MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

Deemed to be University

(Declared under Distinct Category by Ministry of Education, Govt. of India)

NAAC Accredited with A++ Grade

Project Report

On

Development of Employee Management System

Submitted By:

Saloni Jain

(0901CA221055)

Industry Mentor:

Mr. Rajeev Kumar (Project Guide, SyanSoft Technologies Pvt. Ltd.)

Faculty Mentor:

Dr. Parul Saxena (Assistant Professor)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

GWALIOR - 474005 (MP) Estd. 1957

January – June 2024

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A project report submitted in partial fulfilment of the requirement for the degree of

MASTER IN COMPUTER APPLICATION

in

COMPUTER SCIENCE AND ENGINEERING

Submitted By:

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GWALIOR - 474005 (MP) Estd. 1957

January – June 2024

SYANSOFT TECHNOLOGIES PRIVATE LIMITED
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Date: 22-Apr-2024

Certificate of Internship Project

This is to certify that

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Is currently doing development Internship Project at SyanSoft Technologies. This internship project consist of 6 Months of rigorous training and practical application of Java programming skills, their last date of the internship will be on 18th June2024.

During the internship, she demonstrated exceptional dedication, enthusiasm, and proficiency in Java development. She successfully doing all assigned tasks, projects, and demonstrated the ability to collaborate effectively with the development team.

SYANSOFT Technologies Pvt. Ltd.

Director

Regards,
HR/Director
SyanSoft Technologies

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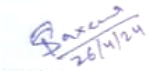
CERTIFICATE

This is certified that **Saloni Jain (0901CA221055)** has submitted the project report titled **Devlopment of Employee Management System** under the mentorship of **Mr. Rajeev Kumar** (Project Guide, SyanSoft Technologies Pvt. Ltd.) in partial fulfilment of the requirement for the award of degree of **Master in Computer Application** of Computer Science and Engineering from **Madhav Institute of Technology and Science, Gwalior.**



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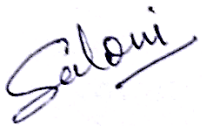
DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of degree of **Master in Computer Application** in Computer Science and Engineering at **Madhav Institute of Technology & Science, Gwalior** is an authenticated and original record of my work under the mentorship of **Mr. Rajeev Kumar** (Project Guide, SyanSoft Technologies Pvt. Ltd.) .

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.



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ABSTRACT

Employee Management Tool is designed to revolutionize human resource administration in organizations. This comprehensive solution integrates diverse modules to address the entirety of the employee lifecycle, promising a seamless and efficient management experience.

The streamlined onboarding and offboarding processes ensure a smooth transition for employees, leveraging digital document submission and e-signatures. This module is designed to enhance compliance and data security.

The Employee Management Tool enhances this functionality by introducing advanced features such as employee onboarding, performance tracking, and skill development monitoring. Through a user-friendly interface, HR administrators can navigate and utilize these tools to streamline recruitment, monitor employee progress, and facilitate continuous professional growth.

Furthermore, the Human Resource Management System incorporates communication tools to facilitate efficient and transparent information flow within the organization. The Employee Management Tool extends this functionality by offering collaborative features, enabling employees and managers to communicate effectively, share insights, and address concerns.

In summary, the Advanced Human Resource Management System with Integrated Employee Management Tool serves as a holistic solution to enhance HR processes. By combining traditional Human Resource Management System functionalities with innovative Employee Management Tools, this system aims to empower organizations in cultivating a motivated workforce, fostering continuous improvement, and driving overall organizational success.

Employee engagement is prioritized through surveys, feedback mechanisms, and recognition programs, fostering a positive workplace culture. Social collaboration features further enhance communication.

The user-friendly interface ensures widespread adoption throughout the organization. Its modular design allows for customization, making it scalable for businesses of all sizes.

By implementing this Employee Management Tool, organizations can anticipate heightened operational efficiency, increased employee satisfaction, and improved strategic decision-making through data-driven insights. This abstract underscores the tool's potential to redefine employee management practices and contribute significantly to the overall success of modern businesses.

सार

यह सार संगठनों में मानव संसाधन प्रशासन में क्रांति लाने के लिए डिज़ाइन किए गए एक परिष्कृत कर्मचारी प्रबंधन उपकरण का परिचय देता है। यह व्यापक समाधान एक सहज और कुशल प्रबंधन अनुभव का वादा करते हुए, कर्मचारी जीवनचक्र की संपूर्णता को संबोधित करने के लिए विविध मॉड्यूल को एकीकृत करता है। सुव्यवस्थित ऑनबोर्डिंग और ऑफबोर्डिंग प्रक्रियाएं डिजिटल दस्तावेज़ जमा करने और ई-हस्ताक्षर का लाभ उठाते हुए कर्मचारियों के लिए एक सुचारु परिवर्तन सुनिश्चित करती हैं। यह मॉड्यूल अनुपालन और डेटा सुरक्षा बढ़ाने के लिए डिज़ाइन किया गया है। मानव संसाधन प्रबंधन प्रणाली कर्मचारी जानकारी को कुशलतापूर्वक संग्रहीत और प्रबंधित करने के लिए एक केंद्रीकृत डेटाबेस को शामिल करती है, जिससे मानव संसाधन कर्मियों के लिए प्रासंगिक डेटा तक त्वरित पहुंच सुनिश्चित होती है। कर्मचारी प्रबंधन उपकरण कर्मचारी ऑनबोर्डिंग, प्रदर्शन ट्रैकिंग और कौशल विकास निगरानी जैसी उन्नत सुविधाओं को पेश करके इस कार्यक्षमता को बढ़ाता है। उपयोगकर्ता के अनुकूल इंटरफेस के माध्यम से, मानव संसाधन प्रशासक भर्ती को सुव्यवस्थित करने, कर्मचारी प्रगति की निगरानी करने और निरंतर पेशेवर विकास की सुविधा के लिए इन उपकरणों को नेविगेट और उपयोग कर सकते हैं। इसके अलावा, मानव संसाधन प्रबंधन प्रणाली संगठन के भीतर कुशल और पारदर्शी सूचना प्रवाह को सुविधाजनक बनाने के लिए संचार उपकरणों को शामिल करती है। कर्मचारी प्रबंधन उपकरण सहयोगी सुविधाओं की पेशकश करके इस कार्यक्षमता का विस्तार करता है, जिससे कर्मचारियों और प्रबंधकों को प्रभावी ढंग से संवाद करने, अंतर्दृष्टि साझा करने और चिंताओं को दूर करने में सक्षम बनाया जाता है। संक्षेप में, एकीकृत कर्मचारी प्रबंधन उपकरण के साथ उन्नत मानव संसाधन प्रबंधन प्रणाली मानव संसाधन प्रक्रियाओं को बढ़ाने के लिए एक समग्र समाधान के रूप में कार्य करती है। पारंपरिक मानव संसाधन प्रबंधन प्रणाली की कार्यप्रणाली को नवोन्मेषी कर्मचारी प्रबंधन उपकरणों के साथ जोड़कर, इस प्रणाली का लक्ष्य संगठनों को एक प्रेरित कार्यबल विकसित करने, निरंतर सुधार को बढ़ावा देने और समग्र संगठनात्मक सफलता प्राप्त करने के लिए सशक्त बनाना है। सकारात्मक कार्यस्थल संस्कृति को बढ़ावा देने के लिए सर्वेक्षण, फीडबैक तंत्र और मान्यता कार्यक्रमों के माध्यम से कर्मचारी जुड़ाव को प्राथमिकता दी जाती है। सामाजिक सहयोग सुविधाएँ संचार को और बढ़ाती हैं। उपयोगकर्ता के अनुकूल इंटरफ़ेस पूरे संगठन में व्यापक रूप से अपनाए जाने को सुनिश्चित करता है। इसका मॉड्यूलर डिज़ाइन अनुकूलन की अनुमति देता है, जो इसे सभी आकार के व्यवसायों के लिए स्केलेबल बनाता है। इस कर्मचारी प्रबंधन उपकरण को लागू करके, संगठन बढ़ी हुई परिचालन दक्षता, बढ़ी हुई कर्मचारी संतुष्टि और डेटा-संचालित अंतर्दृष्टि के माध्यम से बेहतर रणनीतिक निर्णय लेने की आशा कर सकते हैं। यह सार कर्मचारी प्रबंधन प्रथाओं को फिर से परिभाषित करने और आधुनिक व्यवसायों की समग्र सफलता में महत्वपूर्ण योगदान देने के लिए उपकरण की क्षमता को रेखांकित करता है।

LIST OF CONTENTS

Abstract …… V

सार.....VI

Chapter - 1 Introduction ..……. 1

1.1 Problem Identification …….……... 2

1.2 Parent Organization ..……..…….. 3

1.3 Hardware and Software Specification ……. 4

Chapter - 2 Systems Analysis ..…….……. 5

2.1 Problem Analysis ..……..……. 5

2.2 Feasibility Study ..…….……... 6

2.2.1 Economical Feasibility ..…….……..…..... 6

2.2.2 Technical Feasibility ……...……7

2.2.3 Behavioural Feasibility ..……..… 8

2.3 Data Flow Diagram …….. 9

2.3.1 DFD 0 ..…….... 9

2.3.2 DFD 1 for Manager….…… 10

2.3.3 DFD 1 for Employee..…….. 11

Chapter - 3 System Design ……...…….. 12

3.1 Database Tables …..……..… 12

3.2 Entity Relationship Diagram ..…….……. 15

Chapter – 4 Testing …..…….. 16

4.1 Unit Testing ……. 16

4.2 Functionality Testing ...……. 17

4.3 Usability Testing ..……..… 18

4.4 Performance Testing ..…...…… 18

4.5 Compatibility Testing ..……..…… 19

4.6 System Testing ..……..……... 20

Chapter - 5 Implementation ……. 21

Chapter - 6 Sample Forms and Reports ..……..22

Chapter - 7 Conclusion and Future Scope ……... 29

Bibliography…..……...….31

Plagiarism Report…….....….32

Fortnightly Progress Reports…….…….... 33

Chapter 1 : Introduction

Employee Management System is a project to give administrators with comprehensive platform to manage employee records efficiently while permiting employees to manage and update their profiles. The system aims to centralize employee information, combining their identification details, contact, important dates, and facilitating quick access to employee records. The different types of users present in this project are Admin & Employee.

The admin dashboard provides an overview of key metrics such as total registered employees, department count, leave types, and leave request status. Admins can add, update, or delete departments as needed.Admins can manage leave types by adding, updating, or deleting them.Admins have the authority to manage employee profiles. Admins can manage salary-related information, including additions, updates, and deletions.Admins can handle leave requests, including reviewing and updating their status. Admins have access to reports showing the number of registered employees within specific time frames.Admins can update their own profile information, change passwords, and recover forgotten passwords.

Employees are greeted with a dashboard displaying relevant information upon logging in.Employees can see and manage their personal profile details in this section.Employee can apply for a leave and track their leave history.Employees can view their salary history.

The Employee Management System project is only accessible to the Organization's management. The solution developed uses Authentication as well as Authorization to control user access and server relevant report to the end user of the dashboard.

Employee Management Tool, a pivotal component within our comprehensive Human Resource Management System (HRMS). As businesses evolve in today's dynamic landscape, the effective management of human capital stands as a critical determinant of success. Our Employee Management Tool is crafted with a focus on empowering HR professionals and organizational leaders to streamline and optimize every aspect of the employee lifecycle.

At its core, our Employee Management Tool is designed to revolutionize the way organizations handle personnel administration, from recruitment to retirement. By leveraging advanced technologies, intuitive interfaces, and robust functionalities, we offer a solution tailored to meet the diverse needs of modern workplaces.

With our tool, HR departments can seamlessly oversee recruitment processes, effortlessly tracking candidates from application to onboarding. Through customizable workflows and automation features, we ensure a smooth transition for new hires, minimizing administrative burdens and enhancing the overall experience.

Once onboarded, employees benefit from a centralized platform that facilitates communication, collaboration, and performance management.

In summary, our Employee Management Tool is not merely a software solution; it's a strategic enabler for organizations seeking to unlock the full potential of their workforce.

1.1 Problem Identification

The current system for managing employees is inefficient. Within the current framework for managing employees, several inefficiencies are apparent, significantly hindering organizational effectiveness. One critical issue is the system's inability to leverage employee reports effectively, leading to a lack of insight into workforce dynamics and performance metrics. Without robust reporting mechanisms, HR professionals and organizational leaders struggle to gain a comprehensive understanding of employee productivity, engagement levels, and skill gaps. This limitation severely impacts decision-making processes, as crucial insights that could inform strategic initiatives or resource allocation remain inaccessible. Additionally, the absence of efficient reporting functionalities exacerbates administrative burdens, requiring manual compilation and analysis of data, consuming valuable time and resources. As a result, the organization operates without the necessary visibility into its workforce, impeding efforts to optimize performance, foster talent development, and drive overall business success. Addressing these shortcomings is imperative for transitioning towards a more data-driven approach to employee management, facilitating informed decision-making and organizational growth.

Ineffective Communication: If the system lacks features for clear communication between employees and management, it could lead to misunderstandings and decreased productivity.

Data Security Concerns: If the system does not adequately protect sensitive employee information, it can lead to breaches and compromise employee privacy.

Lack of Scalability: As the organization grows, the system may struggle to accommodate increased users and data volume, leading to performance issues and decreased efficiency.

Limited Employee Self-Service: If the system lacks self-service features for tasks such as requesting for leave, updating personal information, or accessing company policies, it can create unnecessary administrative burden on HR staff.

High Maintenance Costs: If the system requires frequent updates, maintenance, or expensive licensing fees, it can strain the organization's budget and resources over time.

Inaccurate Payroll Processing: If the system lacks robust payroll processing capabilities, including accurate time tracking, tax calculations, and deduction management, it can lead to payroll errors, compliance issues, and employee dissatisfaction.

1.2 Parent Organisation

At SyanSoft, we pride ourselves on offering a comprehensive suite of technology solutions designed to address real-world challenges faced by businesses of all sizes and across various industries and regions. Our core focus revolves around leveraging cutting-edge application development technologies and industry best practices to either develop custom applications tailored to your specific business requirements or to modernize your existing applications, ensuring optimal performance both now and in the future.

Our approach to IT solutions is defined by innovation and expertise. We merge state-of-the-art technology with a deep understanding of your business needs to deliver personalized solutions that enhance efficiency, security, and growth. You can count on us to guide you through the complexities of the digital landscape and support your journey towards success.

We understand that every business is unique, which is why we offer tailored solutions that are perfectly aligned with your objectives. Our team works closely with you to gain insights into your specific challenges and goals, ensuring that the solutions we provide address your unique needs effectively.

At SyanSoft, innovation is more than just a buzzword; it's at the core of everything we do. We're constantly exploring new technologies and methodologies to ensure that our clients stay ahead of the curve. From AI and machine learning to blockchain and IoT, we harness the power of innovation to drive tangible results for your business.

With years of experience and a team of seasoned experts, we bring a wealth of knowledge and skills to the table. Whether it's developing complex applications, optimizing existing systems, or providing strategic consulting, you can trust us to deliver excellence every step of the way.

Our ultimate goal is to help your business thrive in today's digital-first world. We don't just solve immediate challenges; we also help you plan for the future, ensuring that our solutions are scalable, adaptable, and future-proof.

Customer satisfaction lies at the heart of our business. Your success is our success, and we'll go above and beyond to ensure that you achieve your goals.

Even after the project is complete, our commitment to your success continues. We provide ongoing support and maintenance to ensure that your systems are always running smoothly. Whether you need technical assistance, training, or advice, we're here for you every step of the way.

In summary, SyanSoft is more than just a technology provider; we're your partner in innovation, growth, and success. With our tailored solutions, innovative approach, and unwavering commitment to your satisfaction, we're ready to help you overcome any challenge and unlock new opportunities for your business.

1.3 Hardware and Software Specification

1.3.1 Hardware Specification

Hardware Requirement - To guarantee optimum performance and dependability, we have specified precise specs for the hardware needed for our project. First, we have a Core i5 CPU from the 5000 series, which has a frequency of 2.30 GHz. This processor has a strong processing capacity, which is necessary to effectively manage the computational needs of our project. Our system will have enough memory to facilitate multitasking and manage big datasets with ease when combined with 8 GB of RAM. We will use a 512 GB hard disk drive to store our project files and data, which will be enough storage for our purposes. We'll also include a 512 GB SSD (Solid State Drive), which improves overall system performance and provides quicker data access rates. Our system will run on a 64-bit OS X64 Processor to maximize performance and ensure compatibility with contemporary software. With these hardware requirements in place, we can start our project with confidence since we know that our system can handle the demands of our jobs in an effective and efficient manner.

1.3.2 Software Specification

Window 10 operating system: The decision to utilize Windows 10 as the operating system stems from its advanced features, enhanced security measures, and improves user interfaces, with its modern design and optimized performance, it provides a stable and secure environment for software development.

Visual Studio Code: As the primary coding environment, VS Code offers a plethora of features tailored for modern development workflows, Its support for various programming languages, extensive libraries of extensions, and integrated version control systems streamline the coding process, fostering productivity and collaboration among team members.

MySQL Workbench: The selection of MySQL workbench for database management ensures efficient handling of data throughout development lifecycle. Its intuitive graphical user interface simplifies tasks such as database design, modelling, and administration, empowering developers to create and optimize databases with ease. Additionally, its compatibility with Windows 11 ensures seamless integration into the development environment.

Postman: Postman emerges as a critical tool for API testing and validation, crucial components in today's interconnected software ecosystem. Its intuitive interface allows developers to design, test. And debug APIs effortlessly, ensuring the reliability and scalability of software. It increases efficiency of testing. With features such as automated testing, real-time monitoring, and collaboration capabilities. By leveraging the capabilities of Windows 11, VS Code, Workbench and Postman, the software development process is poised for scalability and optimal performance. Whether it's handling large volumes of data, testing complex APIs, this robust software stack provides the necessary tools and resources to meet the demands of modern software development.

Chapter 2 : System Analysis

2.1 Problem Analysis

By incorporating these requirements into your system development process, you can effectively address the issues encountered in managing employees and provide a streamlined and efficient employee management experience.

2.1.1 User Management

i. The system shall support two types of users: employees and administrators.

ii. Employees will be able to create accounts, log in, and update their profiles.

iii. Administrators shall have the ability to manage employee accounts and access control.

2.1.2 Employee Information Management

i. Each employee record shall include details such as contact, post, dept. info, previous job information, employment status, and salary.

ii. System will allow administrators to edit and delete employee records.

2.1.3 Leave Management

i. Employees shall be able to request various types of leaves (e.g., sick leave, vacation, maternity/paternity leave) through the system.

ii. Administrators shall have the authority to approve or reject leave requests and manage leave balances for employees.

2.1.4 Performance Evaluation

i. The system shall facilitate the performance evaluation process by allowing administrators for setting performance targets, conduct employee assessments, and give feedback.

ii. Employees shall have access to their performance reviews and development plans through their accounts.

2.2 Feasibility Study

The purpose of conducting a feasibility study is to examine the practicality of implementing an employee dashboard, which will offer real-time access to employee data, security protocols, and essential metrics for employee administrators. This dashboard aims to empower administrators to base their decisions on data insights, thereby enhancing overall employee management and organizational control. The study will scrutinize the technical, economic, and operational feasibility of the proposed project.

2.2.1 Economical Feasibility

S. No.	Resource	Cost
1.	System Analyst (1) 7 Days/Month (3 Months)	₹3000 /-
2.	Programmer (2) 25 Days/Month (3 Months)	₹3500×2 = ₹7,000/-
3.	Database Specialist (1) 10 Days/Month (3 Months)	₹2000 /-
4.	Electricity	120 Unit×8 = ₹960 /-
5.	Internet/Wi-Fi	₹1500 /-
	Total	**₹14460 /-**

2.2.2 Technical Feasibility

i. Hardware Requirements

S. No.	Component	Specification
1.	Processer (CPU)	Intel Core i3 to i6 gen and above
2.	Memory (RAM)	4GB and above
3.	Storage	128GB
4.	Graphics	Integrated Graphics (most modern CPUs/GPUs)

ii. Programming Languages

S. No.	Site	Details
1.	Front End	HTML, CSS, JS, Bootstrap, Thyme leaf
2.	Back End	Core Java, Spring Boot
3.	Database	MySQL

iii. Software Requirements

S. No.	Component	Minimum Requirement
1.	Operating System	Windows 10 or later, MacOS
2.	Internet Browser	Chrome, Edge, Mozilla and Similar
3.	IDE	Spring Tool Suit

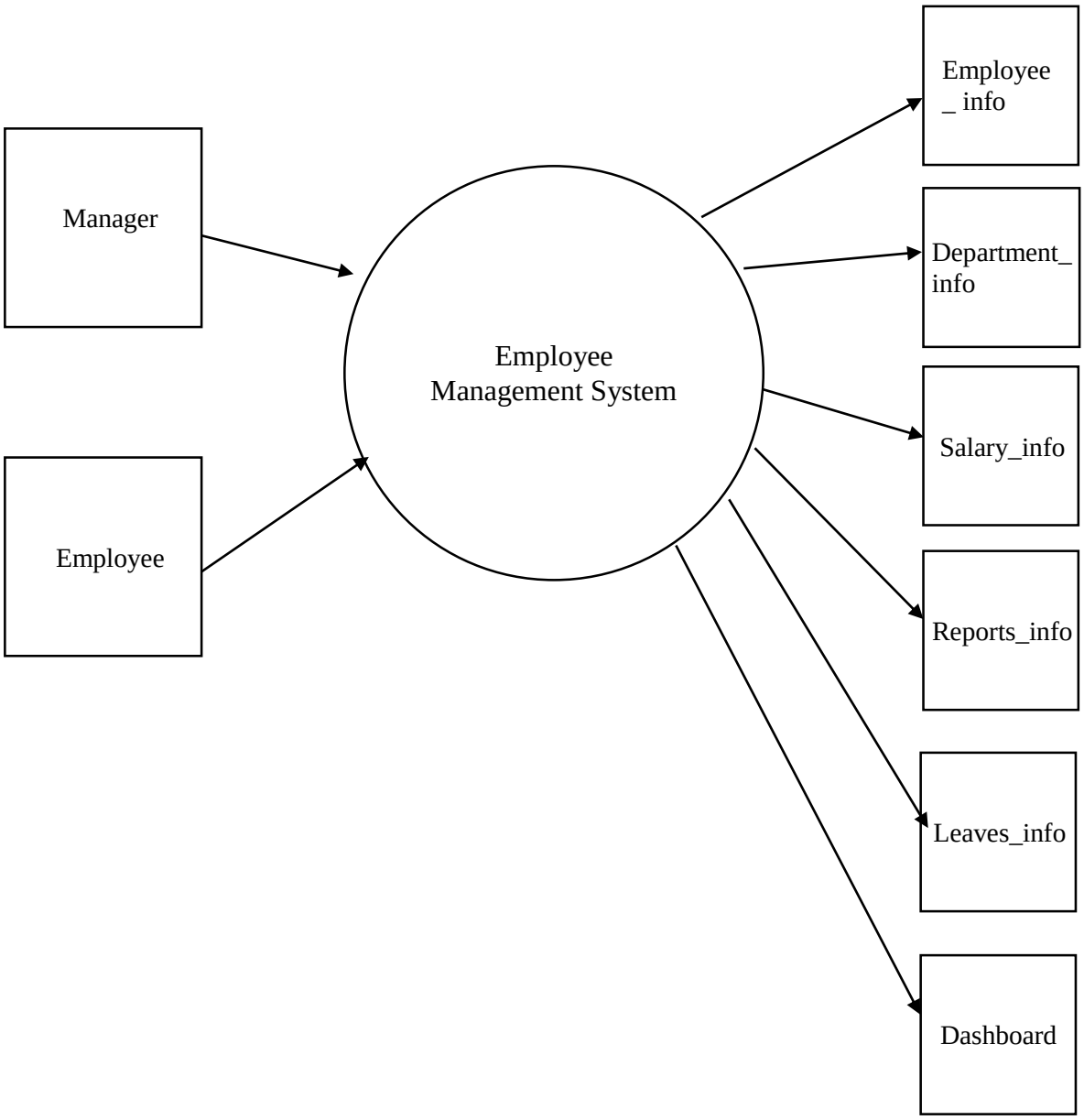
2.2.3 Behavioral Feasibility

As we all know that behavioral feasibility study should be maintained by the co-ordination and how to made strategy.

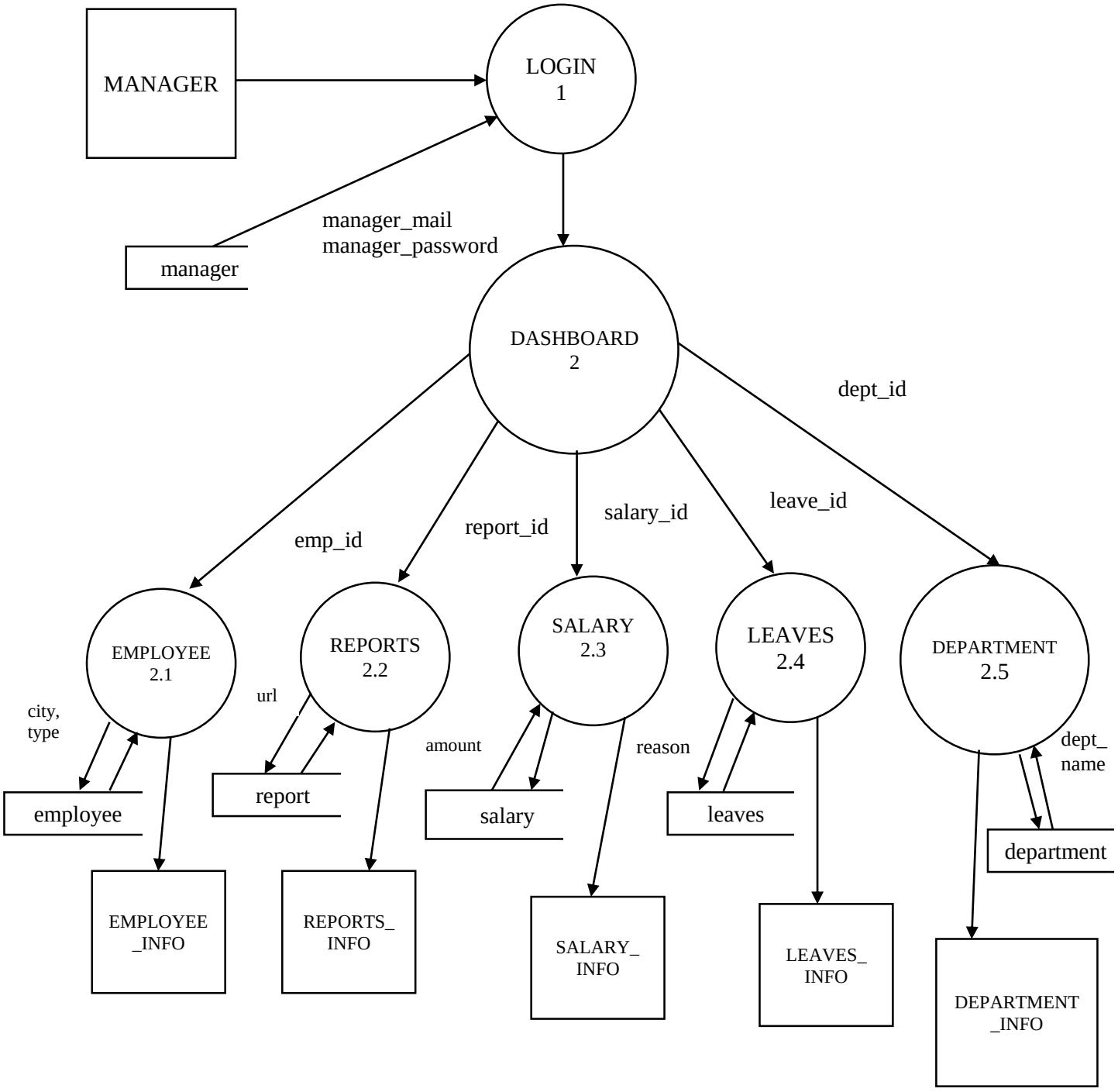
a) We had conducted regular meeting between team members and team leader. Gather some ideas from them for implementing.
b) We can also provide training to use this technical support. Describe the user training schedule for the new system. Shared the approach for continuing maintenance and support.
c) Twice a month expertise or specialist will take a meeting with team for maximum involvement and satisfaction through our development process. They will check all the activities from the team member and give better suggestion to resolve their query.
d) Make that the system confirms with all applicable terms and conditions, including those pertaining to data security and privacy.
e) To make sure the system is simple to use and intuitive, assess the user interface and overall user experience. Lower adoption rates and resistance can result from poor UX.
f) Analise the financial implications of putting the system into place, taking into accounts like development expenses, training costs and anticipated benefits. For manage our activities and expenses in order to minimize the overall budget.
g) Keep ourself updated on compliance requirements and regulatory changes to make sure the platform offers the data needed to compile with regulations. Make sure users have access to the data needed for compliance and reporting by updating information offerings on a regular basis in response to modifications in financial legislation.
h) Use data analytics and technological breakthroughs to find fresh, creative approaches to information presentation that suit consumer preferences. To improve the platform's capacity to provide pertinent and perceptive information, investigate cutting-edge technologies like machine learning and data visualization tools.

2.3 Data Flow Diagram

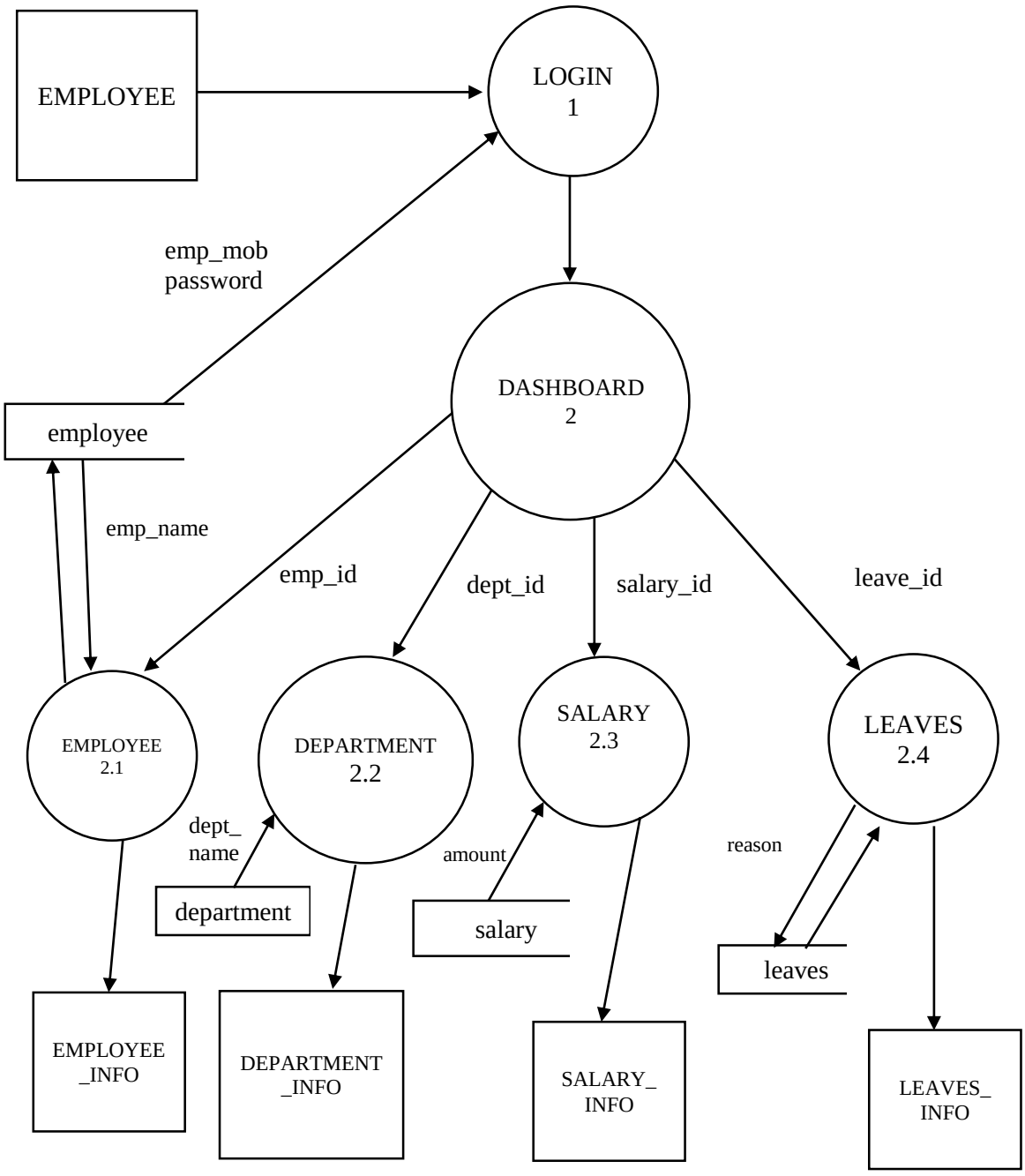
2.3.1 DFD 0



2.3.2 DFD 1 For Manager



2.3.3 DFD 1 For Employee



Chapter 3 : System Design

3.1 Database Tables

a) employee

S.No.	Field	Type	Constraint
1	emp_id	int	primary key
2	emp_name	varchar(50)	-
3	emp_age	int	-
4	emp_mob	int	-
5	dep_id	int	foreign key
6	city	varchar(30)	-
7	pincode	int	-
8	qualification	varchar(50)	-
9	current_experience	varchar(50)	-
10	start_date	date	-
11	end_date	date	-
12	type	varchar(30)	-
13	gender	varchar(10)	-
14	marital_status	varchar(15)	-
15	working_time	varchar(20)	-
16	assets_assign_id	int	foreign key
17	total_leaves_count	varchar(20)	-
18	recent_leave_date	date	-
19	comp_id	int	foreign key
20	identity_type	varchar(20)	-
21	identity_no	varchar(20)	-
22	position	varchar(20)	-
23	manager_id	int	foreign key

b) manager

S.No.	Field	Type	Constraint
1	mg_id	int	primary key
2	first_name	varchar(15)	-
3	last_name	varchar(15)	-
4	manager_mob	int	-
5	manager_mail	varchar(50)	-
6	manager_password	varchar(100)	-
7	company_id	int	foreign key
8	address	varchar(100)	-
9	created_by	varchar(50)	-
10	created_on	date	-
11	modified_on	date	-
12	modified_by	varchar(50)	-
13	status	varchar(20)	-

c) report

S.No.	Field	Type	Constraint
1	report_id	int	primary key
2	report_type	varchar(40)	-
3	status	varchar(20)	-
4	from_date	date	-
5	to_date	date	-
6	url	varchar(50)	-
7	request_id	int	-

d) leaves

S.No.	Field	Type	Constraint
1	leave_id	int	primary key
2	empl_id	int	foreign key
3	given_by	varchar(50)	-
4	reason	varchar(50)	-
5	from_date	date	-
6	to_date	date	-
7	created_on	date	-

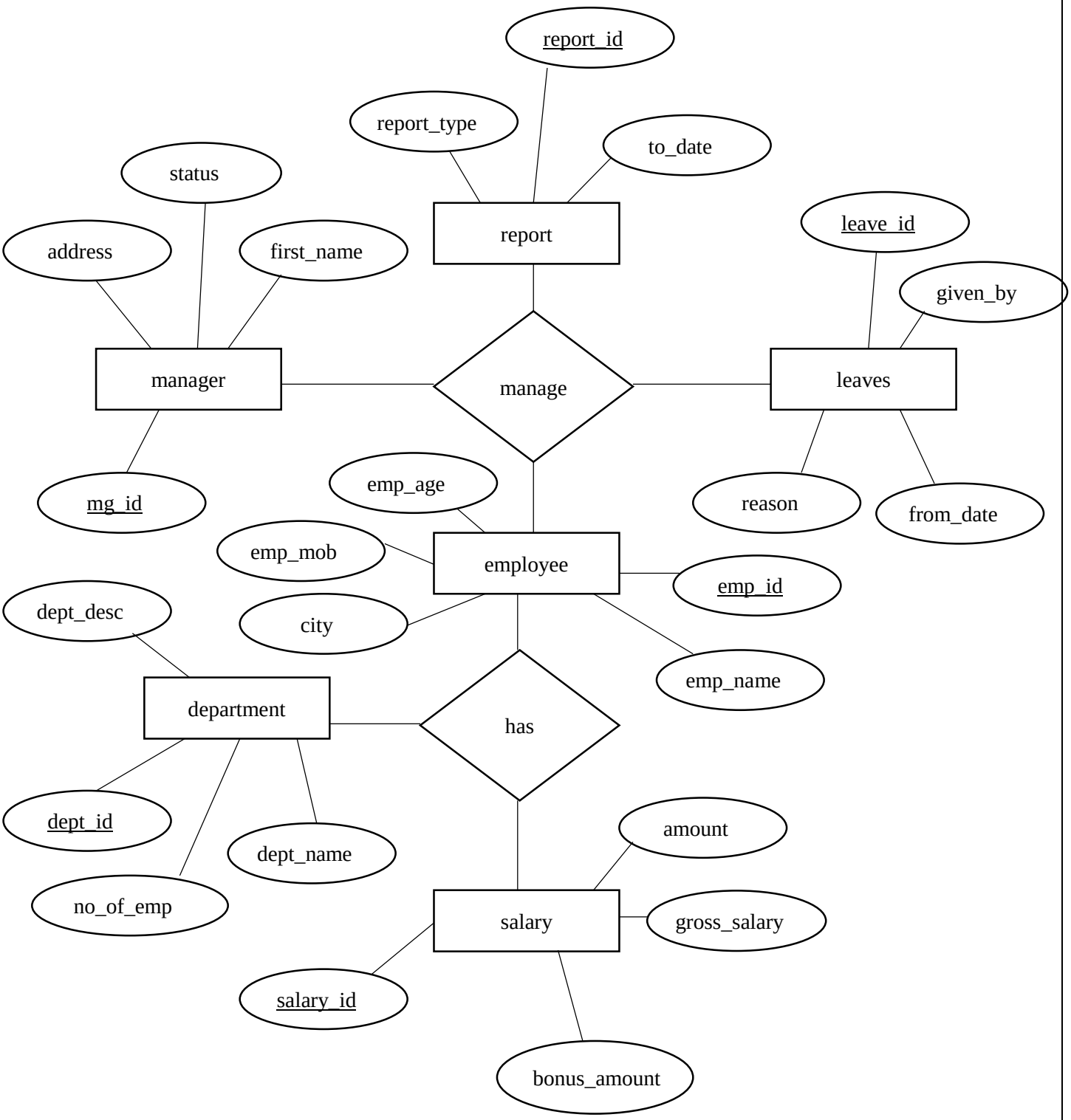
e) department

S.No.	Field	Type	Constraint
1	dept_id	int	primary key
2	dept_name	varchar(50)	-
3	dept_desc	varchar(100)	-
4	no_of_emp	int	-
5	created_by	varchar(50)	-
6	created_on	date	-
7	modified_on	date	-
8	company_id	int	foreign key

f) salary

S.No	Field	Type	Constraint
1	salary_id	int	primary key
2	employ_id	int	foreign key
3	amount	float	-
4	gross_salary	float	-
5	tax_deducted	float	-
6	bonus_amount	float	-
7	annual_salary	float	-
8	created_on	date	-
9	created_by	varchar(50)	-

3.2 Entity Relationship Diagram



Chapter 4 : Testing

Testing is the process of evaluating an application or system to detect defects, bugs, errors and other issues that may affect its quality, reliability, or functionality. It involves running the application in a controlled environment to verify that it behaves as expected, and comparing its actual results against its intended results. The purpose of testing is ascertaining that an application fulfills the requirements and specifications outlined by its users or customers and executes its designated tasks consistently, reliably, and efficiently. In this context, three testing approaches are employed to verify whether the developed system aligns with the specified requirements.

4.1 Unit Testing

Unit testing is crucial aspect of the testing process, focusing on evaluating individual code components and fulfill their intended purposes. In the employee management project, the following units have undergone individual testing:

Test Case ID	Section	Element Name	Test Data	Expected Result	Actual Result
01	Admin Login	Username, Password	No Data	Please fill in this field	Test Case Passed
		Username, Password	Administrator/*****	User not registered	Test Case Passed
		Username, Password	admin/*****	Successfully logged in	Test Case Passed
02	Employee Login	Username, Password	No Data	Please fill in this field	Test Case Passed
		Username, Password	abc/********	User not registered	Test Case Passed
		Username, Password	abc@gmail.com / ********	Successfully logged in	Test Case Passed

03	Employee Registration	First Name, Last Name ,DOB, Gender, Email ,Phone No., Password, Confirm Password	No Data	Please fill in this field	Test Case Passed
		First Name, Last Name ,DOB, Gender, Email ,Phone No., Password, Confirm Password	Abc/345/3234/male/abc@/13491/****/****	Error occurred.	Test Case Passed
		First Name, Last Name ,DOB, Gender, Email ,Phone No., Password, Confirm Password	Abc/Bcd/01-01-2000/male/ abc@email.com/9999999999/ ********/********	Registered Successfully..	Test Case Passed

4.2 Functionality Testing

We check all the functionality of the Employee Management System are working as expected. For example, verify that admin can browse through different specialities of employees available.

Verify that individuals can successfully create accounts. Test login and authentication mechanisms to ensure individuals can access their accounts securely. Test the process of adding employees, assigning departments, add and generate reports of employees, monitoring leaves of employees. Ensure that employee can be assigned to specific department.

Verify that reminders are sent on time and contain accurate information.

Confirm that employee data is stored securely and that the system complies with relevant data privacy regulations.

4.3 Usability Testing

Evaluate the user experience of EMS. Ensure that it is easy to navigate, and employee can find what they are looking for quickly. Test Employee Management System is accessible to all users.

Start by defining specific objectives for the usability testing. What aspects of the system's usability do you want to evaluate? For example, you might focus on the ease of employee registration, navigation, or user interface design.

Usability testing is an ongoing process, and it should be integrated into the development cycle to continually refine and enhance the online employee management system user experience. Regular testing and user feedback play a vital role in ensuring that the system is user friendly , meets the conditions of its users.

4.4 Performance Testing

We check the Employee Management System performs perfectly under different scenarios such as high traffic congestion, slow speed of internet, or multiple simultaneous employees requests. This can be done by simulating these conditions and measuring the response time of the Employee Management System.

Start by defining clear performance goals and criteria for the system. Determine what level of performance is acceptable, such as response times, resource utilization, and error rates.

Common metrics include throughput, concurrent user capacity, response time, and resource utilization (CPU, memory, and bandwidth).

Here are the results of response time for different actions :

S.No.	Action	Response Time (in Sec)
1	Bulk Upload Excel File For Employee Insertion	2.2
2	Report Generate	1.4
3	Apply for Leave	1.1
4	History of Salary	1.2

4.5 Compatibility Testing

Ensure that the Employee Management System works well across different devices, operating systems, and web browsers. Test it on various devices and browsers to check for compatibility issues.

Determine the devices and operating systems (e.g., macOS, Windows, iOS, Android) that are most relevant to your user base.

Access the system on various devices (e.g., different screen sizes, resolutions, and orientations) to verify that the user interface adapts appropriately.

Access the system by using specified web browsers to insure that it displays correctly and functions properly on each. Pay attention to variations in rendering and performance.

Assess the system's compatibility with different operating systems, ensuring that it functions consistently and without issues on each.

Compatibility testing is an ongoing process, as new devices, browsers, and operating system versions are regularly introduced. Ensuring the Employee Management System is compatible with a wide range of platforms is essential for providing a positive user experience.

Test Scenario	Element Name	Element Type	Input	Expected Result	Actual Result	Test Result
1	Device Compatibility	Responsiveness on different devices	Checking Responsiveness on devices for e.g., Laptops, tablets, Smartphones	Website will adapt different screen sizes on different devices without any disbalancing	As expected, the website is full responsive and working perfectly	Passed
2	Operating System Compatibility	Checking website behavior on different operating systems	Working on different Operating Systems e.g., Android systems, macOS, iOS, Windows, etc.	There shouldn’t be any changes in website Designing, Working, Accessibility and Performance speed, while switching the Operating System	As Expected, The Website is working all same even on different Operating System expect Linux operating system	Passed
3	End-user Security	Data Security	Testing security measures of users	The logged in user will be able to see his/her own	As Expected, Details of login Email is shown, no	Passed

				details related information only or correct userprofile is opened for user while logging in	details of other user are visible to all. Hence Secured	

4.6 System Testing

System testing is a type of software testing that evaluates the entire system including all its components. Tests how the different component of the application navigate to another component. Verify that only user can able to access the user module. Verify that user dashboard has all the required option to manage all types of data.

Test Case ID	**Description**
Test Case 1	Only authorized user can login
Test Case 2	Only the login user can view dashboard
Test Case 3	Verify that user dashboard has all the required option to manage all the types of data

Chapter 5 : Implementation

Firstly, we need to install some IDE and other software for implementing our project successfully which are as follows: -

5.1 Sprint Tool Suite

i. Go to the official Spring Tool Suite website https://spring.io/tools
ii. Click on the "Download" button for the STS version you want to install.
iii. Choose the components you want to install, such as Java, Spring boot, and tools.
iv. Click "Install" button to start installation.
v. Follow the installation wizard and select the options that suit your needs.

5.2 Java Development Kit

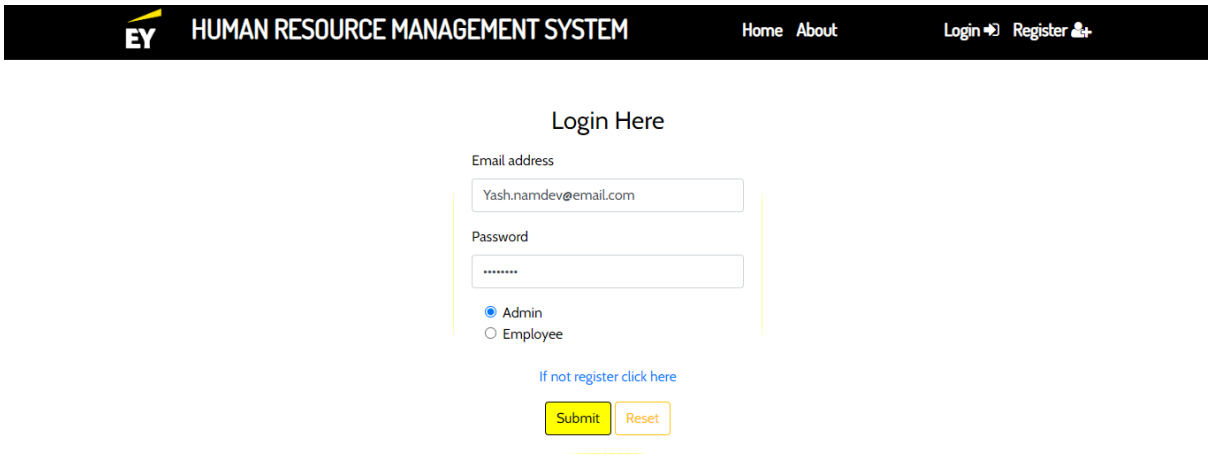
i. Setup the Java development Kit like jdk-8u121. Choose the integrated development environment or code editor for writing Spring Boot code, such as Spring Tool Suite.

5.3 MySQL Workbench Community Edition

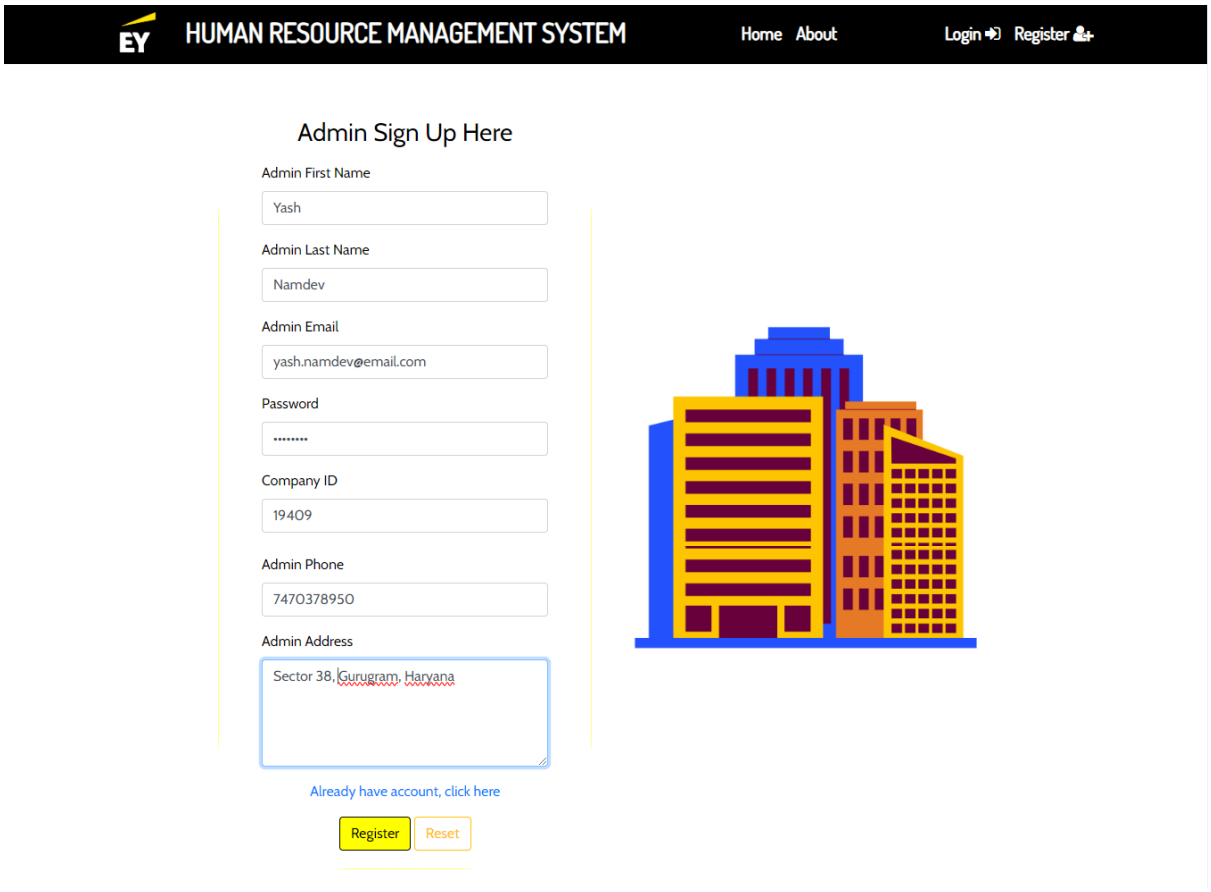
i. The project involves interacting with the database, design the database schema. Determine the tables, fields and relationships between them. Choose the database management system (DBMS) such as MYSQL Workbench 8.0 CE.
ii. Create the necessary Entity Class and their corresponding Repository interface files in a STS to handle the connectivity of database to the client side. Implement the core functionality using Thyme leaf, including handing forms, processing user inputs and interacting with database. Use the HTML and CSS to create interface.

Chapter 6 : Sample Forms and Report

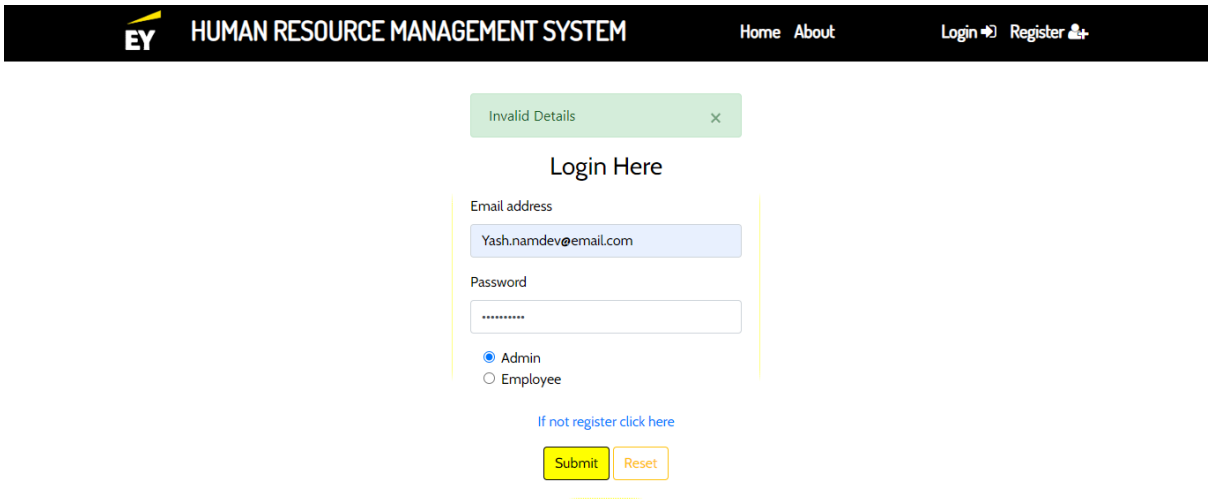
6.1 Login Page



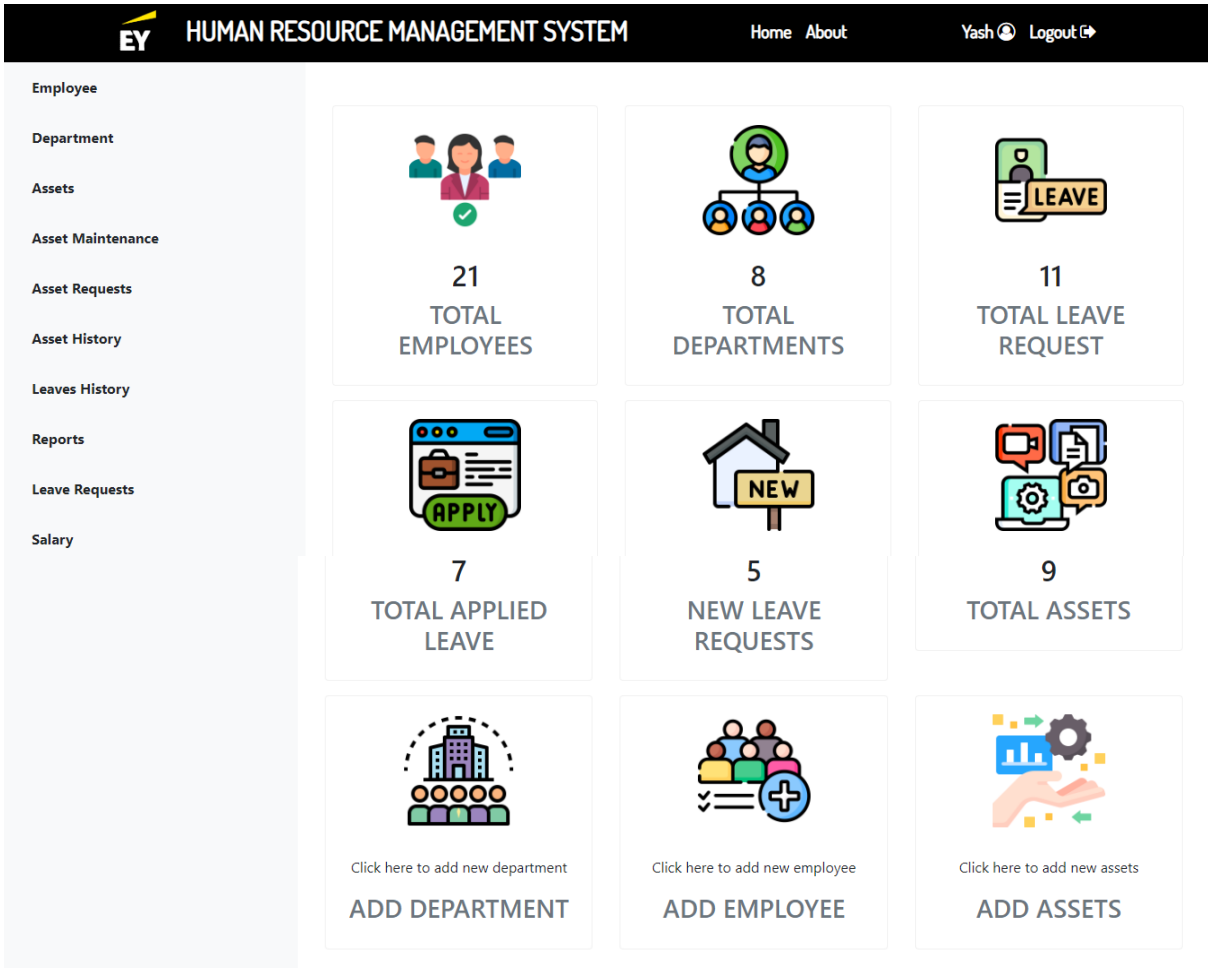
6.2 Register Page



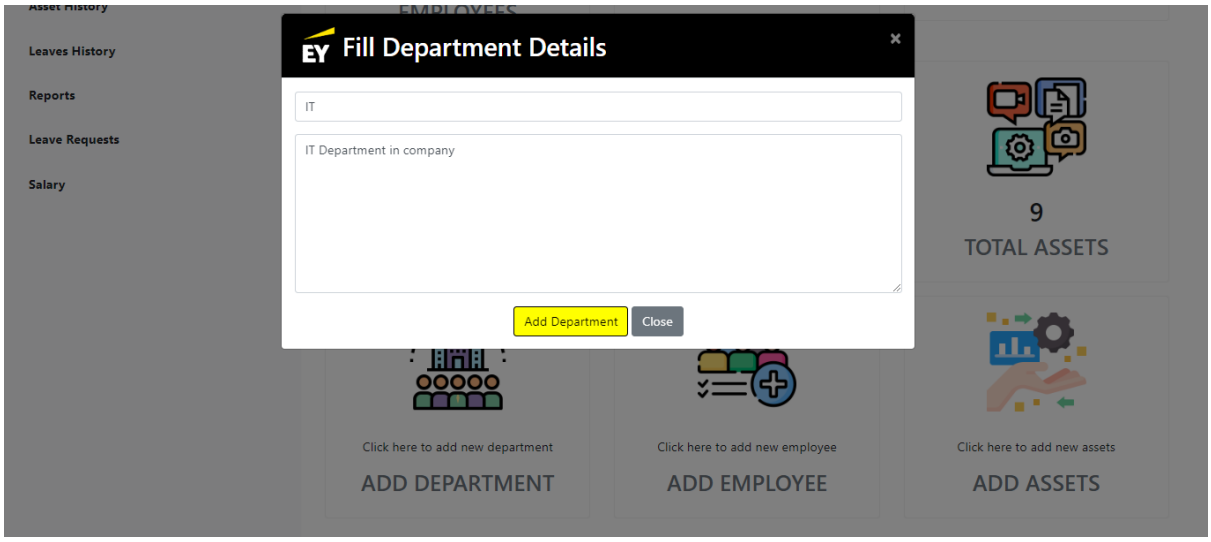
6.3 Login with Invalid Details



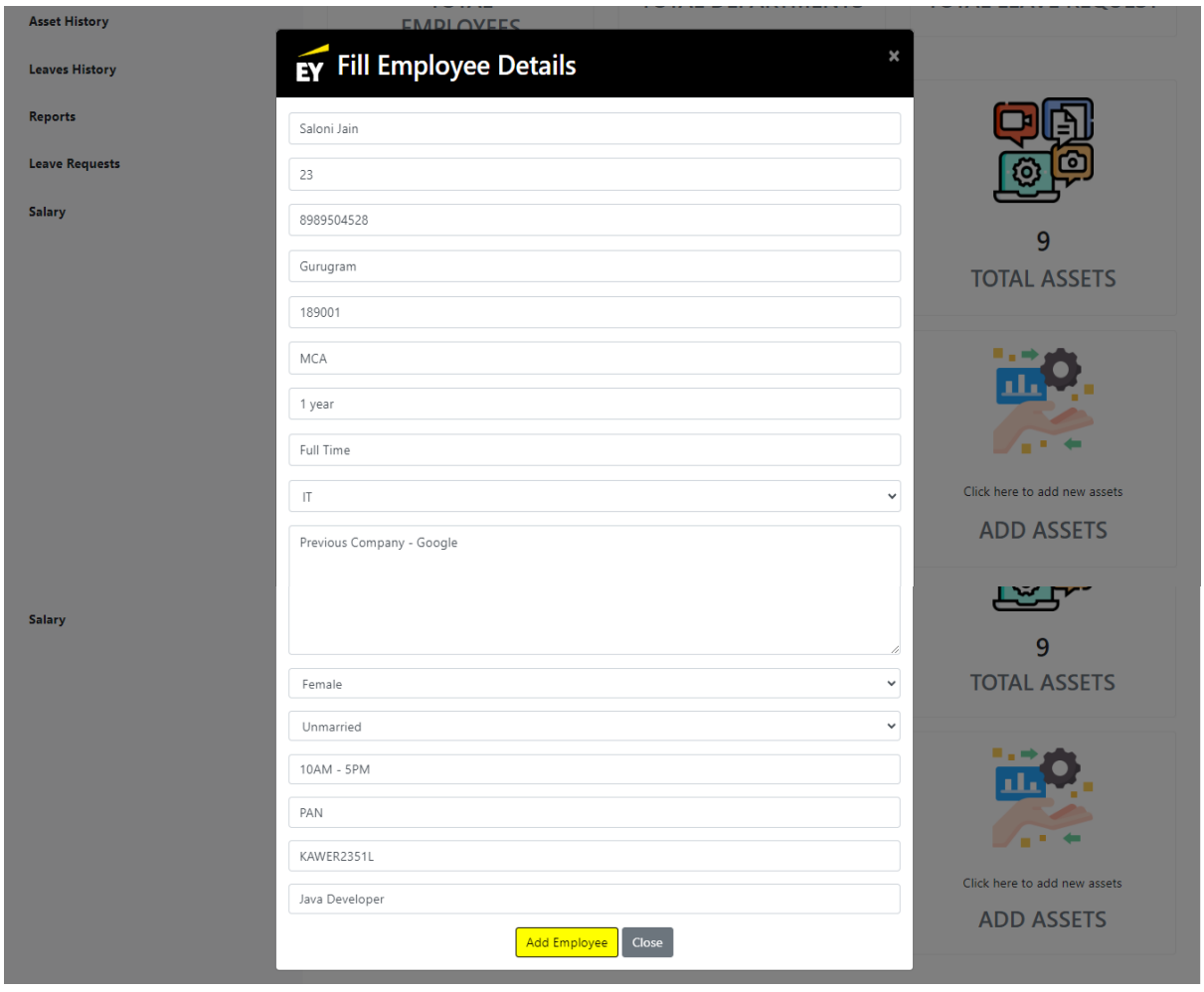
6.4 Admin Dashboard



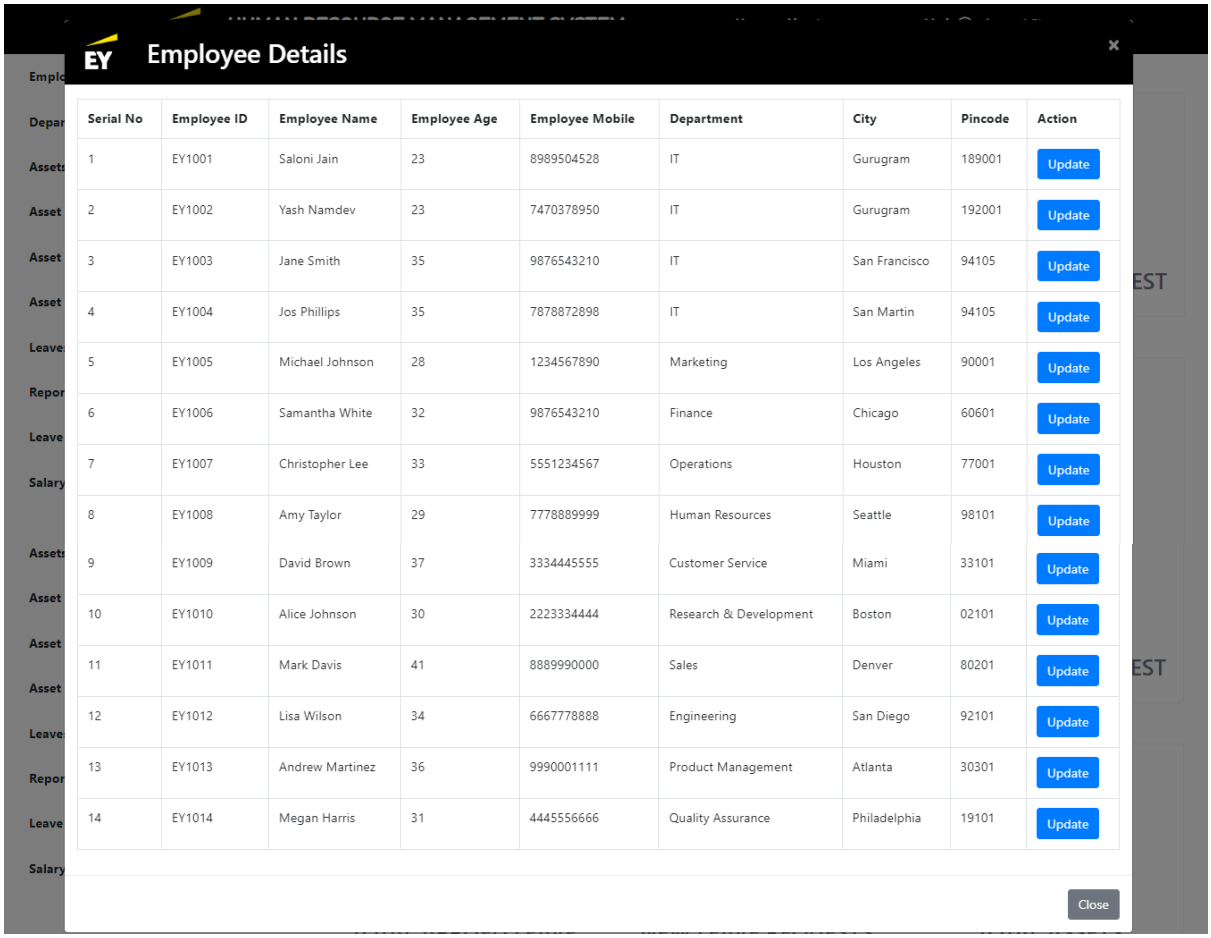
6.5 Add Department Form



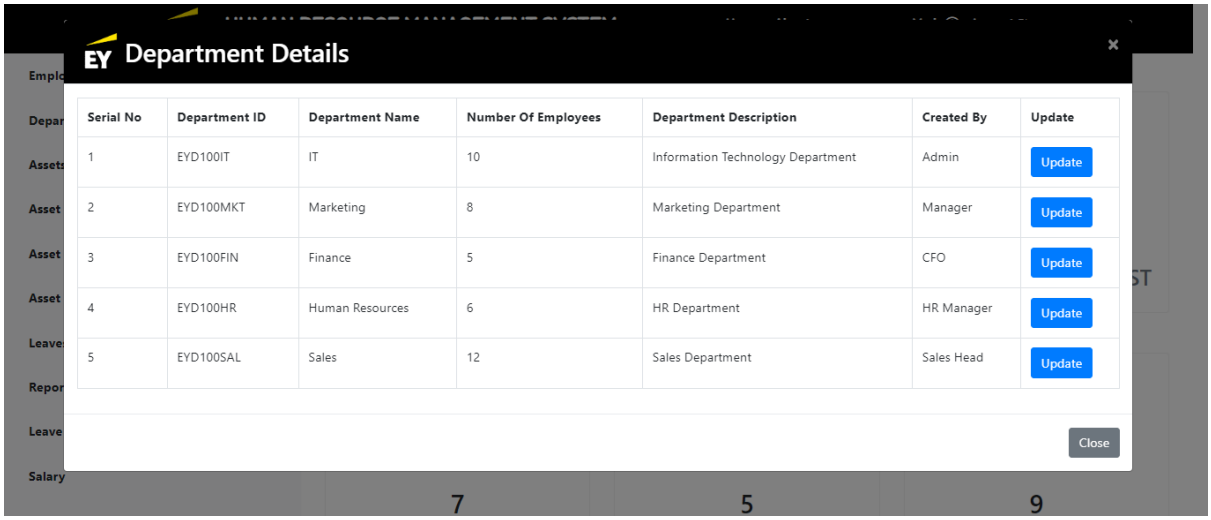
6.6 Add Employee Form



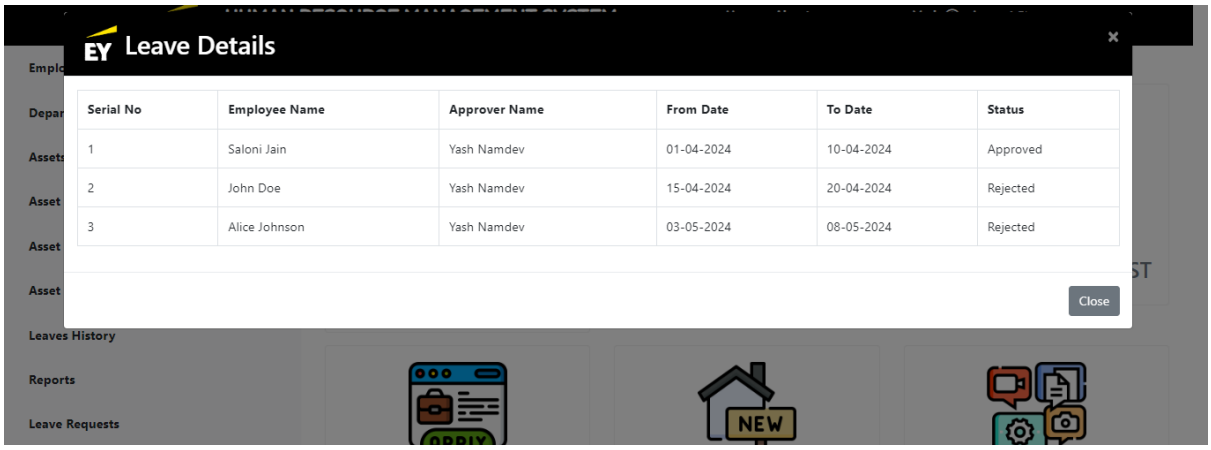
6.7 Employee Details Page



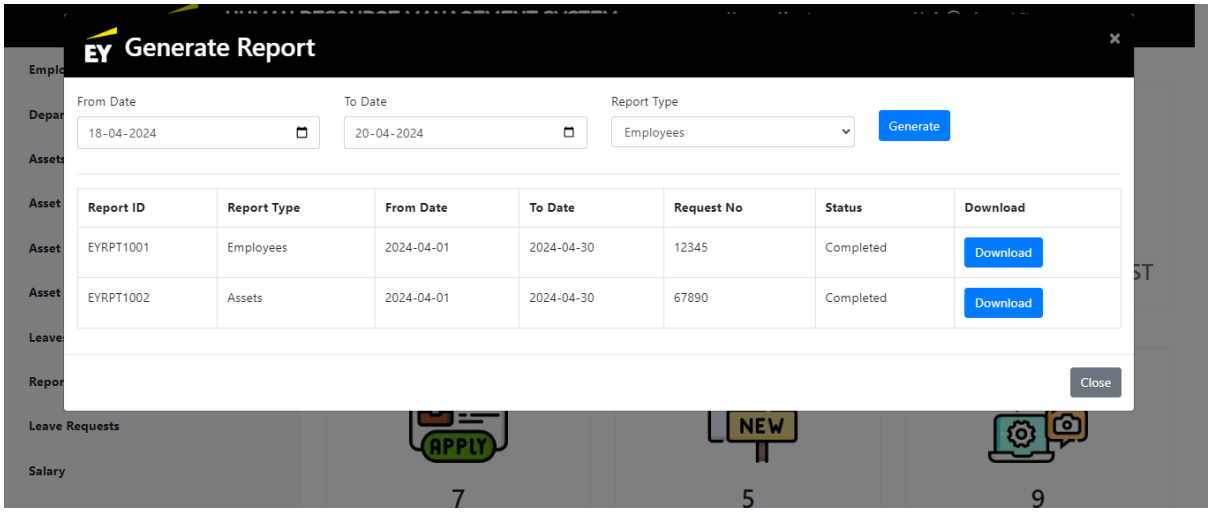
6.8 Department Details



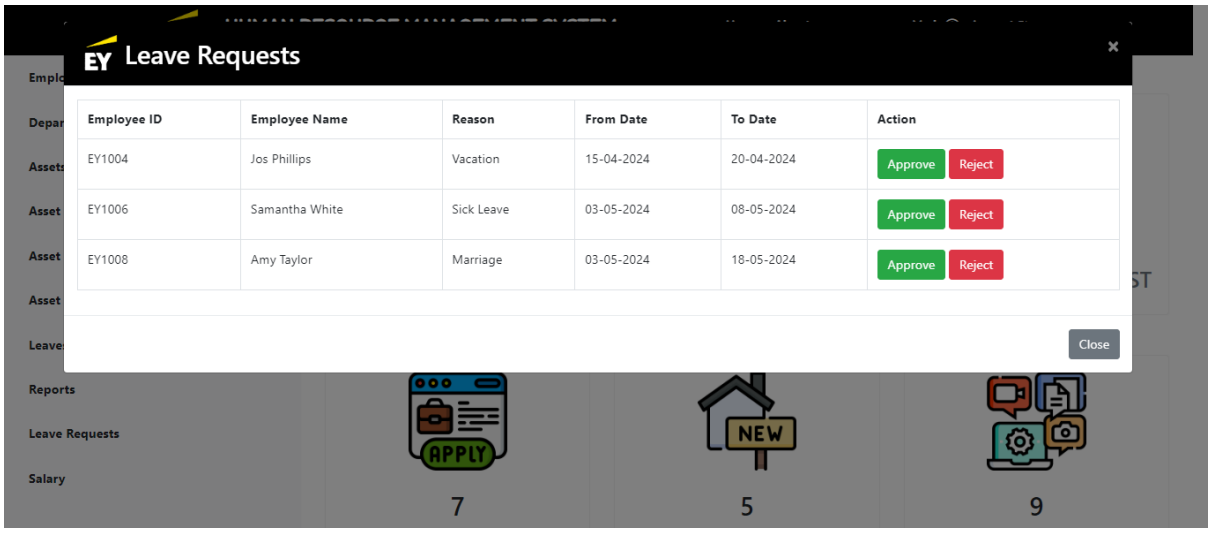
6.9 Leaves Details



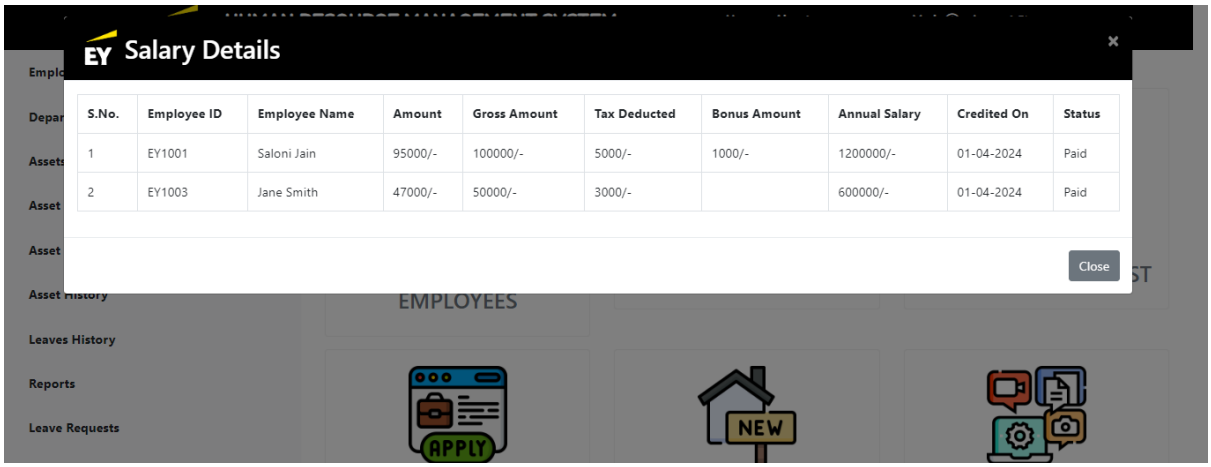
6.10 Generate Report



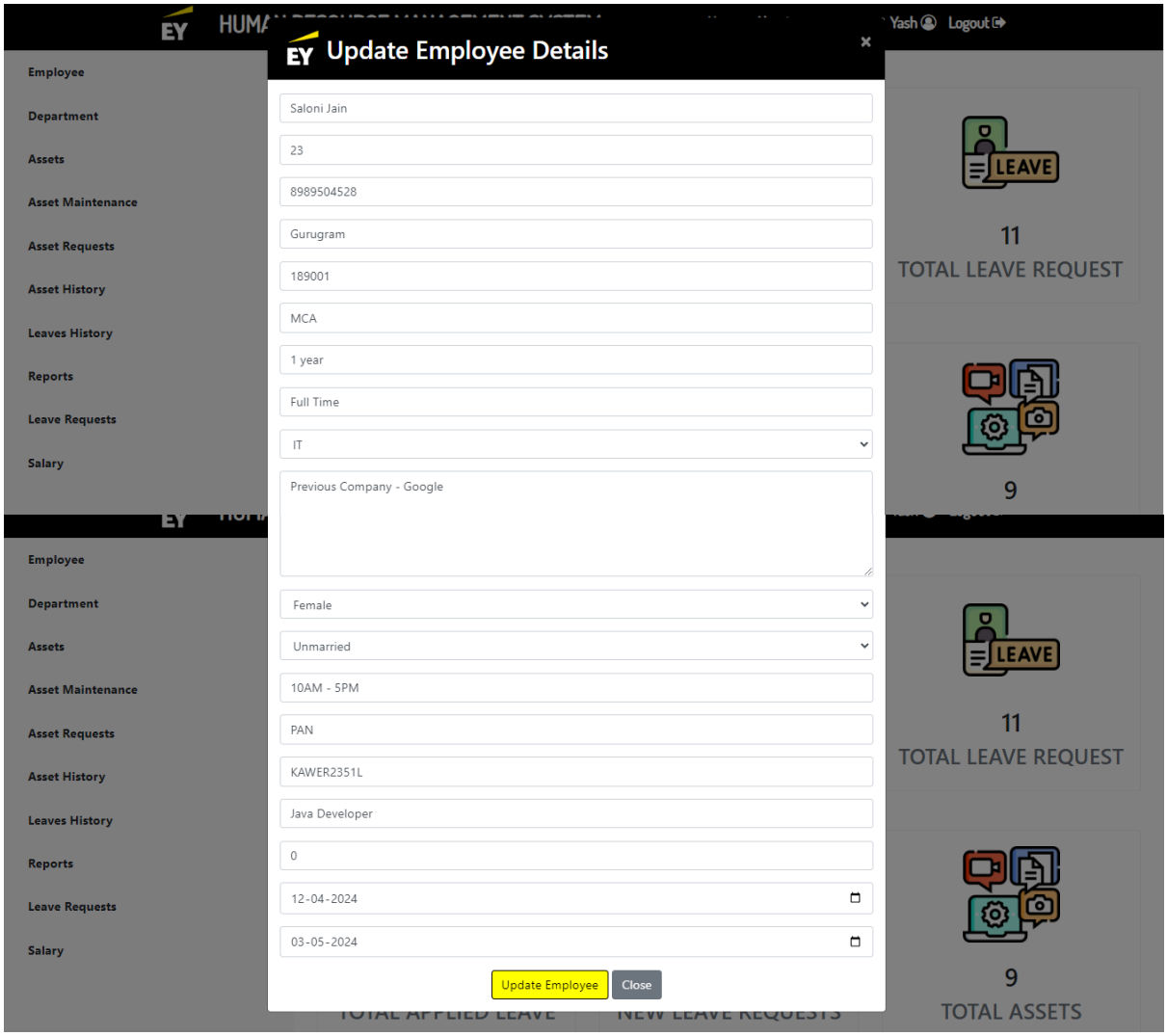
6.11 Leaves Request



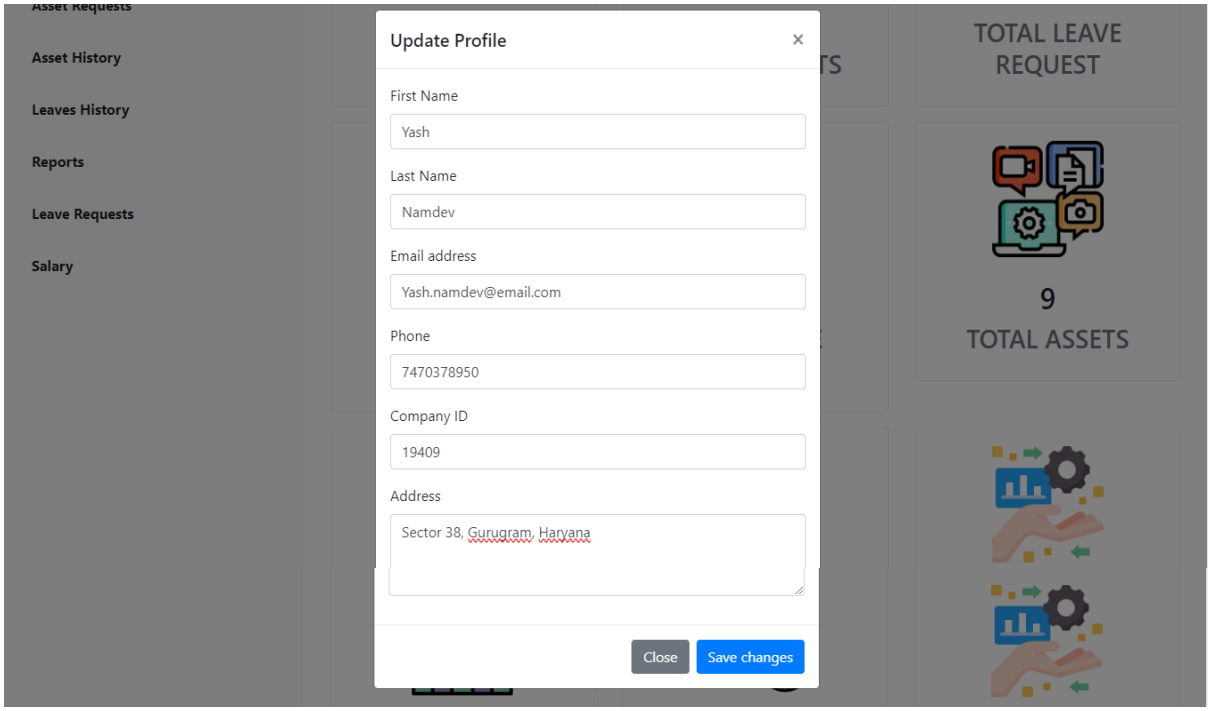
6.12 Salary Details



6.13 Update Employee



6.14 Update Profile



Chapter 7 : Conclusion And Future Scope

Employee Management Tool addresses the identified challenges and enhancing the capabilities of our employee management system is paramount for ensuring organizational efficiency, agility, and success in today's dynamic business landscape. By leveraging advanced analytics, streamlined processes, and user-friendly interfaces, we can empower HR professionals and organizational leaders with the insights and tools needed to make informed decisions and optimize workforce management strategies. Moreover, prioritizing data security, scalability, and adaptability will fortify our system against emerging threats and position it as a reliable cornerstone of organizational growth and sustainability.

Through seamless integration, intuitive interfaces, and robust analytics, our system becomes more than just a tool; it becomes a catalyst for organizational success. As we forge ahead, let us remain steadfast in our pursuit of excellence, continuously refining our system to foster a culture of engagement, growth, and innovation.

In conclusion, our employee management system represents more than just a technological solution; it embodies our commitment to nurturing a thriving and engaged workforce. By addressing the challenges outlined and leveraging the opportunities for improvement, we pave the way for greater efficiency, transparency, and employee satisfaction. As we continue to refine and innovate within our system, we must remain vigilant in our pursuit of excellence, keeping a keen eye on emerging trends and evolving needs. Through collaboration, continuous feedback, and a shared vision of success, we can transform our employee management system into a cornerstone of organizational excellence. Let us embrace this journey with enthusiasm and determination, knowing that our efforts today will shape the future of our workforce and propel our organization towards continued growth and success. Here are the benefits of the employee management system

Enhanced organizational efficiency and productivity through streamlined processes and automation. Improved decision-making with access to advanced analytics and real-time insights into workforce data. Increased employee engagement and satisfaction by providing self-service tools and access to important information.

Effective talent management through centralized employee records, performance tracking, and succession planning. Better compliance with regulations and policies by maintaining accurate and up-to-date employee data. Cost savings through reduced administrative tasks, paperless processes, and optimized resource allocation.

Enhanced communication and collaboration among employees and departments through integrated communication tools.

Performance tracking and evaluation: Enables the tracking of individual and team performance metrics, facilitating fair and transparent performance evaluations and goal-setting processes.

Training and development: Provides tools for identifying skill gaps, planning training programs, and tracking employee development progress, fostering continuous learning and growth within the organization.

Time and attendance management: Automates time-tracking processes, reducing errors and ensuring

accurate payroll calculations while also allowing for flexible scheduling and remote work arrangements.
Leave management: Streamlines the process of requesting, approving, and tracking employee leaves, ensuring compliance with company policies and labor regulations while minimizing disruptions to workflow.
Succession planning: Identifies and develops future leaders within the organization by assessing employee skills, competencies, and career aspirations, facilitating smooth transitions during organizational changes or leadership transitions.

Future Scope

Looking ahead, there are numerous opportunities for further advancement and expansion of the employee management system to meet the evolving needs of organizations and adapt to changing workplace dynamics. Some potential areas for future development include:
Integration with Collaboration Tools: Integrating the employee management system with popular collaboration platforms such as Microsoft Teams, Slack, or Zoom can streamline communication and collaboration among team members. This integration could enable seamless sharing of documents, scheduling of meetings, and coordination of tasks within the context of HR processes, enhancing productivity and teamwork.
Artificial Intelligence and Predictive Analytics: Incorporating AI and predictive analytics capabilities into the system can give important outcomes for workforce trends, performance patterns, and potential risks. By examining historical data and identifying patterns, the system can help HR professionals make more informed decisions regarding recruitment, retention, training, and talent management, ultimately driving strategic workforce planning and optimization.
Employee Well-being and Engagement: Expanding the system to include modules focused on employee well-being and engagement can provide the best work culture and improve employee needs. Features such as wellness programs, employee feedback surveys, recognition and rewards systems, and mental health resources can contribute to a healthier, more engaged workforce, leading to improved productivity and retention.
Overall, the employee management system represents a critical tool for optimizing HR operations and fostering a positive employee experience. Through continuous innovation and adaptation to emerging technologies and trends, it has the potential to evolve into a comprehensive HR solution that drives organizational success and employee satisfaction in the years to come.

Chapter 8 : Bibliography

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d) https://getbootstrap.com/docs/5.0/getting-started/introduction
e) https://codepen.io/trending

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FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Saloni Jain		Department	CSE(Program:MCA)	
Industry/Organization	SyanSoft Technilogies		Date/Duration	01/01/24-15/01/24	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	Allotment of project, instructions for developing back end through springboot and maintaining database using postgres.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Mr. Rajeev Kumar				
Signature of Industry Mentor	Rajeev				

SYANSOFT Technologies Pvt. Ltd. Direct

Receiving Date	28/3/24	**Name of Faculty Mentor**	Dr. Parul Saxena	**Sign**	

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Saloni Jain		Department	CSE(Program:MCA)	
Industry/Organization	SyanSoft Technologies		Date/Duration	16/Jan/24 -31/Jan/24	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	Allotment of module (Employee management tool), Perform CRUD operations using springboot, Test API through POSTMAN.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Rajeev Kumar				
Signature of Industry Mentor	Rajeev				

SYANSOFT Technologies Pvt. Ltd.
Director

Receiving Date	28/3/24	Name of Faculty Mentor	Dr. Parul Saxena	Sign	

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Saloni Jain		Department	CSE(Program : MCA)	
Industry/Organization	SyanSoft Technologies		Date/Duration	01/02/2024 – 15/02/2024	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	Data is read and upload from Excel using Postman, download records in ms-excel also done with proper validation.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Rajeev Kumar				
Signature of Industry Mentor	Rajeev				

Receiving Date	28/3/24	**Name of Faculty Mentor**	**Dr. Parul Saxena**	**Sign**	✓

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Saloni Jain		Department	CSE(Program : MCA)	
Industry/Organization	SyanSoft Technologies		Date/Duration	16/02/2024 – 29/02/2024	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	CSV read and download and upload through Postman and also update records and apply structural validation using annotations.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Rajeev Kumar				
Signature of Industry Mentor	Rajeev				

Receiving Date	28/3/24	**Name of Faculty Mentor**	**Dr. Parul Saxena**	**Sign**	

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Saloni Jain		Department	CSE(Program : MCA)	
Industry/Organization	SyanSoft Technologies		Date/Duration	01/03/2024 – 15/03/2024	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	Json read and download and upload through postman and also update records and apply structural validation.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Rajeev Kumar				
Signature of Industry Mentor	Rajeev				

Receiving Date	28/3/24	**Name of Faculty Mentor**	**Dr. Parul Saxena**	**Sign**	

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Saloni Jain		Department	CSE(Program : MCA)	
Industry/Organization	SyanSoft Technologies		Date/Duration	16/03/2024 – 31/03/2024	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	Complete CRUD operation through upload and manually and also maintain audithistory and also done authentication and authentication using Json Web Token (JWT).				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Rajeev Kumar				
Signature of Industry Mentor	Rajeev				

Receiving Date	28/3/24	**Name of Faculty Mentor**	**Dr. Parul Saxena**	**Sign**	

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Saloni Jain		Department	CSE(Program : MCA)	
Industry/Organization	SyanSoft Technologies		Date/Duration	01/04/2024 – 15/04/2024	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	Complete screens and grids with filter and forms using angular, HTML, CSS and bootstrap.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Rajeev Kumar				
Signature of Industry Mentor	Rajeev				

Receiving Date	16/4/24	**Name of Faculty Mentor**	**Dr. Parul Saxena**	**Sign**	