

Employee PayRoll Managment

Team Members

- 1.Balaji M S
- 2.Balaji S S
- 3.Bhukya Dayana Rani
- 4.Mahesh Kulakarni
- 5.Nagarani Modem
- 6.Bhashinge Krishna Vishwanath
- 7.Dipali Hakke
- 8.Sonali Jotiram Kadam
- 9.Ajay Ramayane
- 10.Keerthi Bharadwaj B
- 11.Ravi Teja

Abstract

Employee payroll management system is an Internet-based Java application that automates the working of a company or work center that manage and maintain records of the employees in the different department. The objective of the Employee payroll management system project is to design a scheduling system for a work center. Scheduling is such a tool with which the process of intimating activities and notifications will be easy and even online in the organization where it is installed. But these tasks of scheduling the different activities if manually done whether they may be personal, or official is time-consuming and may lead to confusion if not properly scheduled. The supervisor holds the various activities like sending notifications, mark attendance, and deleting the employees, and on the other hand employees view their details, view schedule or the notifications or any message form supervisor, and view attendance..

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Chapter 1

Introduction

1.1 Introduction to EPM

The proposed project “Employee Payroll Management System” has been developed to overcome the problems faced in the practicing of manual system. This software is built to eliminate and in some cases reduce the hardships faced by the existing system. Moreover this system is designed for particular need of the company to carry out its operations in a smooth and effective manner. This web application is reduced as much as possible to avoid errors while entering data. It also provides error message while entering invalid data. It is user-friendly as no formal knowledge is required to use the system. Human resource challenges are faced by every organization which has to be overcome by the organization. Every organization has different employee and payroll management needs. Therefore I have design exclusive Employee and payroll Management System that are adapted to the organization’s Managerial Requirements.

1.2 Purpose

Main aim of developing Employee Payroll Management is to provide an easy way not only to automate all functionalities involved managing leaves and Payroll for the employees of Company, but also to provide full functional reports to management of Company with the details about usage of leave facility.

We are committed to bring the best way of management in the various forms of EPM. We understand that EPM is not a product to be sold, it is a tool to manage the inner operation of Company related to employee leave and Payroll.

1.3 Scope

This Application works in Multiple PC’s installed on multiple Computers but sharing same database by which users of different department can use it sitting at different locations simultaneously.

“Employee Payroll Management System”

But in future we can make the Application where the database will be hosted in order to manage the all departments which will be located in different places and by keeping domain of Application as Online.

1.4 Benefits

- To improve the efficiency.
- Quickly find out information of an employee details.
- To provide easy and faster access information.
- To provide user friendly environment.

1.5 Definitions, Acronyms, Abbreviations

MYSQL Server is a model database produced by Microsoft.

SRS - Software Requirements Specification.

EPM - Employee Payroll Management

1.6 Project Overview

The following subsections provide the complete overview of the software specifications requirements documentation for the product Employee Payroll Management. The entire SRS is documented in view of User and the following sub sections are arranged to give a complete outlook of the software, its perspective, features, system requirements and users know how it is.

Chapter 2

Overall description

2.1 Product perspective

This software is developed specifically to cater the company employees leave management, is totally self contained and works efficiently. It provides simple database rather than complex ones for high requirements and it provides good and easy graphical user interface to both new as well as experienced user of the computer.

2.2 Product functions

2.2.1 Admin Module

- Login to Portal
- Create Admin Account
- Add/Edit/delete the employees.
- Add/Edit/delete the schedule the work of the employees.
- Add/Edit/delete mark the attendance of employees
- Add/Edit/delete Leaves and timesheet of the employee.
- Add/Edit/Delete the Salary of the employee

2.2.2 Employee module

- Register into the application
- Sign into the application to maintain the record of activities.
- Change Password
- Update Profile
- Registration according to category (developer, tester, and designer)

2.2.3 Work Schedule module

- Managing on work

2.2.4 Attendance module

- Leave
- Attendance
- Managing Leave

2.2.5 Salary module

- Allowance
- Deduction
- Pay Slip

2.3 User Characteristics

2.3.1 End Users

- No specific knowledge or skills are required from the end user.
- End user should have basic idea about computer operations and database.

2.3.2 Administrator

- Administrator must be having good knowledge of database management system.
- Administrator must be capable to manage user rights.
- If the network connection does not work properly than our system should not work as intended.
- Also, that is assumed that the product is installed properly at web server.
- This system will not take care of any virus problem, which might occur either on the client or the server system. Avoiding the use of pirated software and ensuring that floppies and other removable media are scanned for viruses before use could minimize the possibility of viral infection.
- Manual interfaces cannot be fully avoided. Documented proofs like data entry of employees etc. will have to be verified by the concerned management staff before entering it into the computerized system.

2.4 Assumptions and Dependencies

Assumptions:

- The code should be free with compilation errors/syntax errors.
- The product must have an interface which is simple enough to understand.

Dependencies:

- All necessary hardware and software are available for implementing and use of the tool.

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- The proposed system would be designed, developed and implemented based on the software requirements specifications document.
- End users should have basic knowledge of computer and we also assure that the users will be given software training documentation and reference material.
- The system is not required to save generated reports.

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Chapter 3

Specific requirements

3.1 External interface requirements

3.1.1 User interfaces

The software provides good graphical interface for the front end which is self explanatory.

3.1.2 Hardware interfaces

- Memory minimum of 1GB RAM
- Hard disk of 40 GB
- Monitor
- Mouse
- Keyboard
- Printer

3.1.3 Software interfaces

- | | |
|--------------------|------------------|
| • Operating System | Windows XP. |
| • Front End | Angular |
| • Backend | MYSQL, Hibernate |
| • Server Side | Spring Boot |
| • Server | Tomcat |

3.2 Functional requirements

3.2.1 Admin

This module helps the administrator to add the employees , work schedule for employees and update the status for employees work schedule and leaves and mark the attendance and to add or edit or delete salary of employee..

3.2.2 Employee

This module helps to add and update the details of the employee like the personal detail and the employee detail and signing.

3.2.3 Work Schedule

This module helps to create ,edit and delete and view work schedule for employees

3.2.4 Attendance

This module helps to different types of leave for different year. It also helps the employee to enter their entry and exit time. employee can also apply for the leave.

3.2.5 Salary

This module helps to calculate the salary by adding the allowances and the basic salary and by deducting the deductions based on the leaves and also the PF, ESI.

3.3 Performance requirements

- The overall system should be fast and error free.
- It should have built in error checking and correction facilities.
- The system should be able to handle large amount of data comfortably.

3.4 Design constraints

- The system runs under Windows XP.
- The application is developed on Angular and MYSQL server as back end.

3.5 Attributes

3.5.1Reliability

In order to ensure reliability, this system is being designed using software that is established to be stable and easy to use.

3.5.2Availability

This system is designed to run 24/7 and be readily available to the user.

3.5.3Security

The access to the software is given only to valid operators. We need a specific ID and password to get access to the software.

3.6 REST APIs to be Built.

Create following REST resources which are required in the application,

1. Creating User Entity: Create Spring Boot with Microservices Application with Spring Data JPA

❖ Technology stack:

- Spring Boot
- Spring REST
- Spring Data JPA

Here will have multiple layers into the application:

1. Create an Entity: Employee
2. Create a Employee Repository interface and will make use of Spring Data JPA
 - a) Will have findByEmployeeId method.
 - b) Add the Employee details
 - c)Delete Employee By Id
 - d)Update Employee Details
3. Create a EmployeeService class and will expose all these services.
4. Finally, create a EmployeeRestController will have the following Uri's:

URI	Methods	Description	Form
/employees	GET	Give All Employees description	JSON
/employee/{id}	GET	Give a single Employee description searched based on Employee id	STRING

"Employee Payroll Management System"

/addEmployee	POST	Add the Employee details	JSON
/updateProfile/{id}	PUT	Update the Employee details	JSON
/deleteEmployee/{id}	DELETE	Delete Employee by id	STRING

2. Creating Attendance Entity:

Build a RESTful resource for Product manipulations, where CRUD operations to be carried out. Here will have multiple layers into the application:

1. Create an Entity: Attendance
2. Create a AttendanceRepository interface and will make use of Spring Data JPA
 - a) Will have findByEmployeeId method.
 - b) Add the Attendance details method.
 - c) Will have deleteEmployeeById method.
 - d) Will have findAllEmployeeAttendance method.
3. Create a AttendanceService class and will expose all these services.
4. Finally, create a AttendanceRestController will have the following Uri's:

URI	Methods	Description	Form
/employeeattendances	GET	Give all Employees Attendance description	JSON
/employeeattendances/{id}	GET	Give a single Employee Attendance description searched based on Employee id	STRING
/addEmployee_attendance	POST	Add the Employee Attendance details	JSON

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/adminattendances/{id}	PUT	Update the Employee Attendance details	JSON
/adminattendances/{id}	DELETE	Delete Employee Attendance by id	STRING

3. Creating Salary Entity:

Build a RESTful resource for Product manipulations, where CRUD operations to be carried out. Here will have multiple layers into the application:

1. Create an Entity: Salary

2. Create a Salary Repository interface and will make use of Spring Data JPA

a) Will have findByEmployeeId method.

b) Add the Salary details method.

c) Will have deleteEmployeeById method.

d) Will have findAllEmployeeSalary method.

3. Create a SalaryService class and will expose all these services.

4. Finally, create a SalaryRestController will have the following Uri's:

URI	Methods	Description	Form
/employeesalaries	GET	Give all Employees Salary description	JSON
/employeesalaries/{id}	GET	Give a single Employee Salary description searched based on Employee id	STRING
/employeesalaries/{id}	POST	Add the Employee Salary details	JSON
/employeesalaries/{id}	PUT	Update the Employee Salary details	JSON

/adminsalaries/{id}	DELETE	Delete Employee Salary by id	STRING
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4. Creating Leave Entity:

Build a RESTful resource for Product manipulations, where CRUD operations to be carried out. Here will have multiple layers into the application:

1. Create an Entity: Leave
2. Create a LeaveRepository interface and will make use of Spring Data JPA
 - a) Will have findByEmployeeId method.
 - b) Add the Leave details method.
 - c) Will have deleteEmployeeById method.
 - d) Will have findAllEmployeeLeave method.
3. Create a LeaveService class and will expose all these services.
4. Finally, create a LeaveRestController will have the following Uri's:

URI	Methods	Description	Form
/employeeleaves	GET	Give all Employees Leave description	JSON
/employeeleaves/{id}	GET	Give a single Employee Leave description searched based on Employee id	STRING
/addEmployee_leave	POST	Add the Employee Leave details	JSON
/employeeleaves/{id}	PUT	Update the Employee Leave details	JSON
/employeeleaves/{id}	DELETE	Withdraw Employee Leave by id	STRING

5. Creating Work Schedule Entity:

Build a RESTful resource for Product manipulations, where CRUD operations to be carried out. Here will have multiple layers into the application:

1. Create an Entity: Work Schedule
2. Create a WorkScheduleRepository interface and will make use of Spring Data JPA
 - a) Will have findByEmployeeId method.
 - b) Add the Work Schedule details method.
 - c) Will have deleteEmployeeById method.
 - d) Will have findAllEmployeeWorkSchedule method.
3. Create a WorkScheduleService class and will expose all these services.
4. Finally, create a WorkScheduleRestController will have the following Uri's

URI	Methods	Description	Form
/adminworkschedules	GET	Give all Employees Work Schedule description	JSON
/adminworkschedules/{id}	GET	Give a single Employee Work Schedule description searched based on Employee id	STRING
/adminworkschedules	POST	Add the Employee Work Schedule details	JSON
/adminworkschedules/{id}	PUT	Update the Employee Work Schedule details	JSON
/adminworkschedules/{id}	DELETE	Cancel Employee Work Schedule by id	STRING

Database Tables

Login table:

ColumnName	Data Type	Length	Nulls
Emp_id	int	30	Foreign Key
password	varchar	30	-

Registration table:

ColumnName	Data Type	Length	Nulls
Emp_id	int	30	-
age	int	30	-
password	varchar	30	-
Date_of_joining	date	30	-
Designation	varchar	30	-
email	varchar	30	-
Emp_name	varchar	30	-
gender	varchar	30	-

Salary table:

ColumnName	Data Type	Length	Nulls
Emp_id	int	30	Foreign Key
Basic_pay	varchar	30	-
deductions	varchar	30	-
Emp_name	varchar	30	-
month	varchar	30	-
Net_pay	Varchar	30	-

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Attendance table:

ColumnName	Data Type	Length	Nulls
Emp_id	int	30	Foreign Key
email	varchar	30	-
date	varchar	30	-
Emp_name	varchar	30	-
status	varchar	30	-

leave table:

ColumnName	Data Type	Length	Nulls
Emp_id	int	30	Foreign Key
Leave_type	varchar	30	-
From_date	date	30	-
reason	varchar	30	-
status	varchar	30	-
To_date	date	30	-

Change password table:

Column Name	Data Type	Length	Nulls
Emp_id	int	30	Foreign Key
Confirm_password	varchar	30	-
New_password	varchar	30	-
Old_password	varchar	30	-

“Employee Payroll Management System”

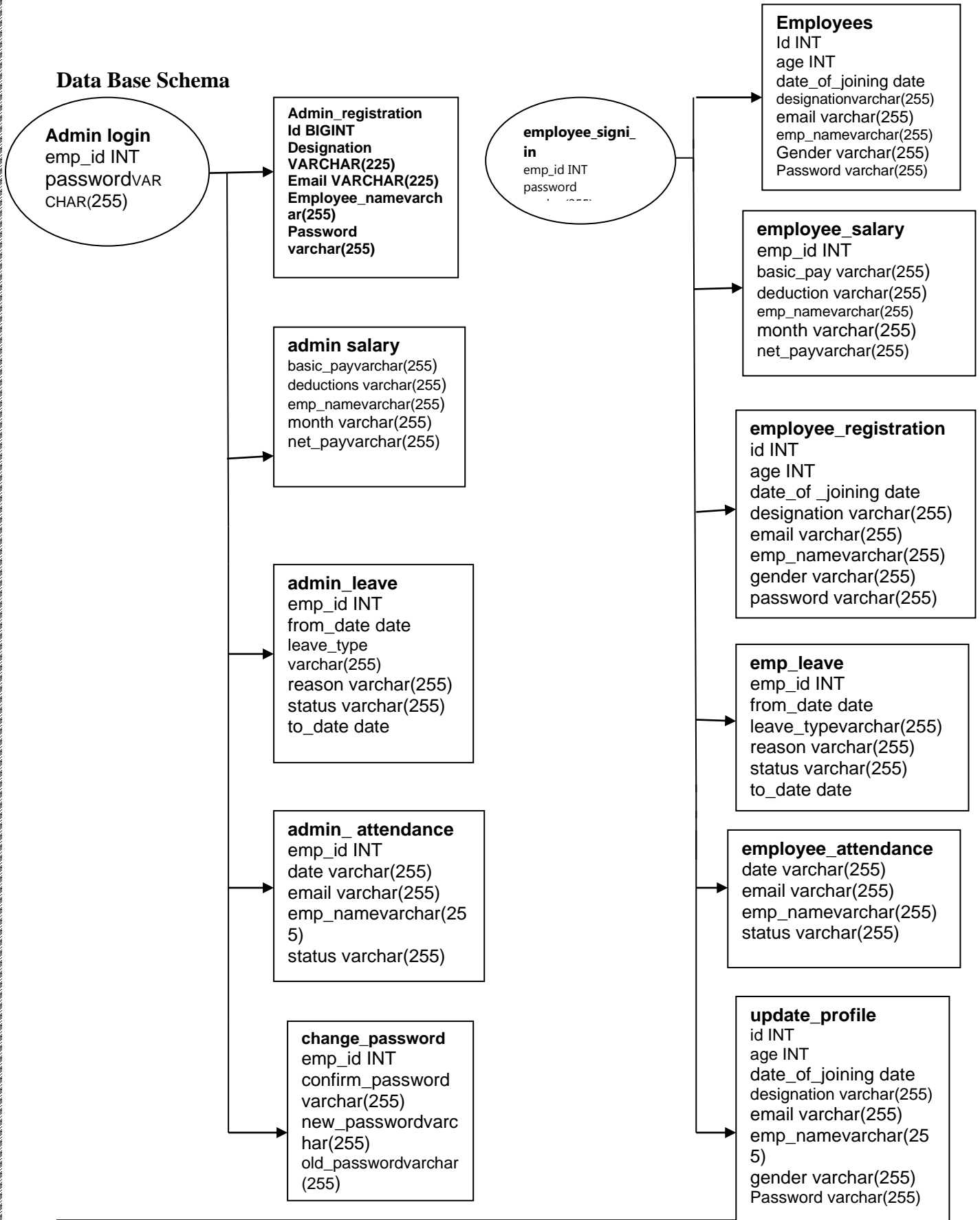
employees Details table:

Column Name	Data Type	Length	Nulls
Emp_id	int	30	Primary Key
password	varchar	30	-
age	int	30	-
Date_of_joining	date	30	-
designation	varchar	30	-
Emp_name	varchar	30	-
email	varchar	30	-
gender	varchar	30	-

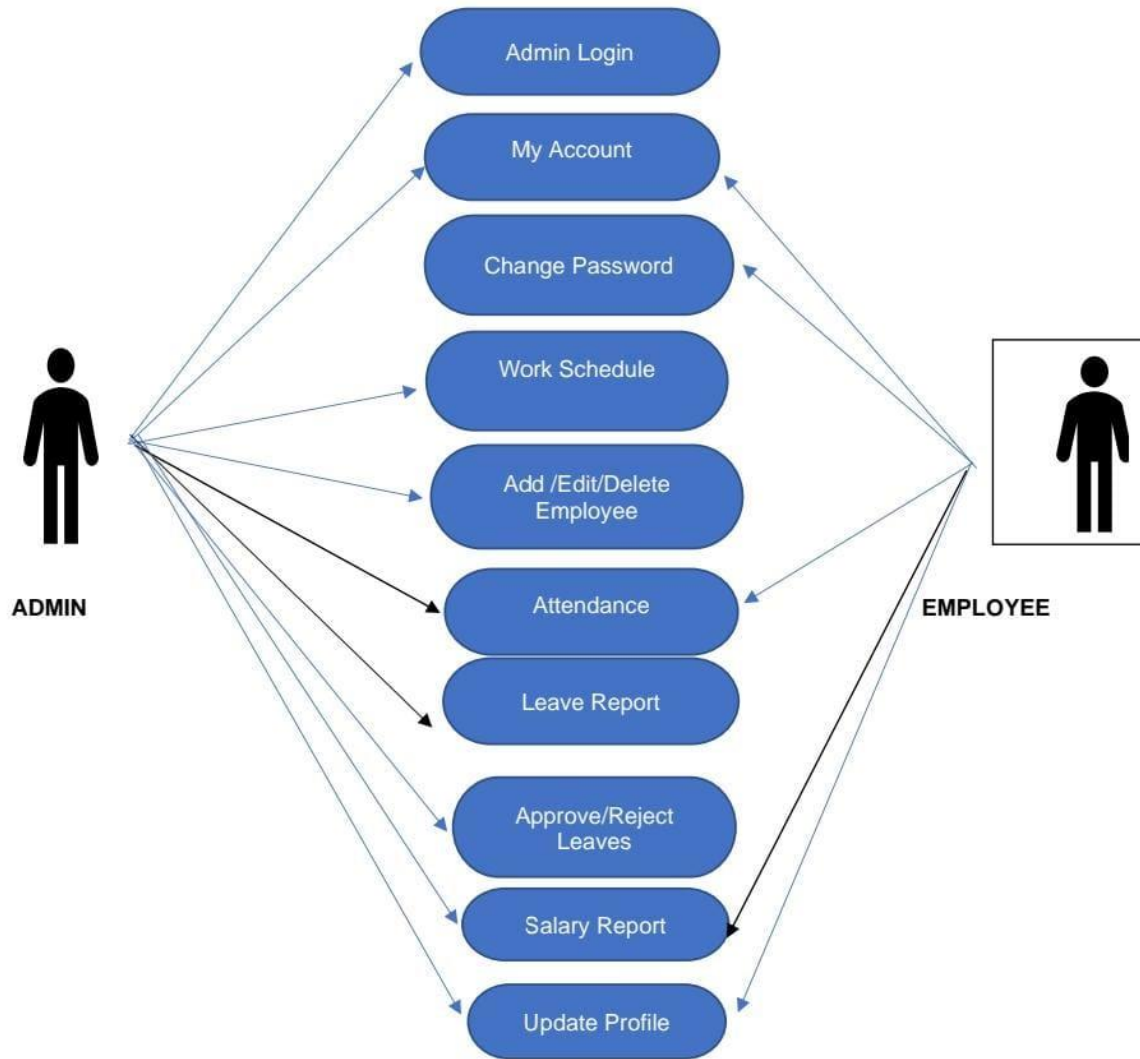
Update_profile table:

Column Name	Data Type	Length	Nulls
Emp_id	int	30	Foreign Key
password	varchar	30	-
age	int	30	-
Date_of_joining	date	30	-
designation	varchar	30	-
email	varchar	30	-
Emp_name	varchar	30	-
gender	varchar	30	-

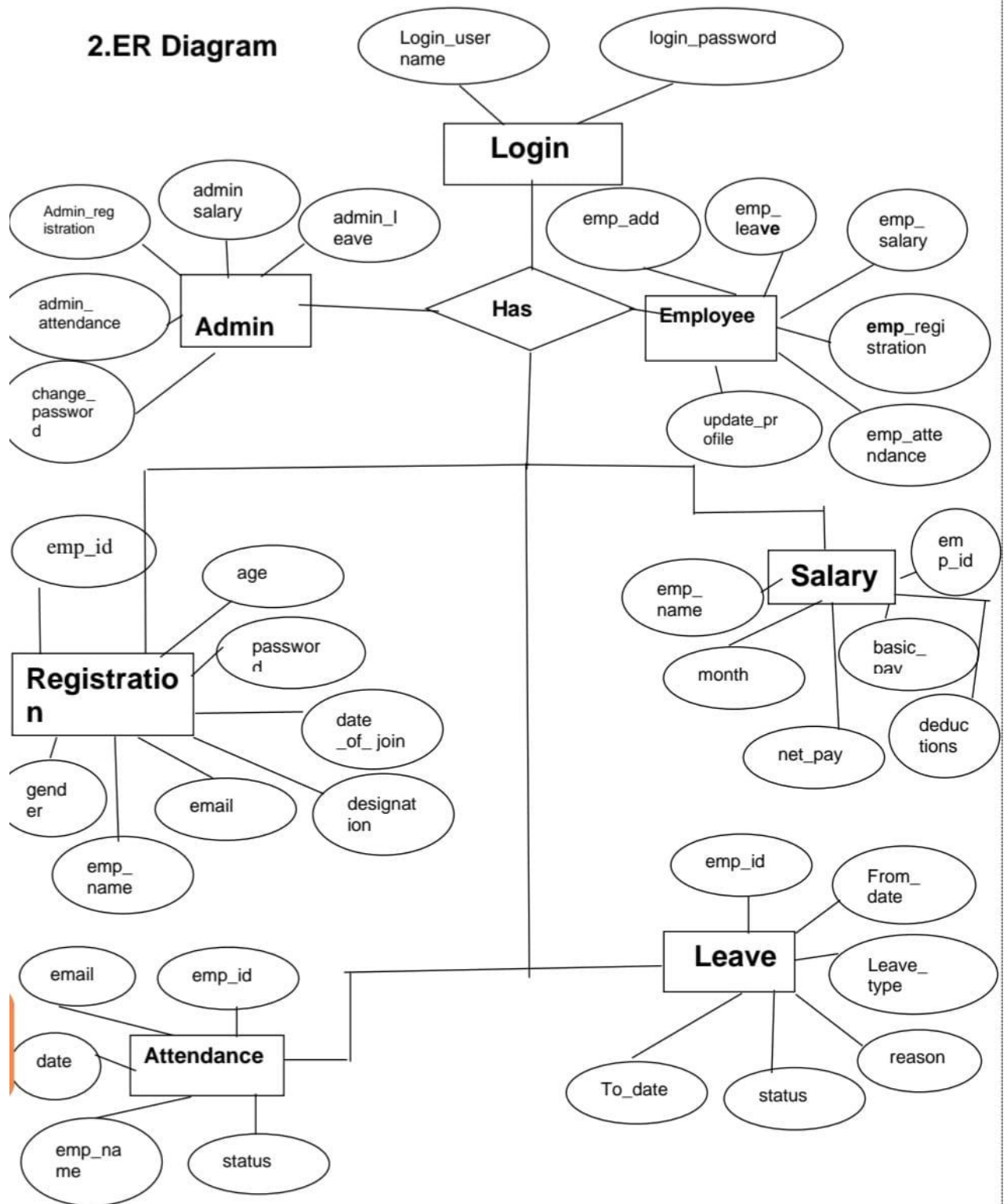
Data Base Schema



1. Use Case Diagram

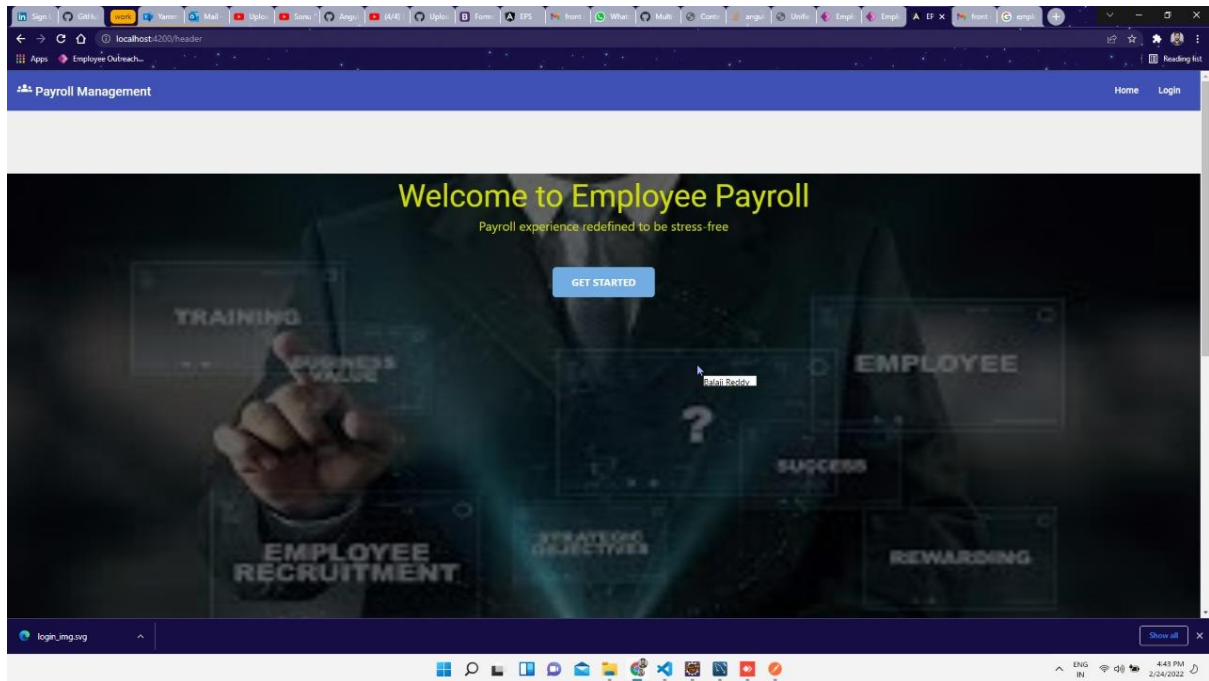


2.ER Diagram

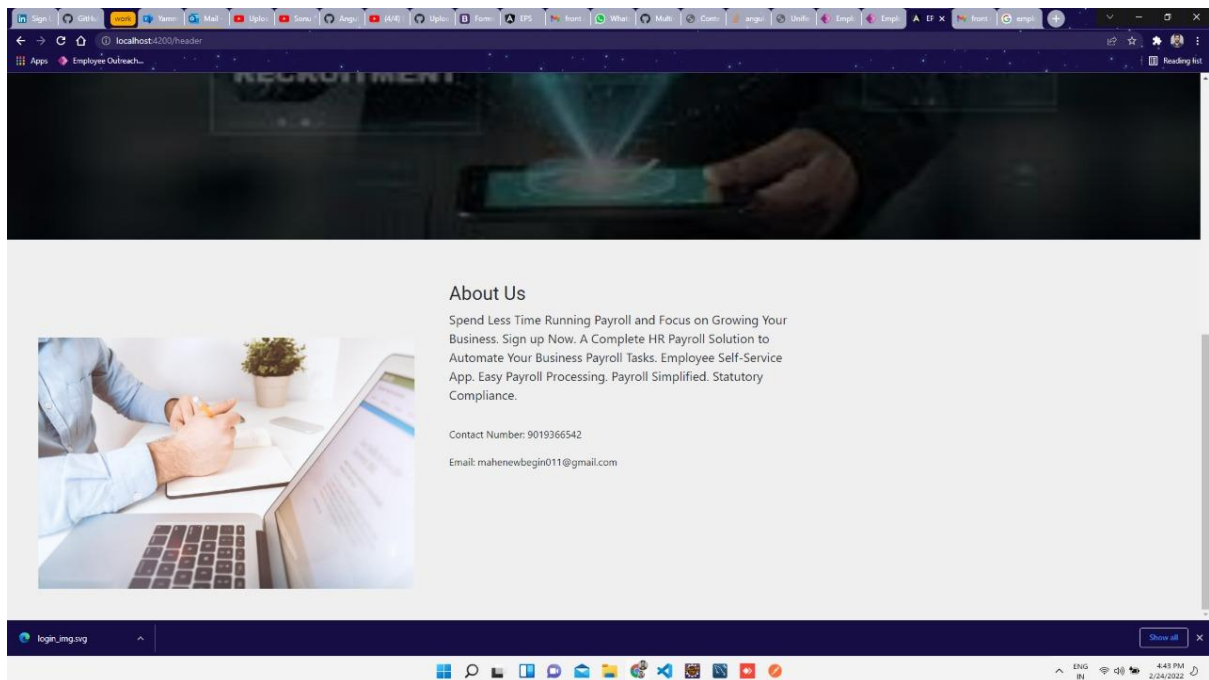


"Employee Payroll Management System"

HOME PAGE:

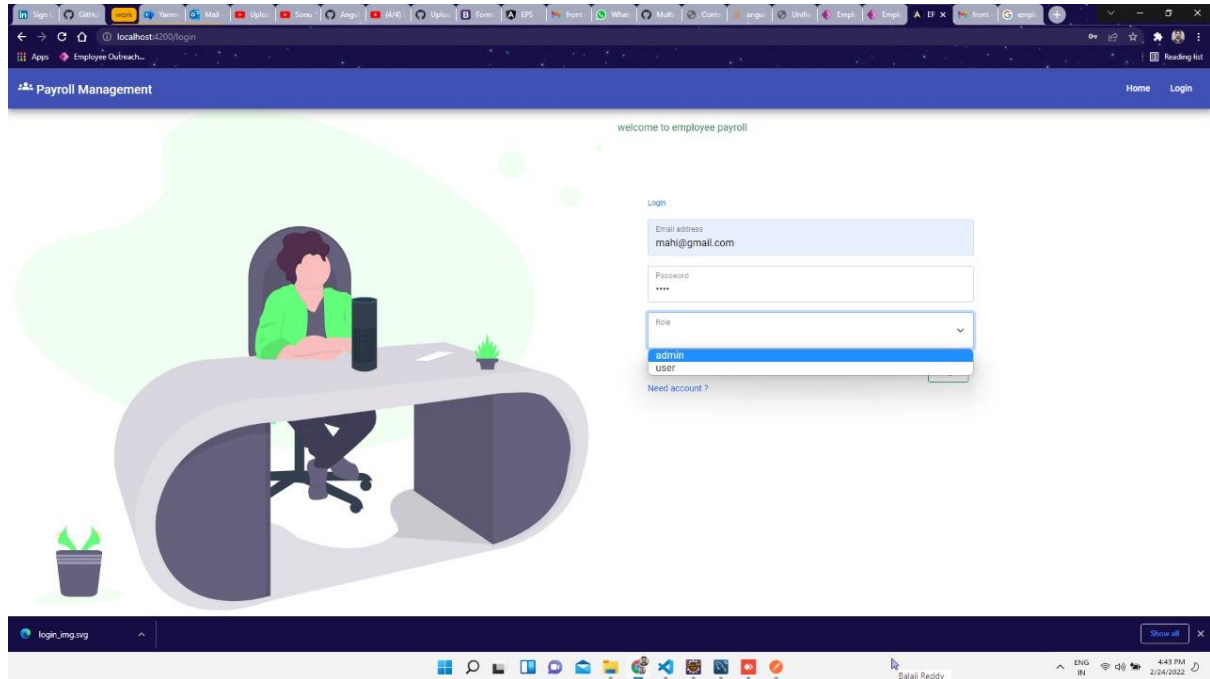


About Us Page:

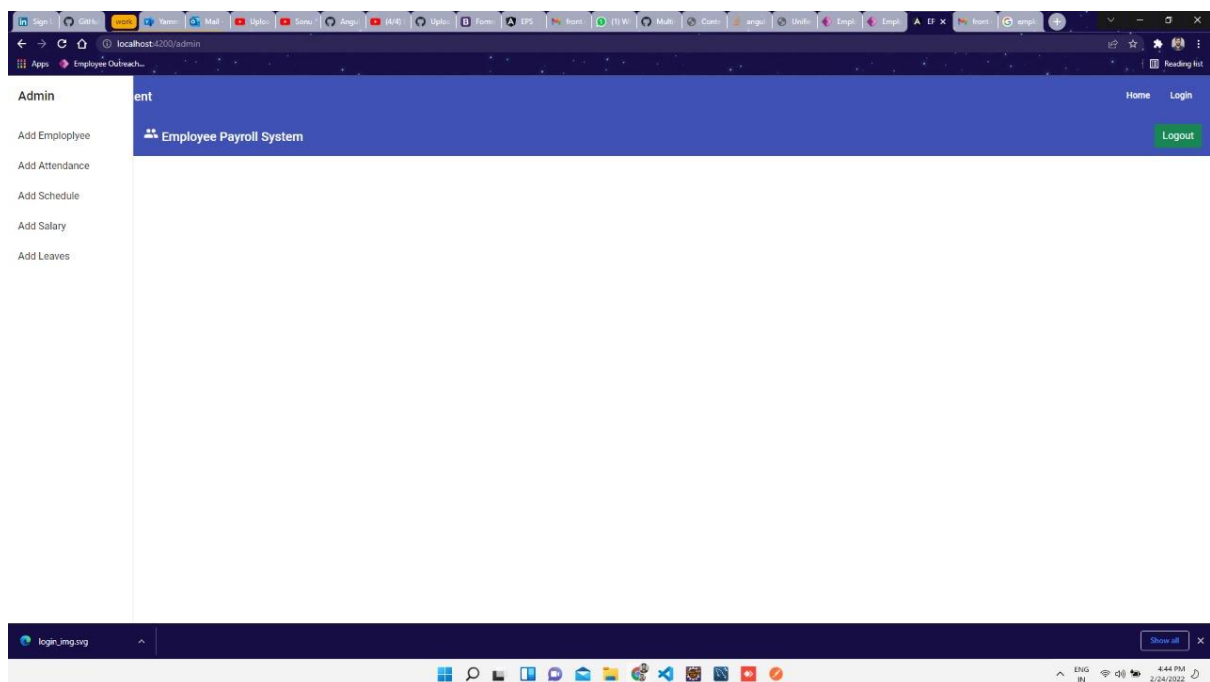


"Employee Payroll Management System"

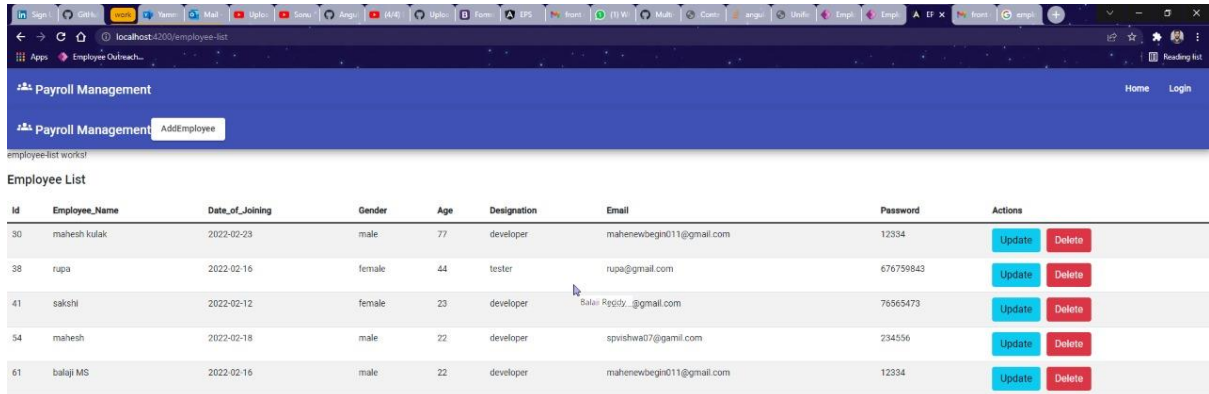
Admin Login Page:



Admin side bar Page



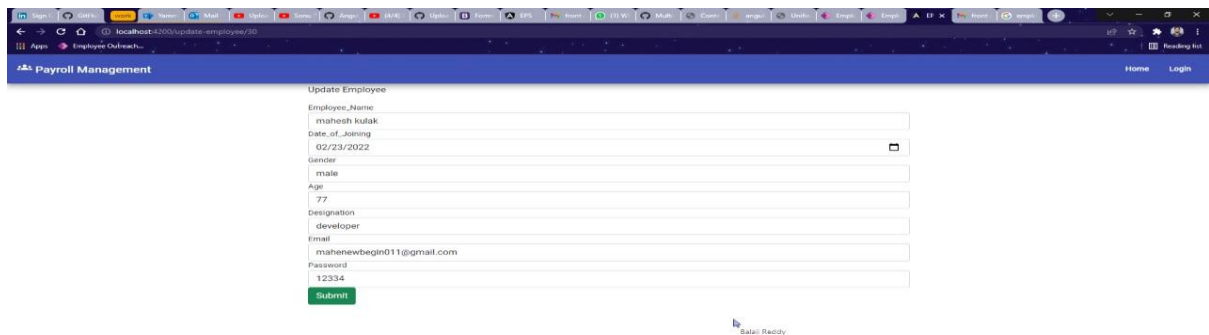
Employees Details Page



Id	Employee_Name	Date_of_Joining	Gender	Age	Designation	Email	Password	Actions
30	mahesh kulak	2022-02-23	male	77	developer	mahenewbegin011@gmail.com	12334	<button>Update</button> <button>Delete</button>
38	rupa	2022-02-16	female	44	tester	rupa@gmail.com	676759843	<button>Update</button> <button>Delete</button>
41	sakshi	2022-02-12	female	23	developer	Balai Rajdy...@gmail.com	76565473	<button>Update</button> <button>Delete</button>
54	mahesh	2022-02-18	male	22	developer	spvishwa07@gamil.com	234556	<button>Update</button> <button>Delete</button>
61	balaji MS	2022-02-16	male	22	developer	mahenewbegin011@gmail.com	12334	<button>Update</button> <button>Delete</button>



Update Employee Page:



Update Employee

Employee_Name: mahesh kulak

Date_of_Joining: 02/23/2022

Gender: male

Age: 77

Designation: developer

Email: mahenewbegin011@gmail.com

Password: 12334

Submit



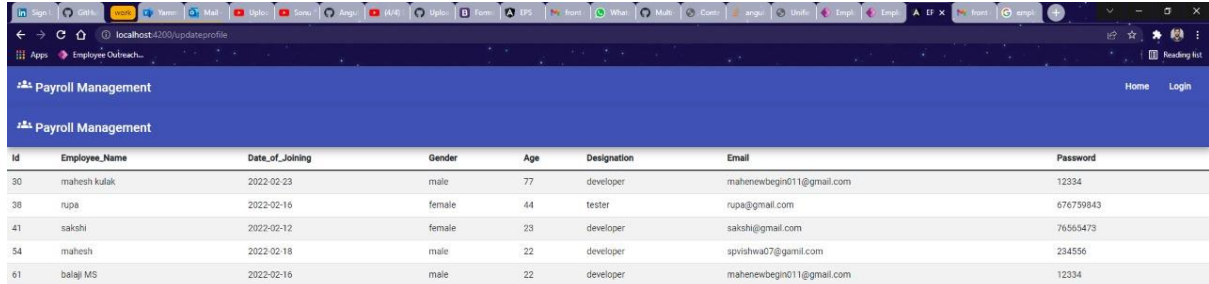
Adding An Employee Page:

The screenshot shows a web browser window with the URL `localhost:4200/create-employee`. The page has a dark blue header with the text "Payroll Management" and links for "Home" and "Login". The main content area is titled "Add Employee" and contains a form with the following fields: "Employee_Name" (text input with value "balaji MS"), "Date_of_Joining" (date input with value "02/16/2022"), "Gender" (dropdown menu with value "male"), "Age" (text input with value "22"), "Designation" (text input with value "developer"), "Email" (text input with value "mahenewbegin011@gmail.com"), and "Password" (password input with value "12334"). A "Submit" button is located at the bottom of the form. The browser's taskbar at the bottom shows the Windows logo, search icon, and various application icons, along with system tray information indicating the time is 4:45 PM on 2/14/2022.

Employee side bar Page

The screenshot shows a web browser window with the URL `localhost:4200/user`. The page has a dark blue header with the text "Employee Payroll System" and links for "Home" and "Login". The main content area is titled "Employee" and contains a sidebar with the following links: "View Employee", "View Attendance", "View Schedule", "View Salary", and "View Leave". The browser's taskbar at the bottom shows the Windows logo, search icon, and various application icons, along with system tray information indicating the time is 5:29 PM on 2/24/2022.

View employee Page



Id	Employee_Name	Date_of_Joining	Gender	Age	Designation	Email	Password
30	mahesh kulak	2022-02-23	male	77	developer	mahenewbegin011@gmail.com	12334
38	rupa	2022-02-16	female	44	tester	rupa@gmail.com	676759843
41	sakshi	2022-02-12	female	23	developer	sakshi@gmail.com	76565473
54	mahesh	2022-02-18	male	22	developer	spvishwa07@gmail.com	234556
61	balaji MS	2022-02-16	male	22	developer	mahenewbegin011@gmail.com	12334



3.7 Advantages Of EPM:

- Helps the employee easy way to access their data.
- Easy way of login and update the profile.
- The information related to employee can be added and removed easily.
- Reduce the burden of compliance
- Store the end-to-end data of the employees

3.7.2 Disadvantages Of EPM

- Data security, loss and theft.
- Cyber security and fraud.
- Information access, quality and control

References

- ❖ <https://www.globalization-partners.com/blog/advantages-and-disadvantages-of-payroll-outsourcing/>
- ❖ <https://www.iitms.co.in/hr-management-software/>