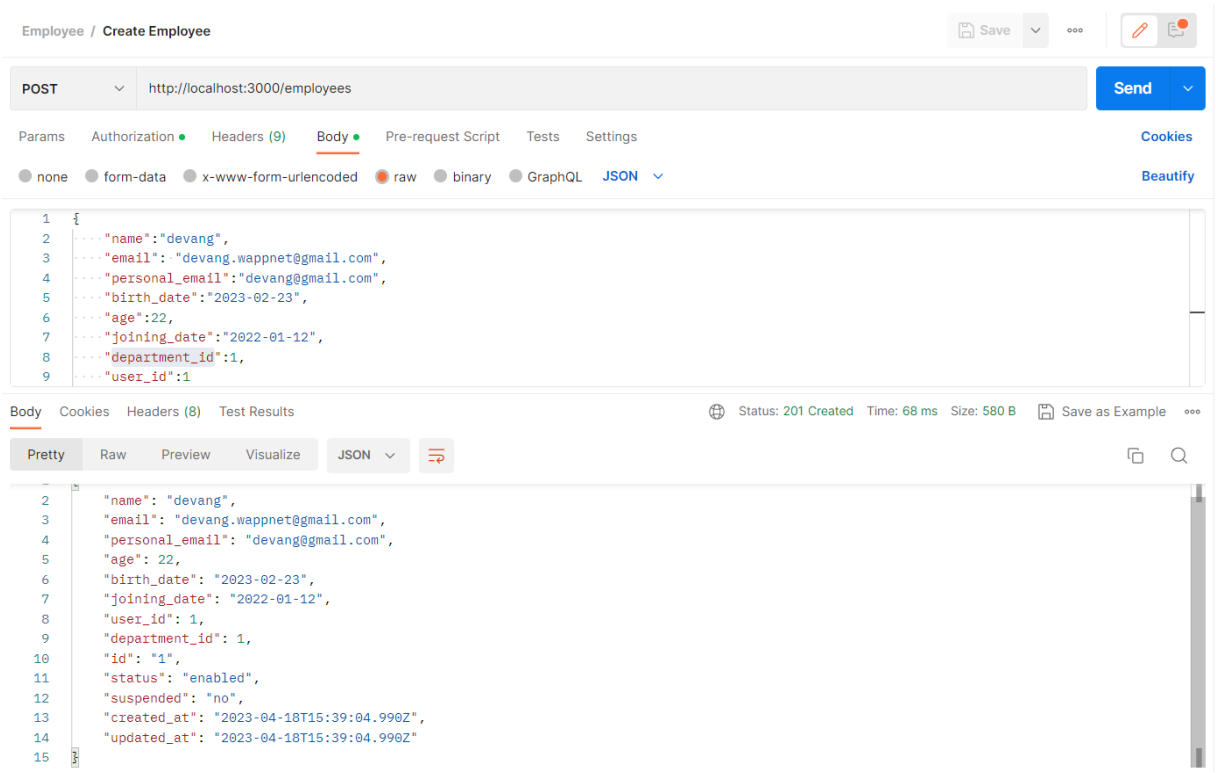

Fig 9.14 Add Employee

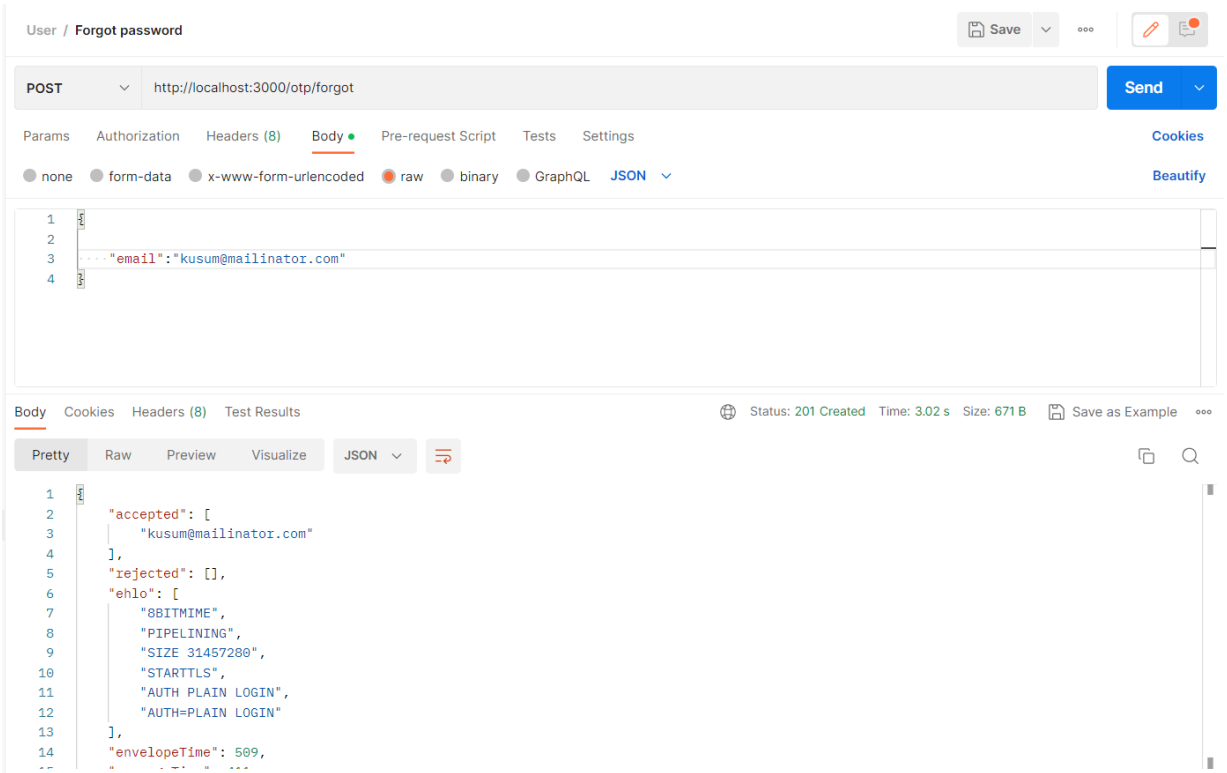

Fig 9.15 Forgot Password

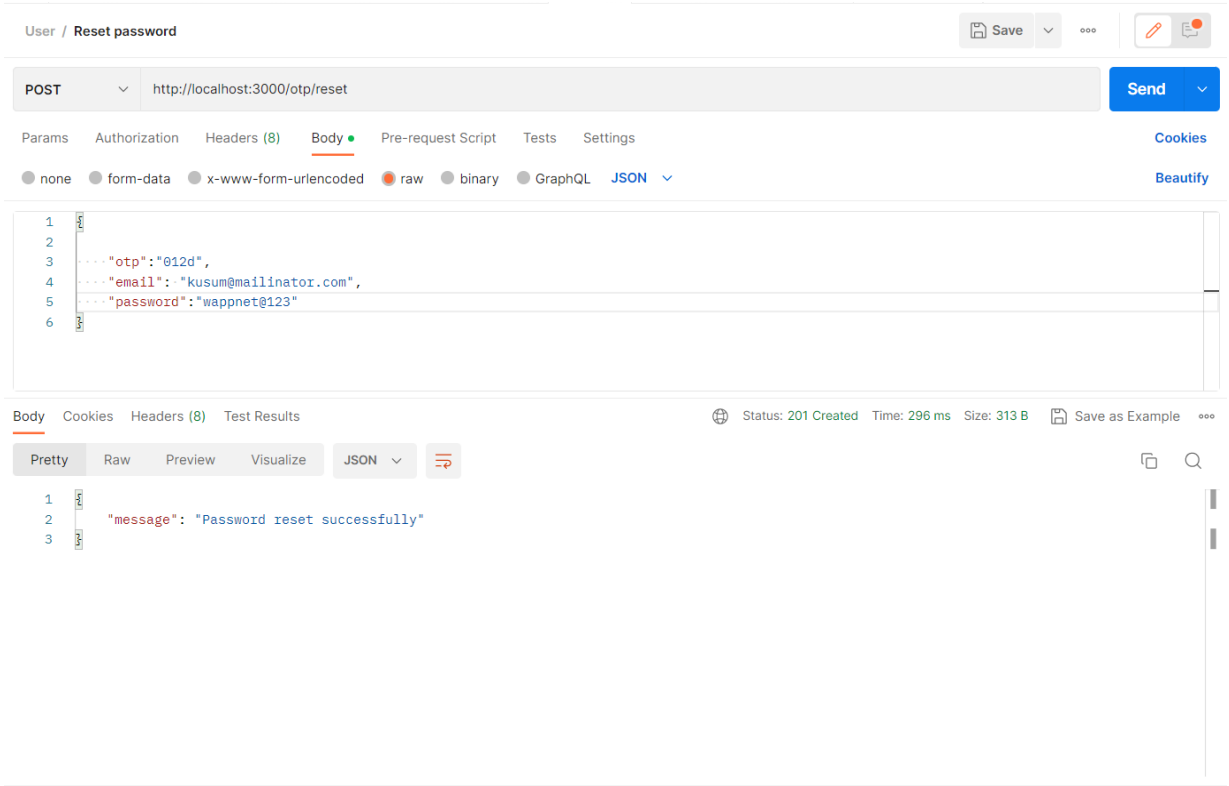

Fig 9.16 Reset Password

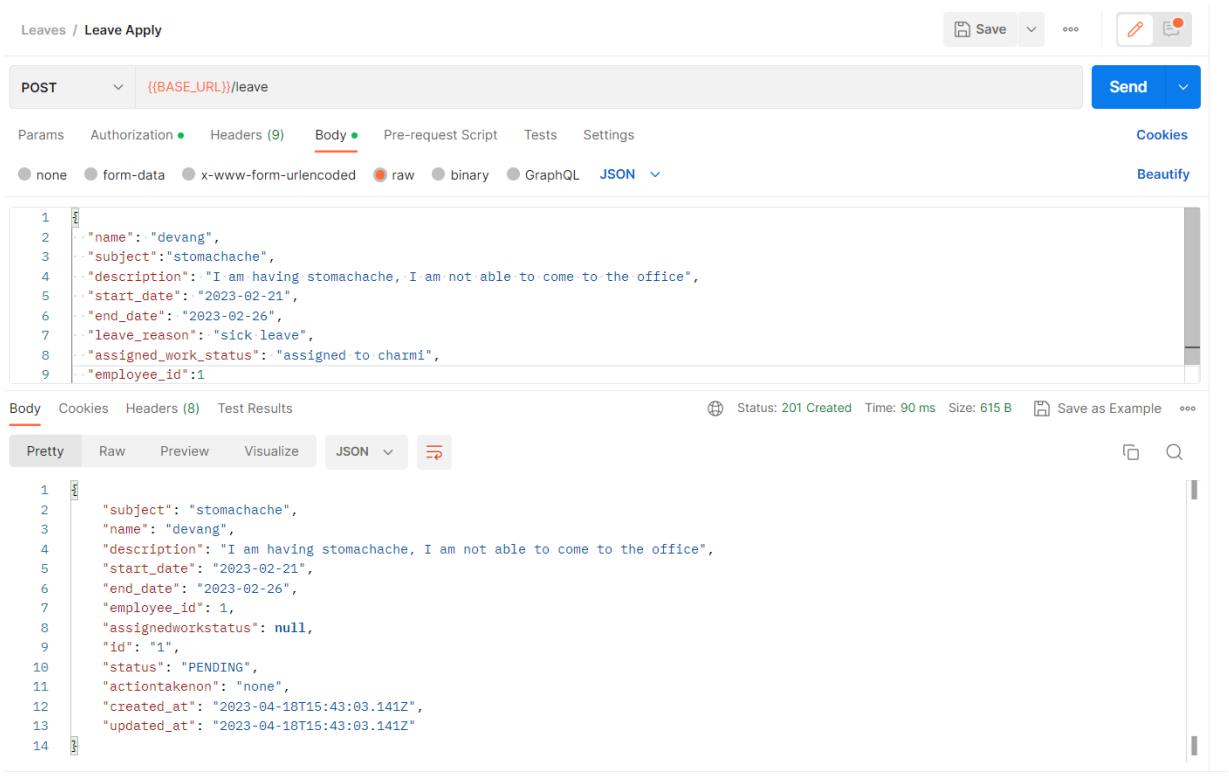

Fig 9.17 Apply Leave

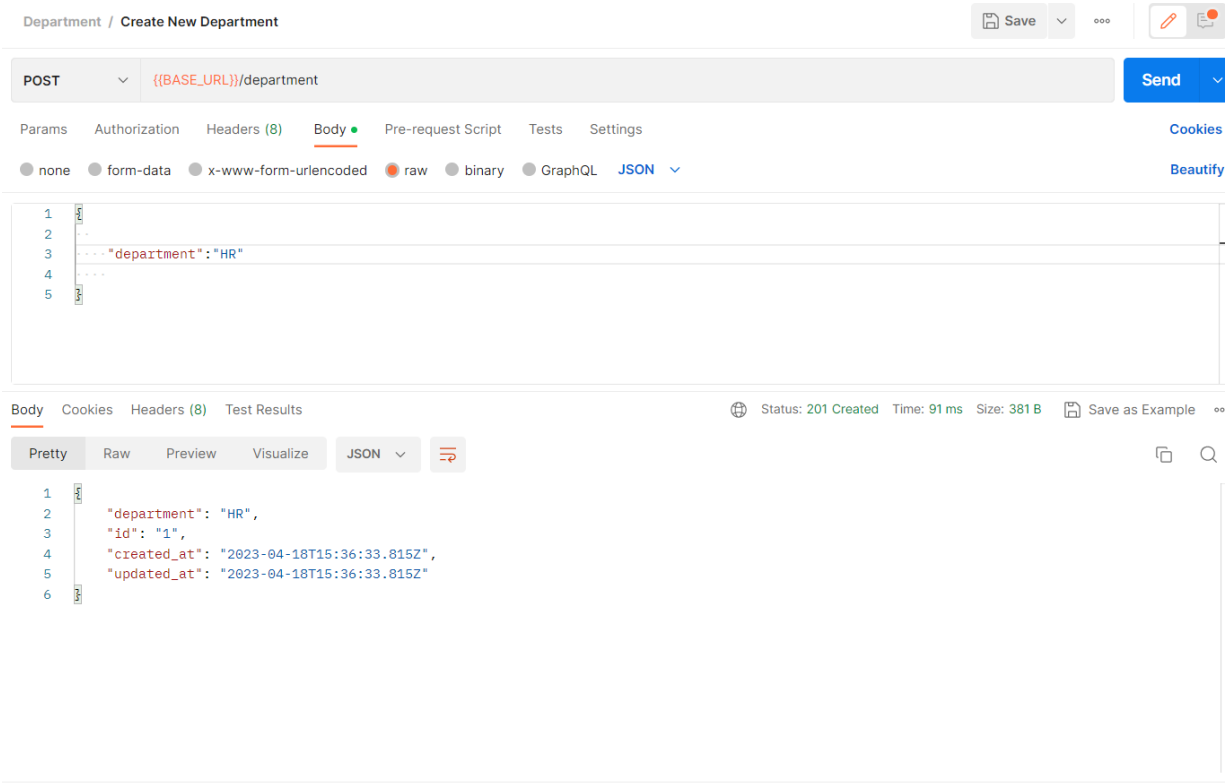

Fig 9.18 Add Department

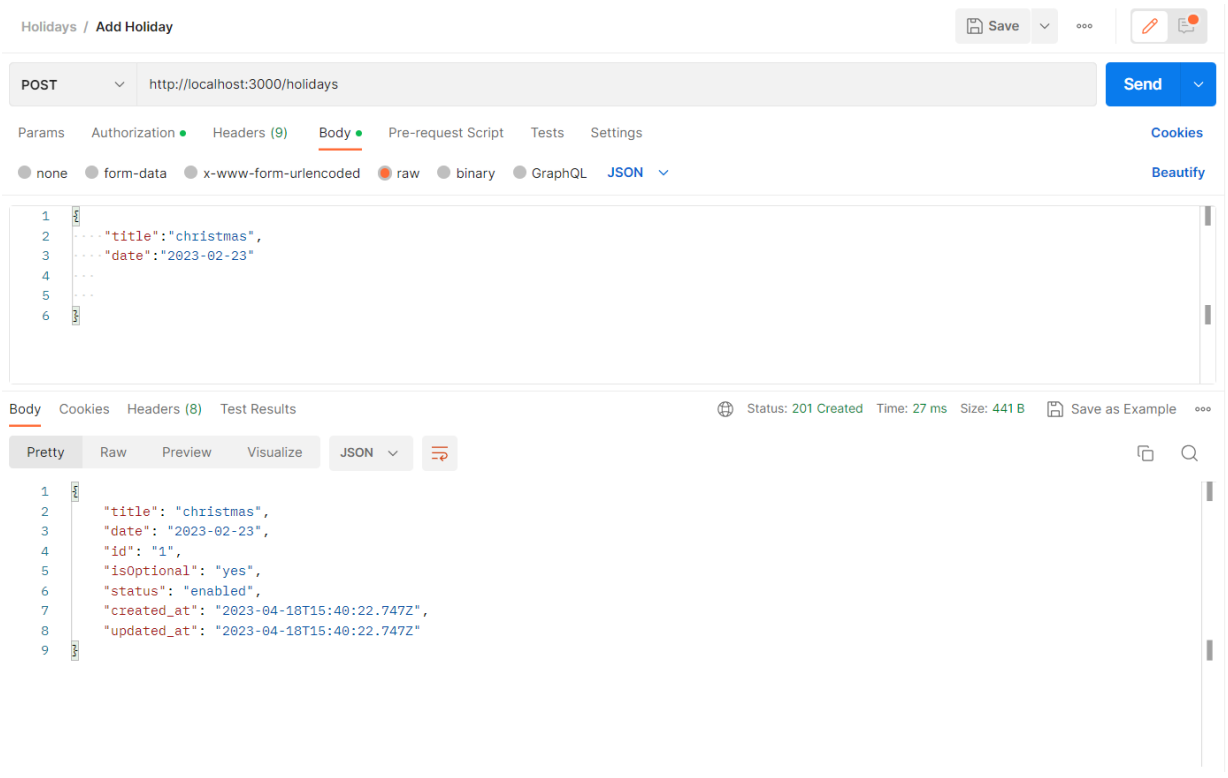

Fig 9.19 Add Holiday

10. Testing

Chapter 10: Testing

10.1 INTRODUCTION

Testing is the process of evaluating a system or its component(s) with the intent to findwhether it satisfies the specified requirements or not.

Testing is executing a system in order to identify any gaps, errors, or missingrequirements in contrary to the actual requirements.

10.2 WHITE-BOX TESTING

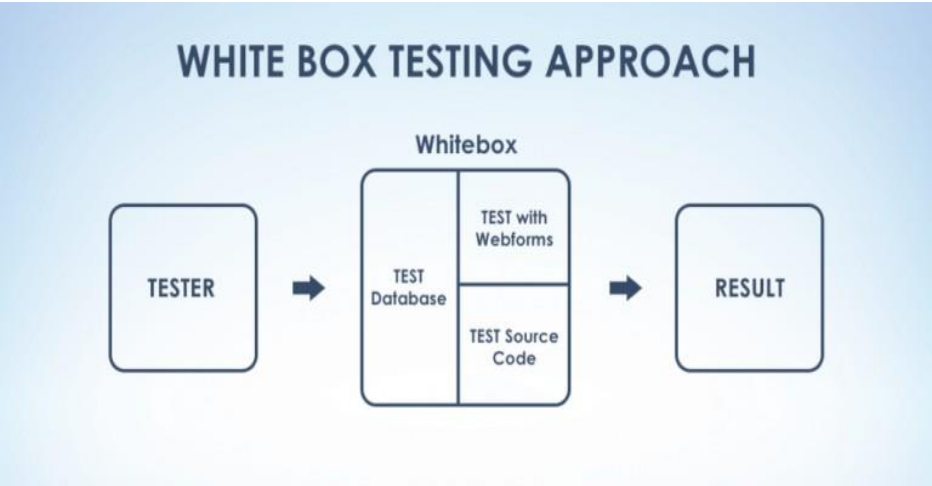

Fig 10.2.1 White-box Testing

White-box testing is the detailed investigation of internal logic and structure of the code. White-box testing is also called glass testing or open-box testing. In order to perform white-box testing on an application, a tester needs to know the internalworkings of the code. The tester needs to have a look inside the source code and find out which unit/chunk of the code is behaving inappropriately. As the tester has knowledge of the source code, it becomes very easy to find out which type of data can

help in testing the application effectively. It helps in optimizing the code. Extra lines of code can be removed which can bring in hidden defects. Due to the tester's knowledge about the code, maximum coverage is attained during test scenario writing.

In this project we have developed & performed necessary coding in order to get our data check whether it is correct or not as well as it properly transmitted & received.

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10.3 BLACK-BOX TESTING

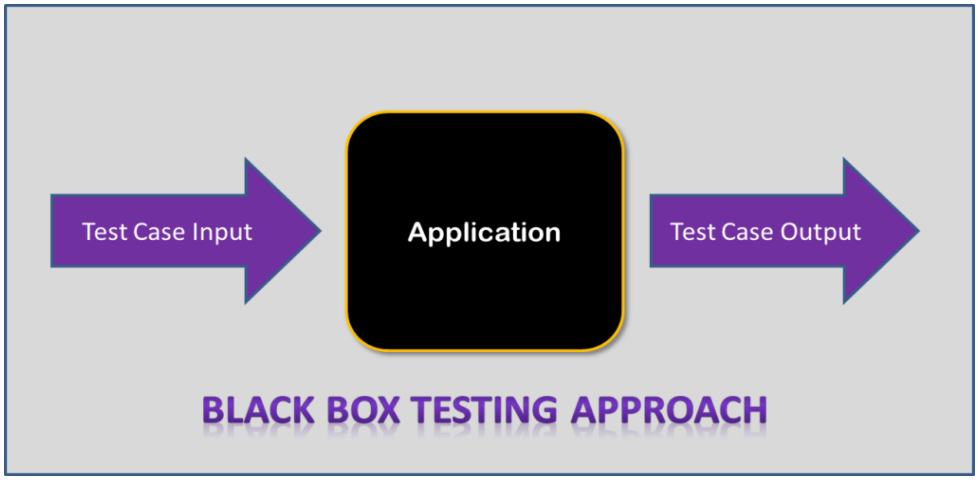

Fig 10.3.1 Black-box Testing

The technique of testing without having any knowledge of the interior workings of the application is called black-box testing. The tester is oblivious to the system architecture and does not have access to the source code. Typically, while performing a black-box test, a tester will interact with the system's user interface by providing inputs and examining outputs without knowing how and where the inputs are worked upon. It is well suited and efficient for large code segments and code access is not required. It clearly separates the user's perspective from the developer's perspective through visibly defined roles. Large numbers of moderately skilled testers can test the application with no knowledge of implementation, programming language, or operating systems.

10.4 Test Cases

A test case is a document, which has a set of test data, preconditions, expected resultsand post conditions, developed for a particular test scenario in order to verify compliance against a specific requirement.

Test Case acts as the starting point for the test execution, and after applying a set of input values; the application has a definitive outcome and leaves the system at some end point or also known as execution post condition.

Sr.No.	Test Case	Status
1	Test for database connection if the data gets correctly entered or not	Pass
2	Test of different API calls	Pass
3	Test for Validation	Pass

11. Limitation and Future Enhancement

11.1 Limitation

11.2 Future Enhancement

Chapter 11: Limitations & Future Enhancements

11.1 LIMITATIONS

Limitations of the HRMS System:

- Dependency on technology: Since the HRMS system is reliant on technology such as hardware, software, and network infrastructure, any issues with these components can limit the system's functionality.
- Limited flexibility: The HRMS system may have limitations in terms of customization, making it challenging to adapt to specific business requirements and processes.
- Data security concerns: The HRMS system may be vulnerable to cyber threats, putting sensitive employee data at risk. Adequate measures should be taken to ensure data security and privacy.
- Cost: The implementation and maintenance costs of an HRMS system may be significant, making it challenging for small businesses to implement.
- User adoption: HRMS systems require users to learn new tools and processes, and there may be resistance to adopting the new system, affecting its efficiency and effectiveness.

11.2 FUTURE ENHANCEMENTS

Future Enhancement of the HRMS System:

- Integration with other HR systems: The HRMS can be integrated with other HR systems like performance management systems, payroll systems, and attendance management systems, to provide a more comprehensive HR solution
- Self-service features: The addition of self-service features, such as employee self-service and manager self-service, can help streamline HR processes and reduce the workload of HR staff.

- Mobile optimization: Optimizing the HRMS for mobile devices can help employees and managers access HR-related information and perform HR-related tasks on the go, providing a more flexible and convenient user experience.
- Artificial intelligence and machine learning: Incorporating artificial intelligence and machine learning capabilities can help automate certain HR processes, such as resume screening, employee onboarding, and performance evaluations.
- Employee engagement and retention tools: Adding features to measure employee engagement, satisfaction, and retention can help organizations identify and address issues before they become major problems.
- E-learning and training: Including e-learning and training features within the HRMS can help organizations provide continuous learning and development opportunities to employees, promoting employee growth and retention.
- Social collaboration tools: Incorporating social collaboration tools within the HRMS can help employees and teams connect, collaborate, and share information, improving communication and productivity.

12. Conclusion

12.1 Conclusion

Chapter 12: Conclusion

CONCLUSION

In conclusion, an HRMS system is a valuable tool for managing human resources in an organization. It streamlines HR processes, reduces the workload of HR staff, and provides employees and managers with easy access to HR-related information and tools. By automating certain tasks and providing self-service features, an HRMS can help organizations save time and money while improving efficiency and accuracy.

Additionally, by providing real-time data and analytics, an HRMS can help organizations make informed decisions about hiring, training, and employee retention. The system can also help ensure compliance with HR-related laws and regulations.

Overall, an HRMS is a versatile and flexible solution that can be customized to meet the specific needs of an organization. With the potential for future enhancements such as integration with other HR systems, artificial intelligence and machine learning capabilities, and social collaboration tools, an HRMS can help organizations stay ahead of the curve and improve their HR processes and outcomes.

However, it is important to note that the successful implementation and use of an HRMS requires careful planning, training, and ongoing support. It is essential to involve all stakeholders in the process and ensure that the system aligns with the organization's goals and values. With proper planning and execution, an HRMS can be a powerful tool for managing human resources and driving organizational success.

13. References

13.1 References

Chapter 13: References

13.1 References

1. Kavanagh, M. J., & Johnson, R. D. (2017). Human resource information systems: Basics, applications, and future directions (3rd ed.). Thousand Oaks, CA: SAGE Publications.
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3. Armstrong, M., & Taylor, S. (2014). Armstrong's handbook of human resource management practice (13th ed.). London, UK: Kogan Page.
4. Stone, D. L., Deadrick, D. L., Lukaszewski, K. M., & Johnson, R. (2015). The influence of technology on the future of human resource management. Human Resource Management Review, 25(2), 216-231.
5. Yoon, J., & Lee, J. (2018). The impact of human resource management system on employee performance: An application of privacy calculus theory. International Journal of Information Management, 39, 141-150.