IACSD

INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT AKURDI, PUNE

Documentation on

"Employee Management System"

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Submitted by

Group No: 103

Shinde Darshana Kishor Roll No: 219176

Simi Mariya Vincent Roll No: 219196

Prashant Karhale
Center Coordinator

Mr. Swapnil Golegaonkar
Project Guide

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1.Introduction

Employee Management System is an essential software designed to keep track of employee information in any organization. It securely stores the employees' personal as well as work-related details. This Project simplifies the task of maintain records because of its user friendly nature. The application is simplified as much as possible to avoid errors while entering the data. It also provides error messages while entering invalid data. No prior knowledge is required to use this system.

Moreover this application is designed for the particular need of the company to carry operations in a smooth manner. Only admin has the access to add new employee's data. Admin can see and update each and every employee record.

Database will store all the details of employees such as name, designation, address, salary, mobile number etc. This application enables employees to apply for leave and check performance of employees.

Document Purpose:

The advancement in Information Technology and internet penetration has greatly enhanced various business processes and communication between Employees, HR/Admins and their Industry.

Employee Management System (EMS) reduces the burden of HR department of any organization. It makes the task of storing and updating the data effortless. It assists HR to keep track of employee information such as salary details, personal details and more.

Problem Statement:

Existing system for Employee Management is based on our traditional way keeping records and details on paper and registers. Access of these details and papers are not granted to common member in absence of the authority. It is hard to manage all the details system with pen and paper. It gets really hard to maintain the records and then keep track of

past records. Hence this system is proposed to overcome the flaws of the existing system and giving power to the admin of the Employees data so that he/she will be able to manage the employee records and department details easily.

Product Scope:

This project traverses a lot of areas ranging from business concept to computing field, and required to perform several researches to be able to achieve the project objectives. The area covers include:

- J2EE Technology used for the development of the application.
- Employee and admin/HR will be able to use this system effectively.
- Web-platform means that the system will be available for access 24/7 except when there is a temporary server issue which is expected to be minimal.

Aims & Objectives:

Specific Goals are:

1) No prior knowledge is required to use this system. This System is made as user-friendly.
2) EMS is useful for keeping all employees information so it helps admin to manage each and every employee details.
3) We provide up to date information that is not possible manually.
4) The objective of project is to make it easy, simple, reliable, user-friendly and corrective. Moreover less time consuming as compared to manual work.

2.Overall Description

Product Perspective:

Existing System Function:

The existing system of the Employee Management System are based on our traditional way of keeping records and details on paper and registers. This leads to the Un-Security of all the information stored and leads to the hassle, whenever the retrieval of the data or some information has to be done. It becomes very hard to manage all the contents by using pen and paper. It becomes tedious job to maintain the records and to keep the track of the past records as well as existing records.

Proposed System:

The Employee Management System provides the feature for Admin and Employee:-

- Record Management:

It will provide facility to admin keep records of every employee.

- Performance Management:

It will provide facility to admin to update performance as employee of the month and employee can check employee of the month.

- Leave Management:

It will provide facility to admin to approve leave of employee and employee can apply for leave.

Benefits of Employee Management System:

1. This System helps to keep records of employees.

2. Keep records of leaves of employee.

3. It is easy to use.

4. It saves time, money and labor.

5. Easy to maintain performance of employee.

Uses and Characteristics:

a. Admin
   - Admin can login and logout to the system
   - Edit employee details
   - Update employee details
   - Delete Employee details
   - Add performance of employee as Employee of month
   - Update salary details of employee
   - Approve leave of Employee

b. Employee
   - Employee can login and logout to the system
   - Employee can apply for leave
   - Employee can track his/her performance (check employee of the month)

Operating Environment:

Server side:

Web Server	TOMCAT
Server side language	REACT
Database	MYSQL
Web Browser	Google Chrome or any compatible browser
Operating System	Windows or any equivalent OS

Client side:

Web Browser	Google Chrome or any compatible browser
Operating System	Windows or any equivalent OS
RAM	Minimum 1GB
Processor	Intel Dual Core

Design and Implementation Constraints:-

1. This Application will use reactJs, springboot and MySql methodologies.
2. HTTP protocols are used as communication protocols
3. Since EMS is web based application, Internet connection must be established.
4. The Employee Management System will be used on Pcs and will function via internet in any web browser.

3.Specific Requirement

External Interface Requirements:

User Interfaces:-

All the users including the admin will see the same login page when they visit the website. This login form requires the user to enter a valid user email id and password. After successful login the employee will be directed to the home page of the organization. The admin will be able to add, update, delete employee's details.

The user interface will be easy and simple to use. The system will have a simple interface, to eliminate the need of user training for beginner.

Hardware Interfaces:-

In this project no extra hardware interfaces are required. The system will use the standard hardware and data communication resources. This includes, but not restricted to general network connection at the server/hosting site, network server and network management tools.

Application Interfaces:-

Operating System: Windows 10

Web Browser:

The system is a web-based application. Users need a modern web browser such as Mozilla Firebox, Internet Explorer, Opera, or Chrome. The computer must have an Internet connection in order to be able to access the system.

Communication Interfaces:-

This system uses communication resources which includes but not limited to HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.

This application will communicate with the database that holds all the employees information. Users can contact with server side through HTTP protocol by means of a function that is called HTTP Service. This function allows the user to use the data retrieved by server to achieve the request fired by the user.

Functional Requirements:-

This section provides requirement overview of the system. Various functional modules that can be implemented by this system are

1) Login: The user who has already registered can login to the system by entering a valid user email id and password.

2) Sign Up: The user must be sign up into the system in order to access the website.

3) Add employee, Delete employee: The admin can add or remove an employee. The admin can change the salary of the employee.

4) Update employee details: The admin can edit employee details like name, salary etc

5)Performance: Admin can update performance of employee and display employee of the month.

6)Leave: Admin can approve leave of employee and employee can apply for leave.

7) Logout: After performing the necessary task the user can logout of the system.

The term client/server refers primarily to an architecture or logical division of responsibilities, the client is the application (also known as the front-end), and the server is the RDBMS (also known as the back-end).

Non-Functional Requirements:-

There is no performance requirement in this system, because the server request and response to client is totally based on internet connection of end user.

Following Non-Functional Requirements will be there in the insurance of the internet:

- Secure access to user's confidential data.
- 24 X 7 availability
- Portability
- Reusability
- Resource Utilization
- Reliability

4.System Design

Activity Diagram:

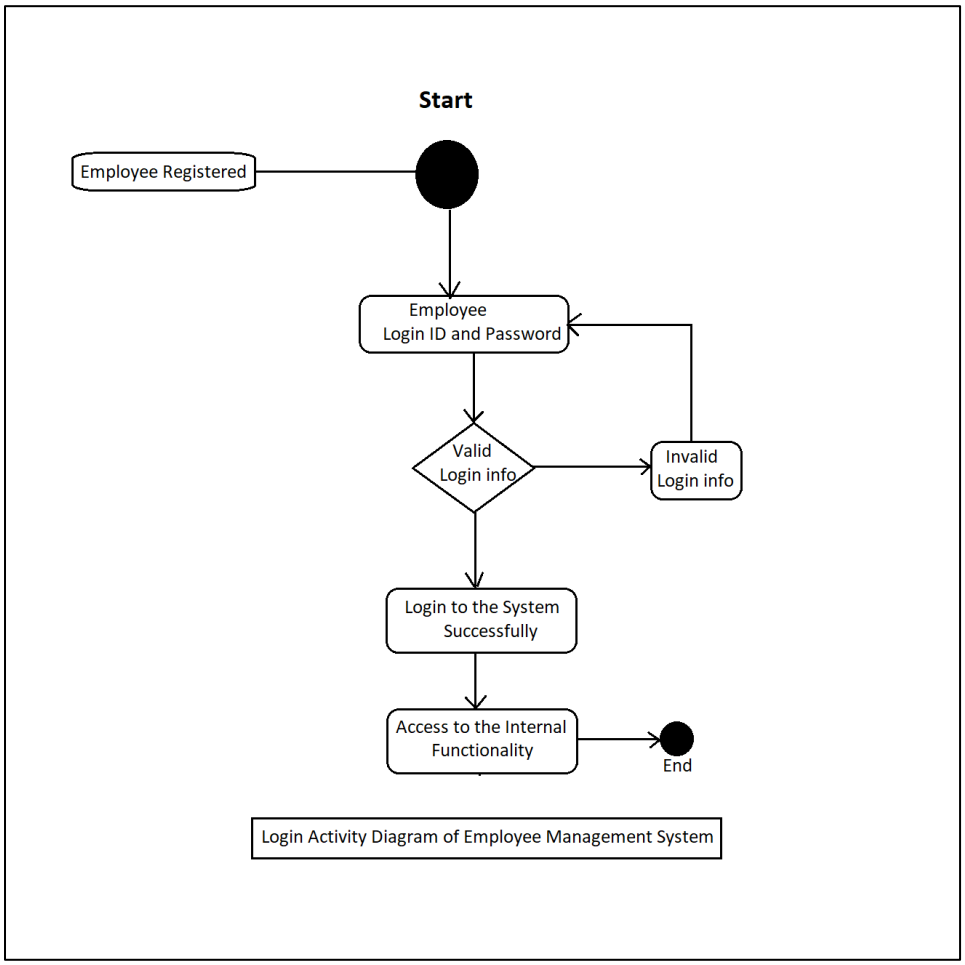


Fig. Login Activity Diagram

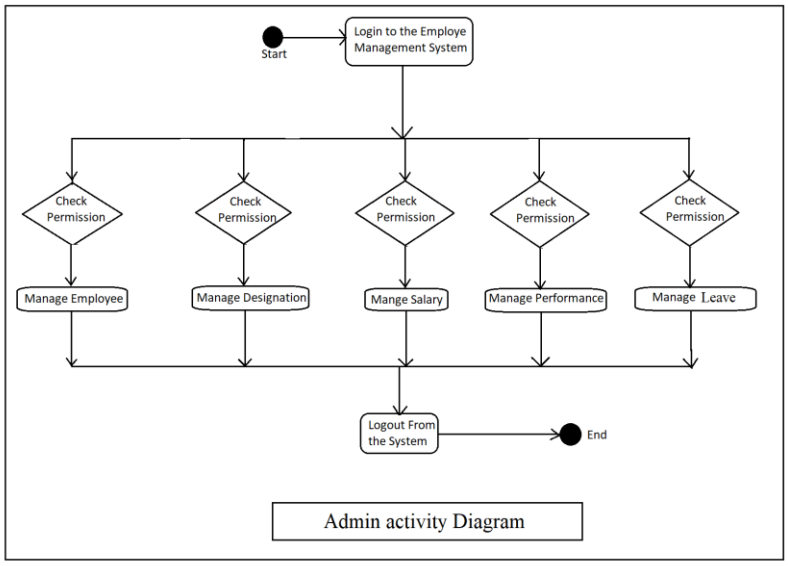


Fig Admin Activity Diagram

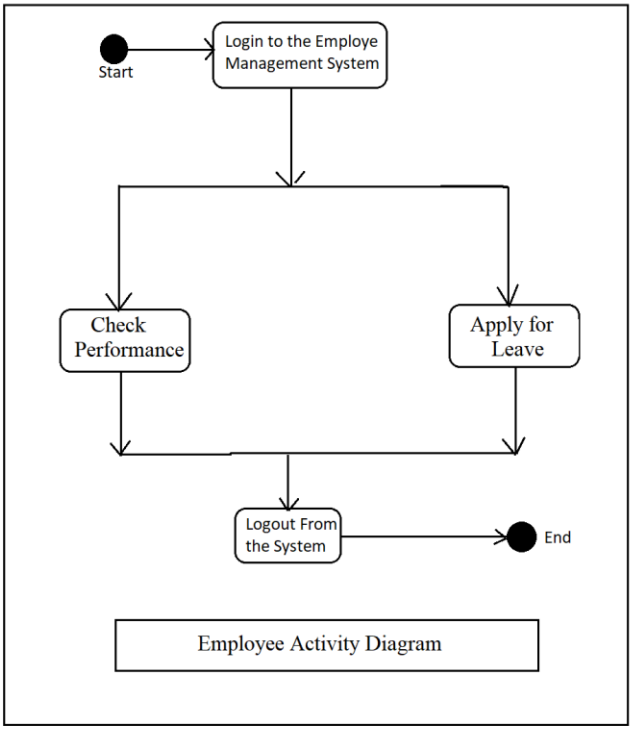


Fig Employee Activity Diagram

Component Diagram:

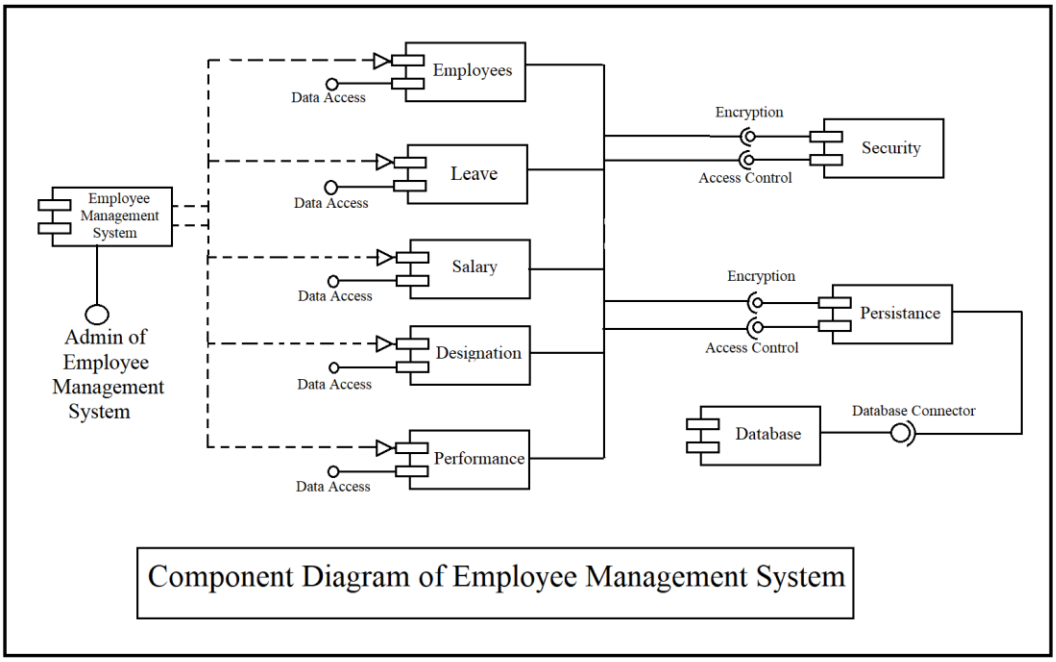


Fig Component Diagram

Data Flow Diagram:

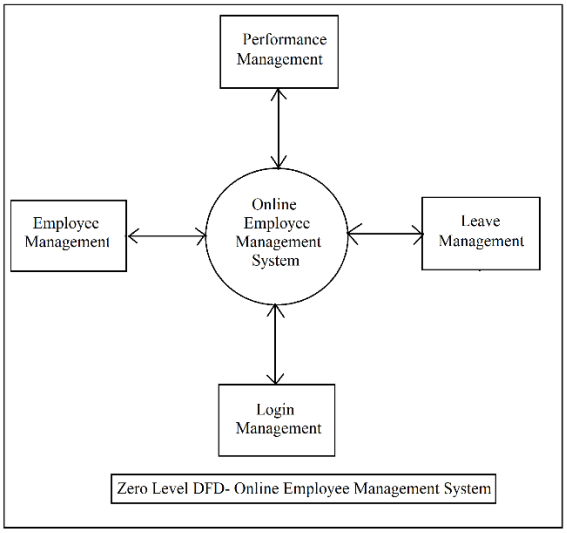


Fig Zero Level Diagram

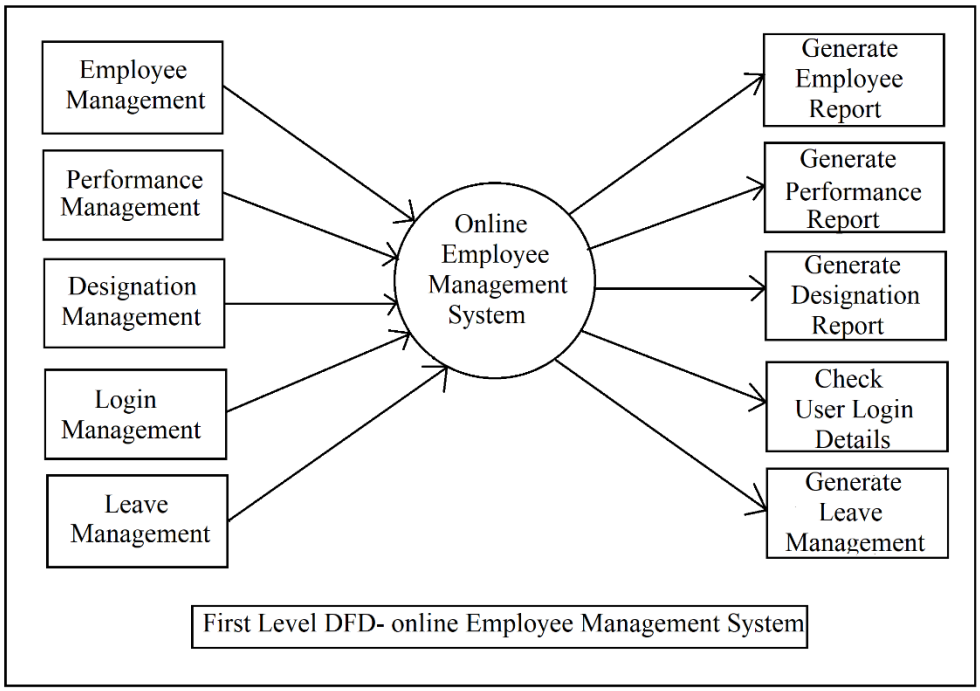


Fig First Level DFD

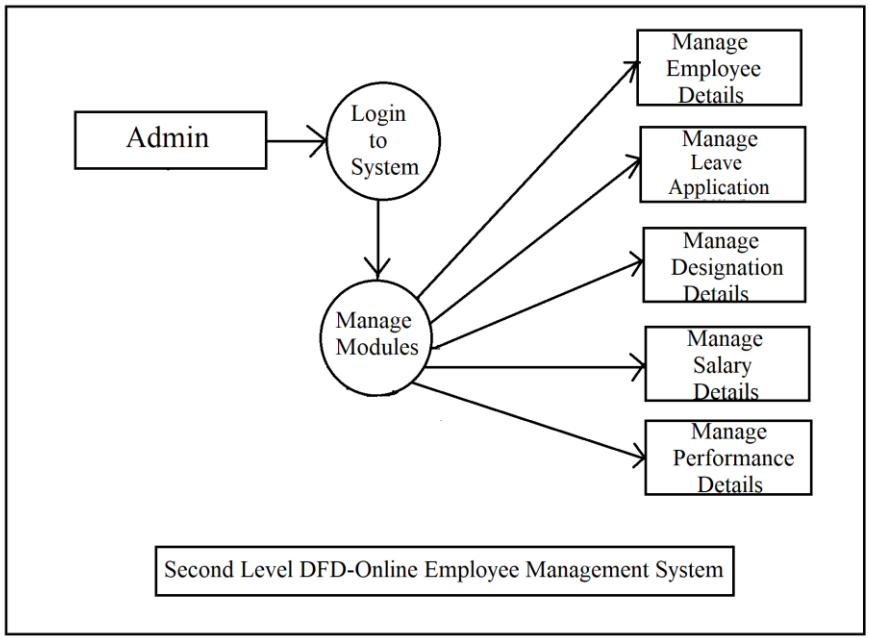


Fig Second Level DFD

Class Diagram:

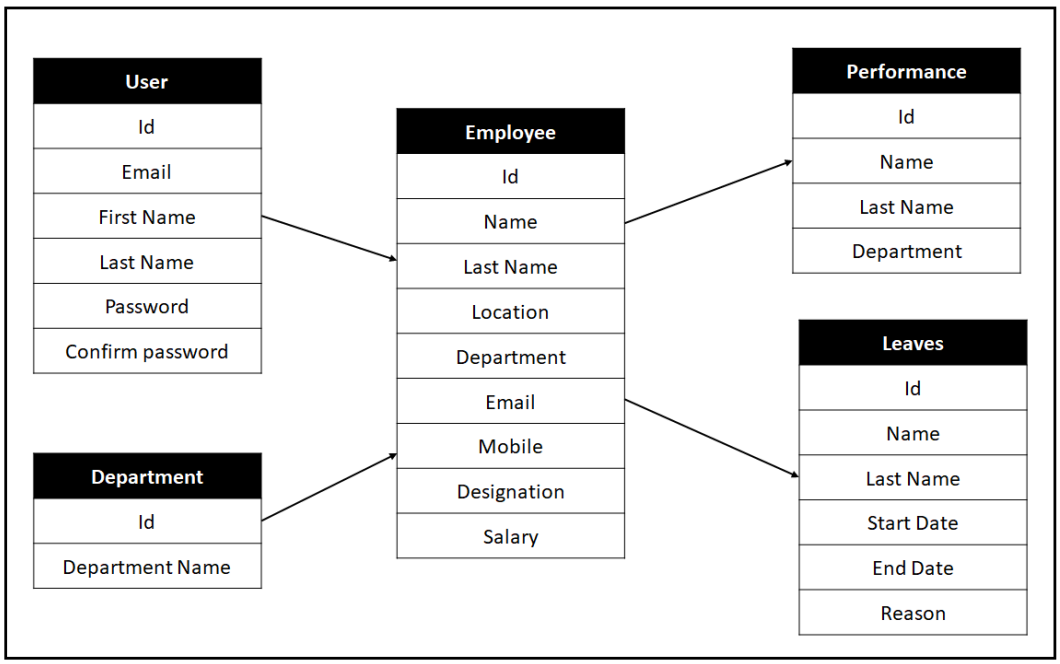
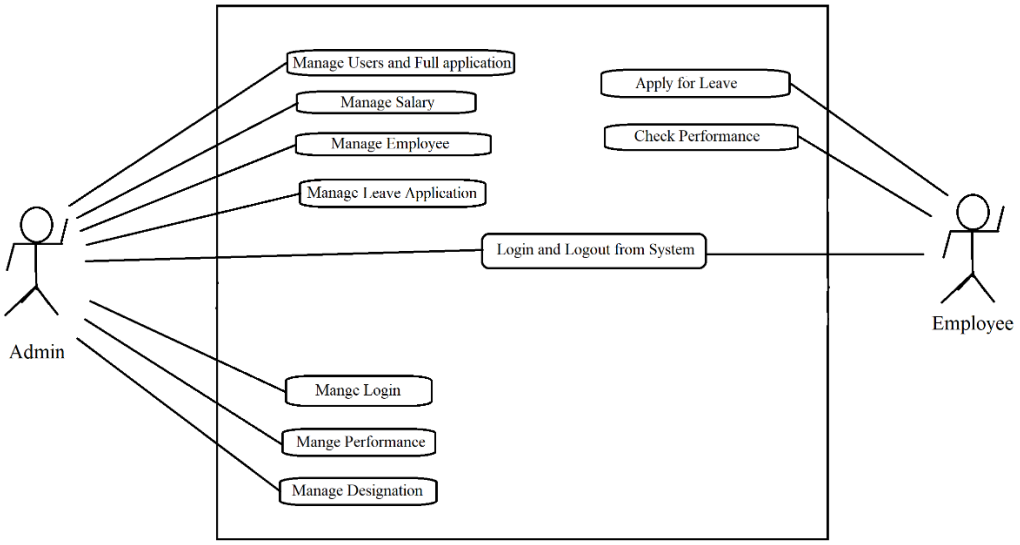


Fig Class Diagram

Use Case Diagram:



UseCase Daigram of Employee Management

Fig Use Case Diagram

ER Diagram:

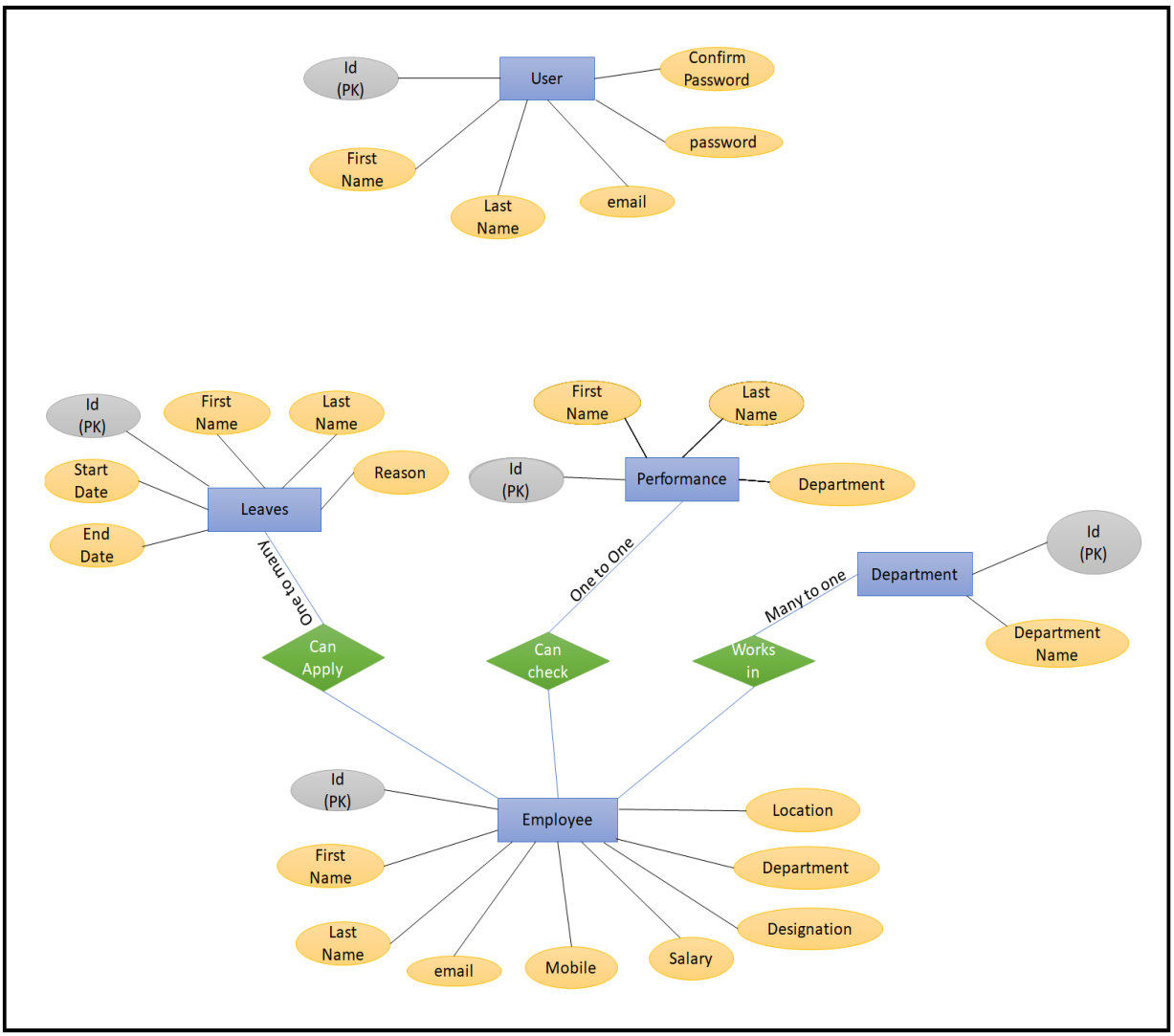


Fig ER Diagram

5.Table Structure

```
mysql> desc tbl_employees;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| id          | bigint       | NO   | PRI | NULL    | auto_increment |
| department  | varchar(255) | YES  |     | NULL    |                |
| designation | varchar(255) | YES  |     | NULL    |                |
| email       | varchar(255) | YES  |     | NULL    |                |
| lastName    | varchar(255) | YES  |     | NULL    |                |
| location    | varchar(255) | YES  |     | NULL    |                |
| mobile      | varchar(255) | YES  |     | NULL    |                |
| name        | varchar(255) | YES  |     | NULL    |                |
| salary      | varchar(255) | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
9 rows in set (0.38 sec)
```

```
mysql> desc department_tbl;
+-----------------+-------------+------+-----+---------+----------------+
| Field           | Type        | Null | Key | Default | Extra          |
+-----------------+-------------+------+-----+---------+----------------+
| id              | int         | NO   | PRI | NULL    | auto_increment |
| department_name | varchar(30) | YES  | UNI | NULL    |                |
+-----------------+-------------+------+-----+---------+----------------+
2 rows in set (0.10 sec)
```

```
mysql> desc user;
+------------------+--------------+------+-----+---------+----------------+
| Field            | Type         | Null | Key | Default | Extra          |
+------------------+--------------+------+-----+---------+----------------+
| id               | int          | NO   | PRI | NULL    | auto_increment |
| email            | varchar(255) | YES  |     | NULL    |                |
| firstName        | varchar(255) | YES  |     | NULL    |                |
| lastName         | varchar(255) | YES  |     | NULL    |                |
| password         | varchar(255) | YES  |     | NULL    |                |
| createdTimestamp | datetime(6)  | YES  |     | NULL    |                |
| isActive         | int          | NO   |     | NULL    |                |
+------------------+--------------+------+-----+---------+----------------+
7 rows in set (0.03 sec)
```

```
mysql> desc leave_tbl;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| id         | int          | NO   | PRI | NULL    | auto_increment |
| end_date   | datetime(6)  | YES  |     | NULL    |                |
| lastName   | varchar(30)  | YES  |     | NULL    |                |
| name       | varchar(30)  | YES  |     | NULL    |                |
| reason     | varchar(255) | YES  |     | NULL    |                |
| start_date | datetime(6)  | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

```
mysql> desc performance_tbl;
+------------+-------------+------+-----+---------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+---------+----------------+
| id         | int         | NO   | PRI | NULL    | auto_increment |
| department | varchar(30) | YES  |     | NULL    |                |
| lastName   | varchar(30) | YES  |     | NULL    |                |
| name       | varchar(30) | YES  |     | NULL    |                |
+------------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

6.Conclusion

Employee Management System is an application to securely store and manage the personal as well as other work-related details of the employees. The EMS helps to eliminate the manual process of managing the data hence saving a lot of time and money.

Future Scope:

The Employee Management System can be used in any organizations like an IT industry or hospitals. There is always a scope of future enhancements.

1. Module to mark the attendance of employee.
2. Module to calculate the salary of the employee.

7.References

- https://spring.io/projects/spring-boot
- https://www.w3schools.com/REACT/DEFAULT.ASP
- https://www.w3schools.com/js/default.asp
- https://www.w3schools.com/sql/default.asp

Acronyms:-

1) EMS-Employee Management System
2) HR-Human Resource