# Employee Management System

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## Introduction

- Employee management system is a distributed application, developed to maintain the details of employees working in any organization.
- It maintains the information about the personal details of their employees, also the details about the payroll system which enables to generate the payslip.
- The application is actually a suit of applications developed using java. Its simple to understand even if your not smiler with this application.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus, by this all it proves it is user-friendly. **Employee Management System, It can assist the user to** concentrate on their other activities rather concentrate on the record-keeping. Thus, it will help the organization in better utilization of resources.

## Objective

- The purpose of the Employee Management System is to automate the existing manual system with the help of computerized equipment and full-fledged computer software, fulfilling their requirements so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easy to work with.
- Employee Management systems, as described above, can lead to error-free, secure, reliable and fast management systems.

- □ It can assist the user to concentrate on their activities rather to concentrate on the record keeping.
- Thus, it will help an organization in better utilization of resources.
- The organization can maintain computerized records without redundant entries.
- That means that one need not be distracted by information that is not relevant while being able to reach the information.

## Technologies To Be Used

#### Hardware Requirement

- Operating System : Windows OS
- Processor: intel i3 or higher
- RAM : 4 GB or +
- Dedicated Graphics card.

#### **Software Requirement**

- Back-End
  - Core Java
  - > Spring Boot
  - ➤ Spring Data JPA
  - Hibernate
  - **≻**Spring Boot Web
  - MySQL Database
  - **>JUnit**

## **Proposed System**

- ☐ First we have to run the Application on the browser, the index page will be shown after that if the user is registered then he/she can login the page and he/she can entering in the application.
- If the user is not registered then he/she needs to register themselves and then he/she can continuing to login and he/she can access any time.
- After that related pages will be there like if user is admin so he/she can access all the operations like insert, delete, update and search the details.
- If the user is customer then he/she can view the related record and he/she can update the record.
- And after that he/she can logged out by themselves.

## **Annotations**

- Annotations are used to provide supplemental information about a program.
- Annotations start with '@'.
- @Id: This id annotation is used to declare attribute as primary.
- @Generated Value: Used to generate value automatically when use insert new record
- @Sequence Generator: used to assign initial value from where user want to generate.
- @Column: When user want to add constraint on column that time this @ is used.

- @Email: used to compare email format
- · @Range: Used to assign rang for number type of input.

Eg. age@size: Used in collection

@length: Used to assign range like Minimum and Maximus for the string type data.

@NotNull: This gives manadatory filed to enter data.

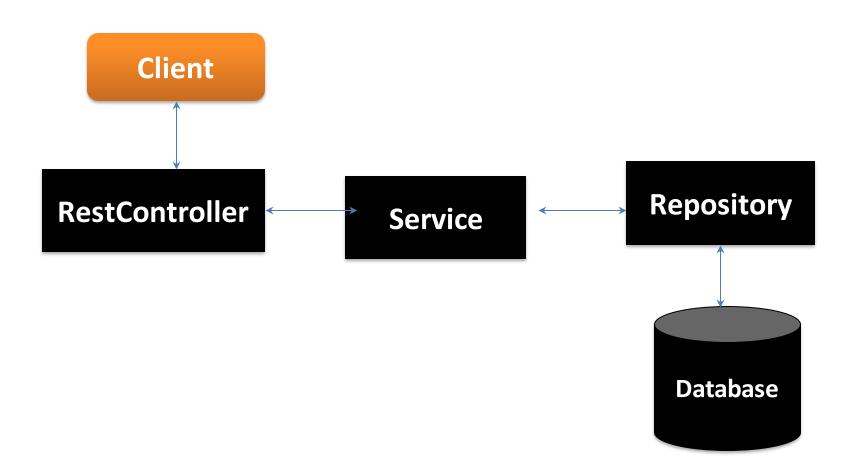
@Many To One:to create the many-to-one relationship between the Student and Address entities

#### **About Back-end:**

- There are mainly four operations will be performed by the user and admin Ex. Insert, update, retrieve/fetch, delete.
- These operation will be performed using the spring boot framework, core java and spring boot web, spring data Jpa, and hibernate.
- And thymeleaf is the design pattern for the user interface.
- For connectivity purpose we are using MySQL database. It is connected to the java and database.

## Working Of Back-End

☐ There are mainly three stages —

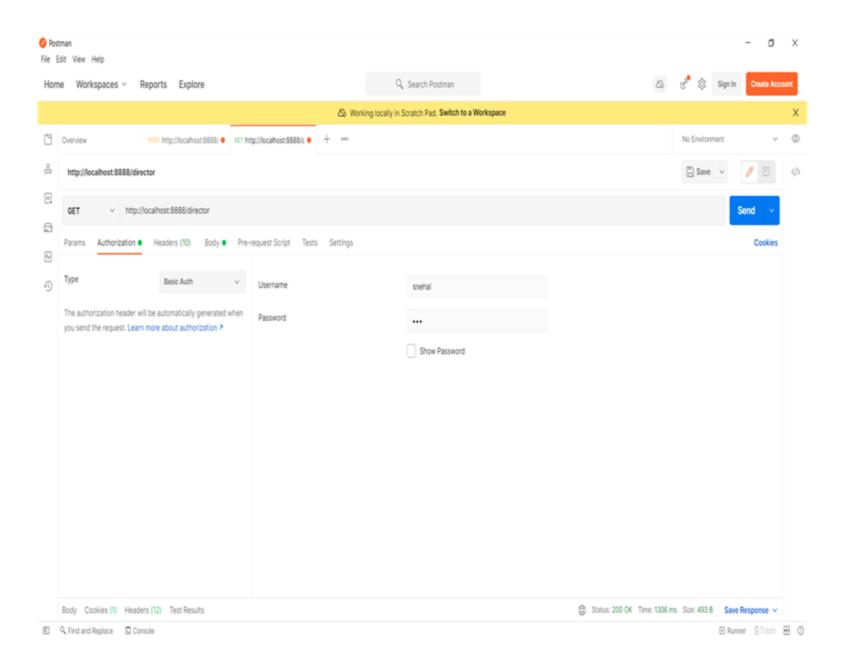


- RestController In Spring Boot, the RestController class is responsible for processing incoming requests, preparing a model, and returning the view to be rendered as a response.
- Service Components are the class file which contains @Service annotation. These class files are used to write business logic in a different layer.
- Repository Repository is a specialization of @Component annotation which is used to indicate that the class provides the mechanism for storage, retrieval, update, delete and search operation on objects.

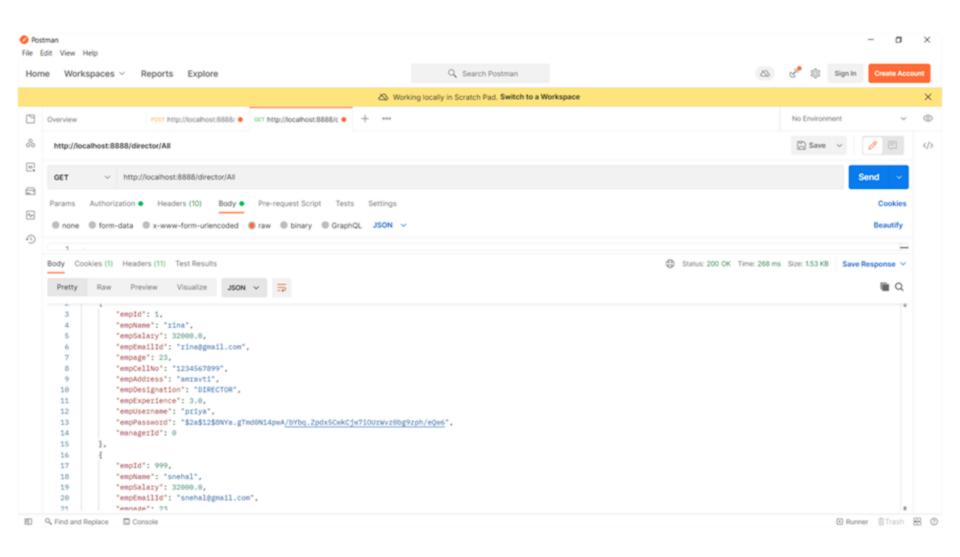
☐ Repository is directly connected with the database and then it can return to the repository and response to the service and it can return to the controller and then response send to the client.

# Snapshots

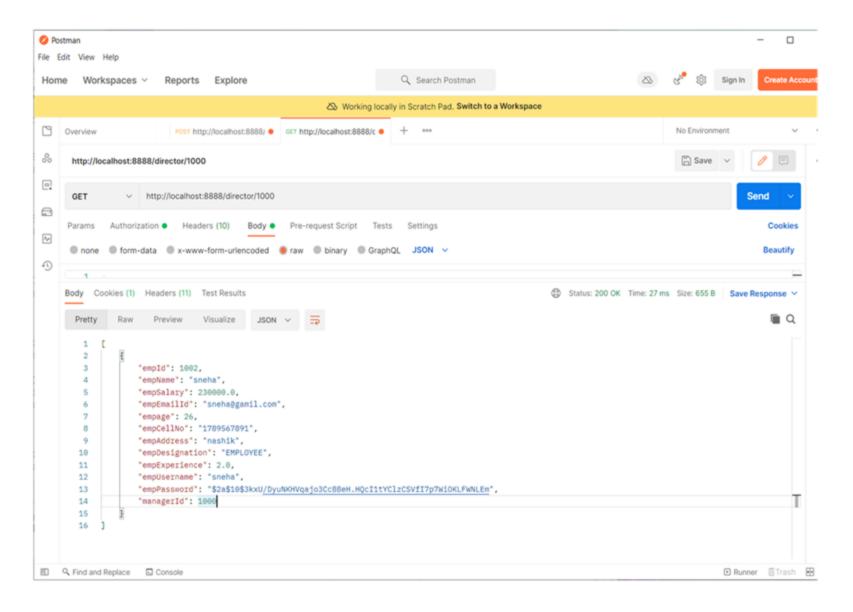
#### **LOG IN PAGE**



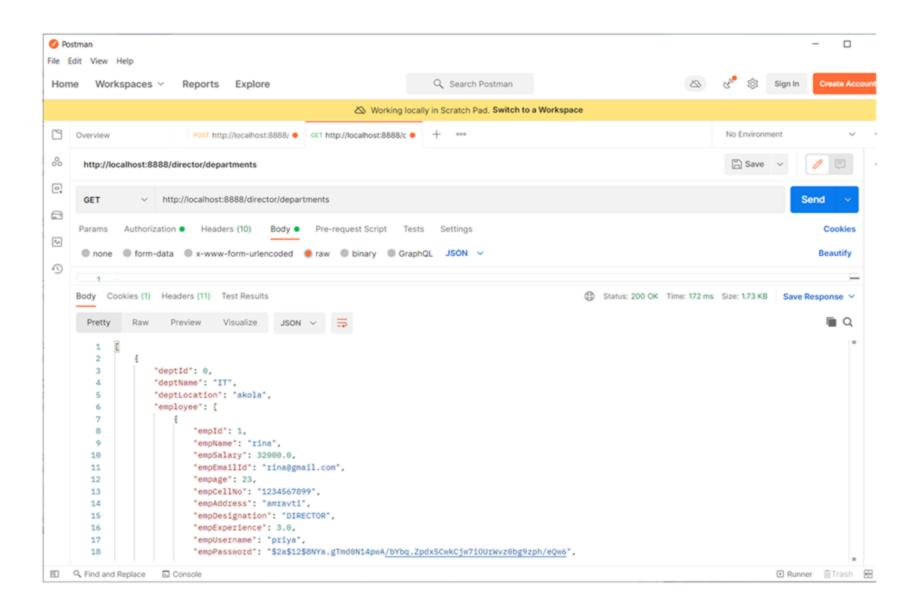
#### 2 Get All Record: / director/All



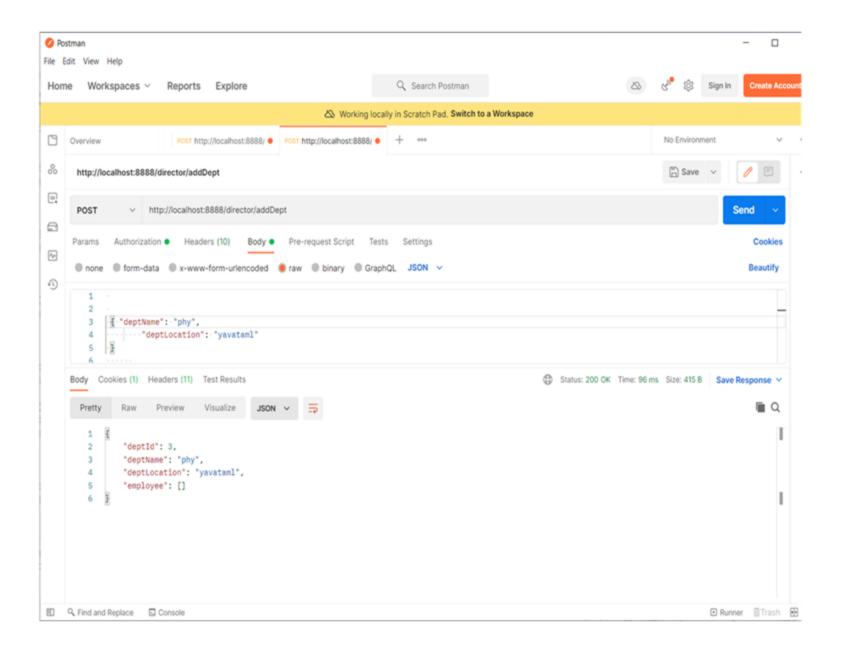
#### 3 Get Employee List: /director/{managerId}



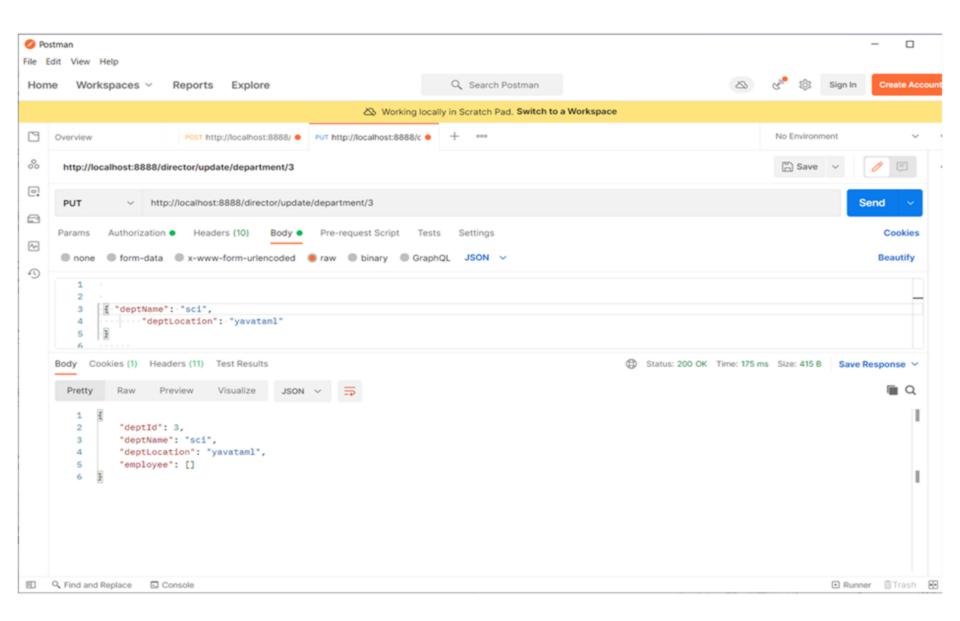
#### 4 Get All Departments : /director/departments



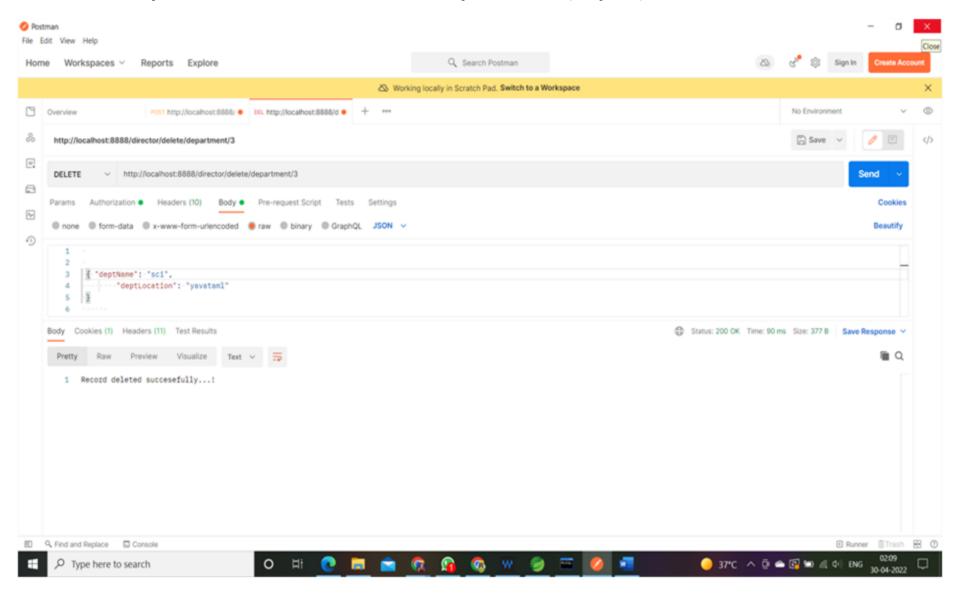
#### 5 Add department: /director/addDept



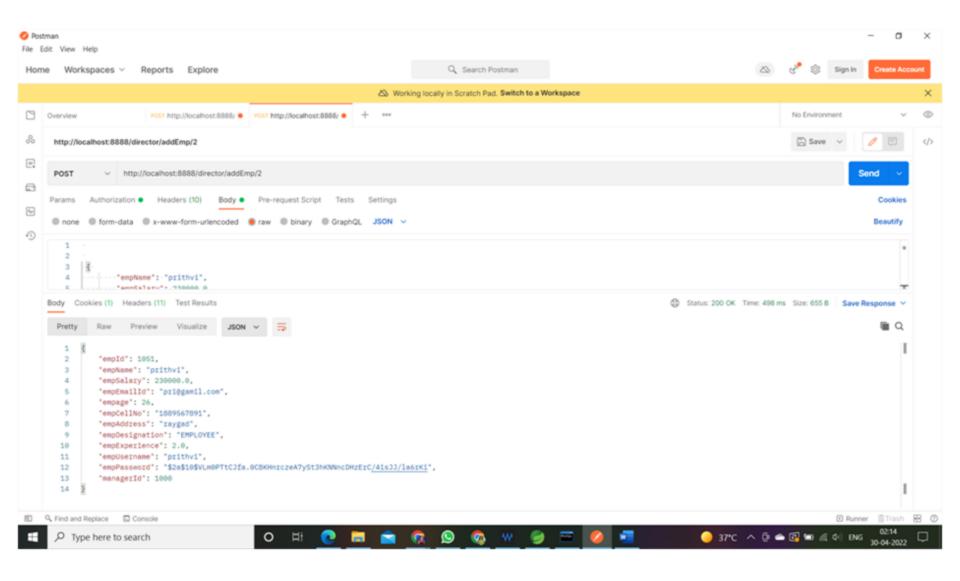
#### 6 update department: /director/update/department/{deptId}



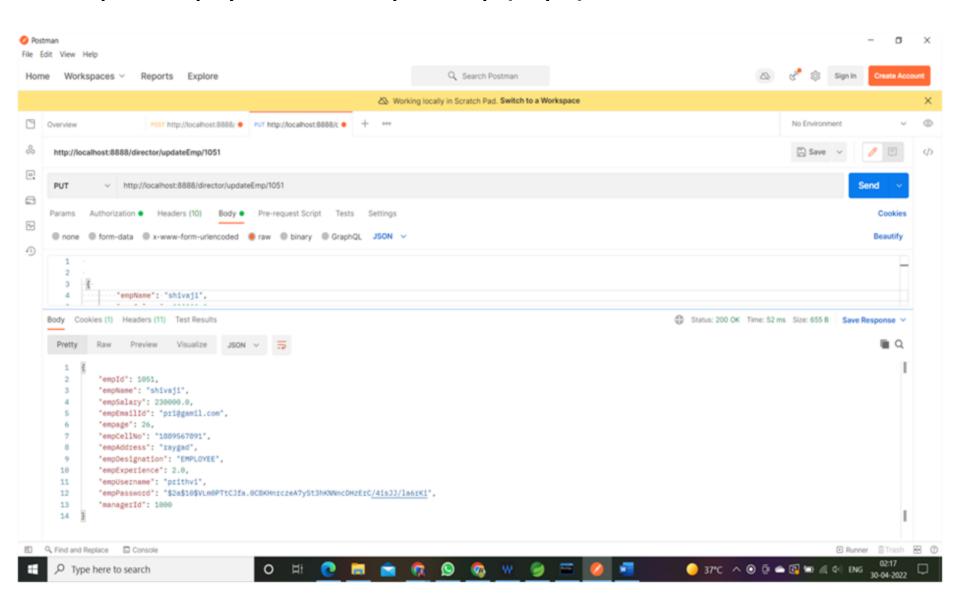
#### 7 delete department : /director/delete/department/{deptId}



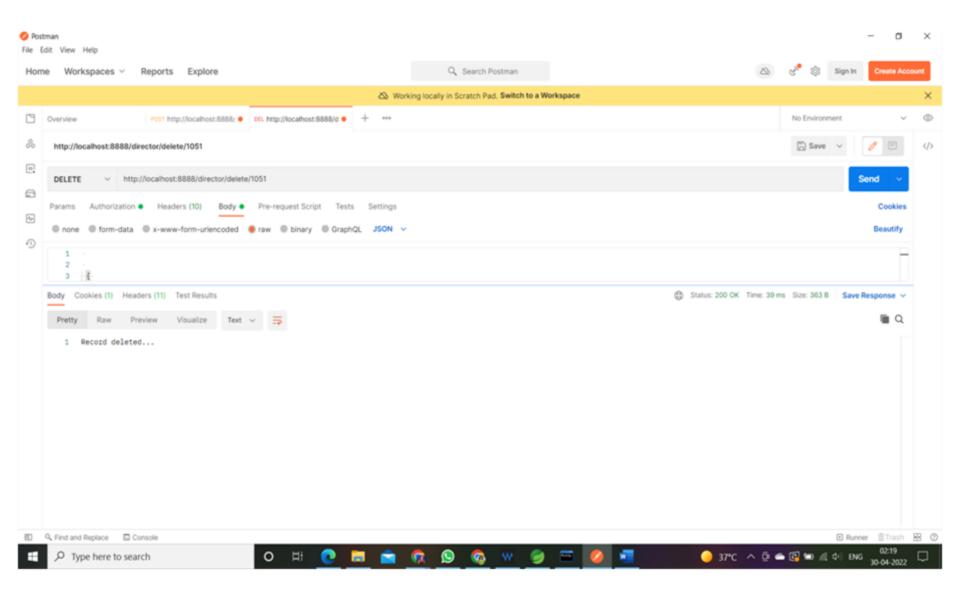
#### 8 add employee : /director/addEmp/{deptId}



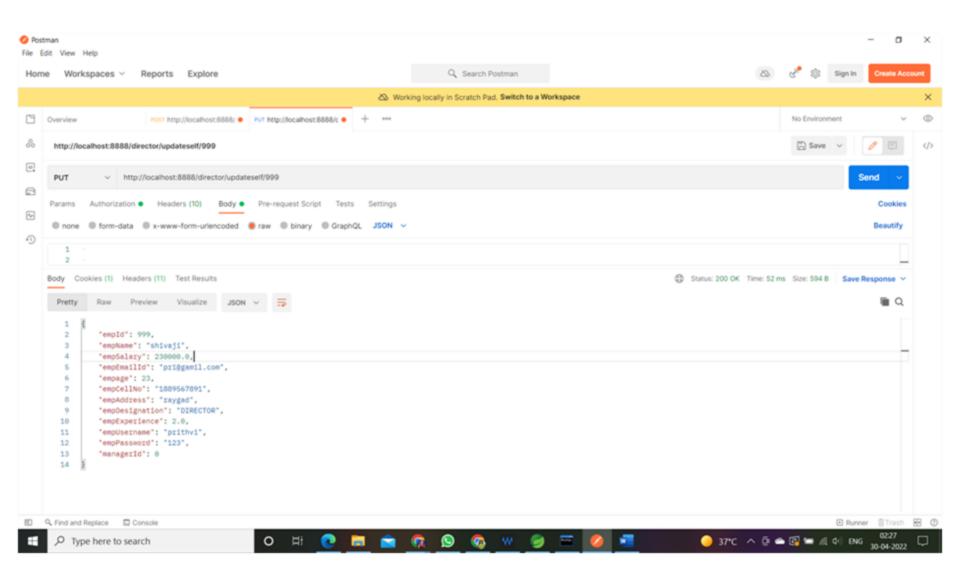
#### 9 update employee : /director/updateEmp/{empld}



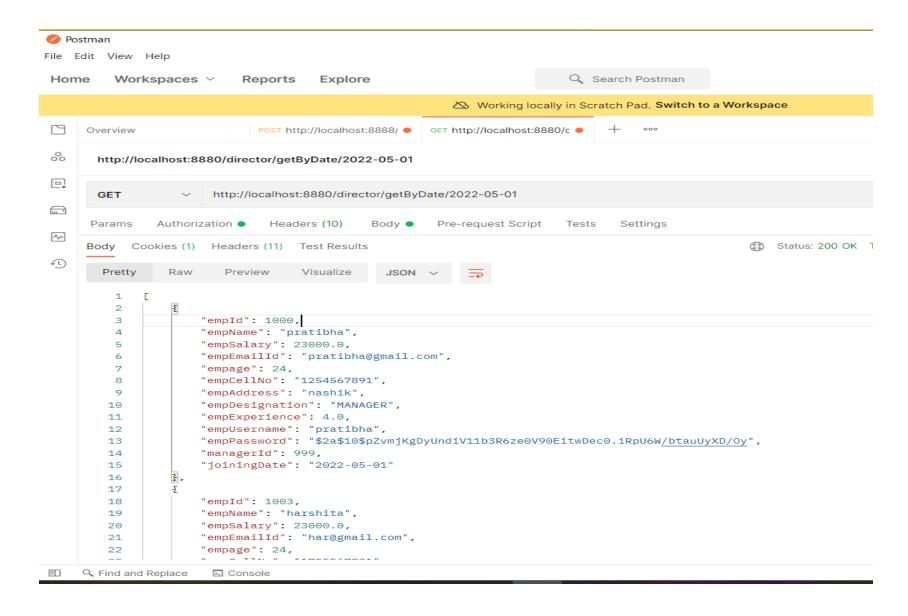
#### 10 delete employee: /director /delete /{empld}



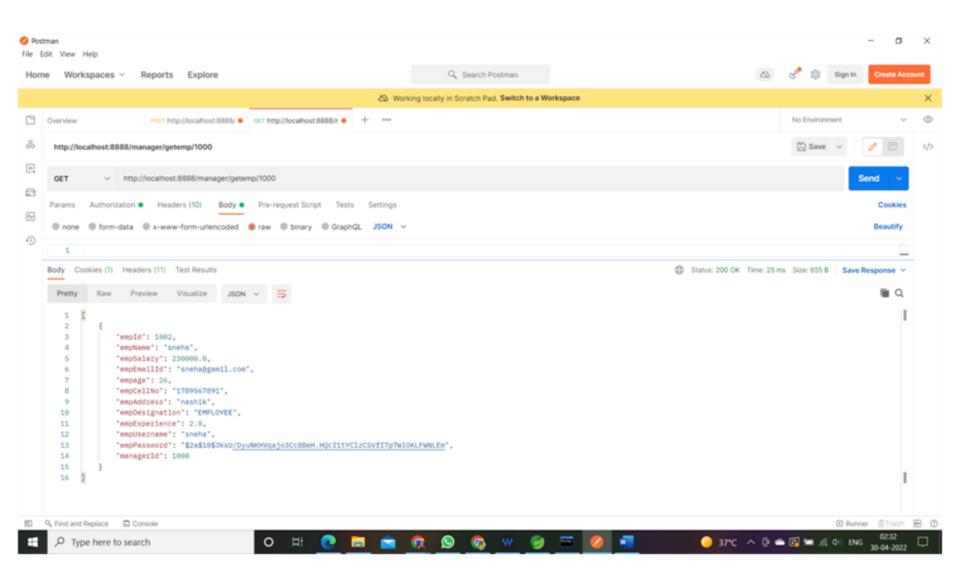
#### 11 Updateself: /director/updateself/{empld}



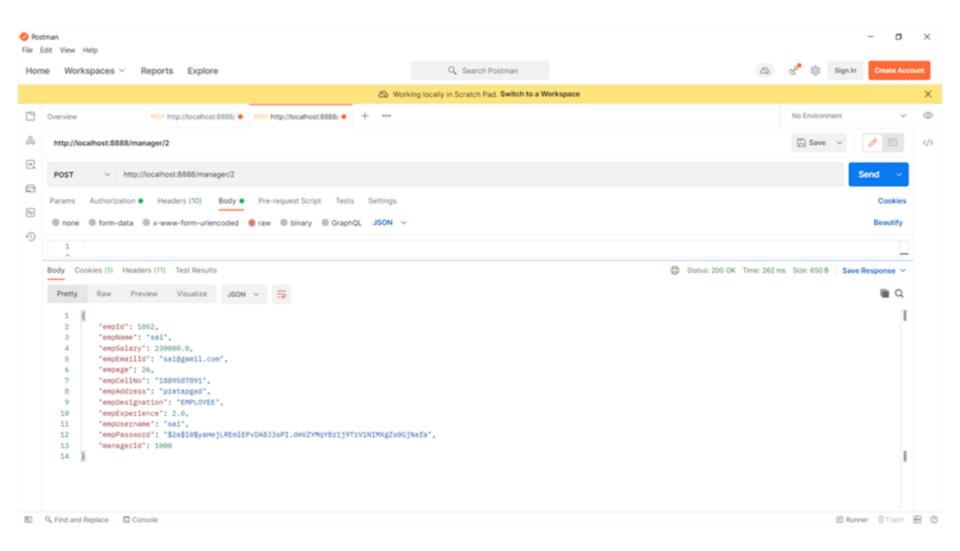
#### 13 Date :/director/getByDate/2022-05-01



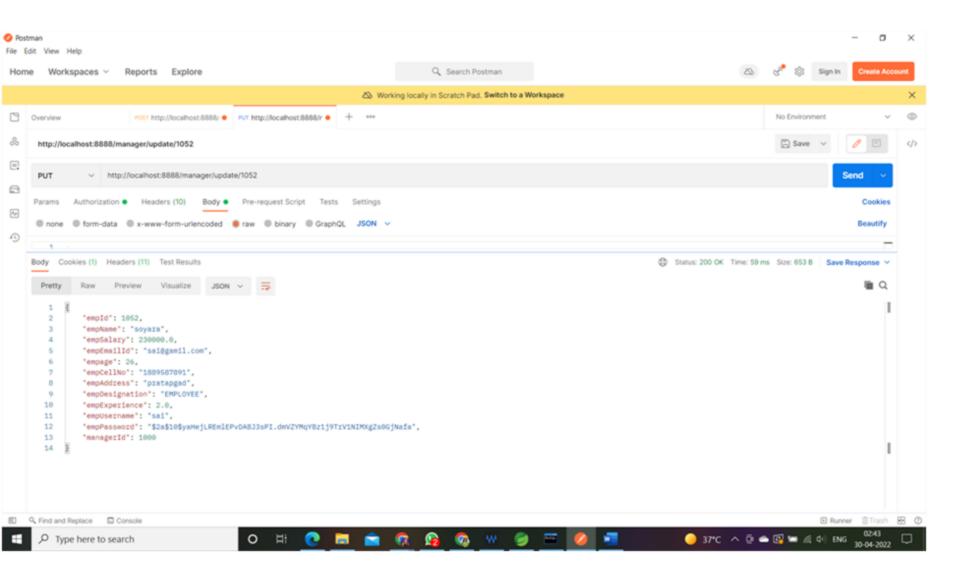
#### 14 Get employee List : /manager/getemp/{managerId}



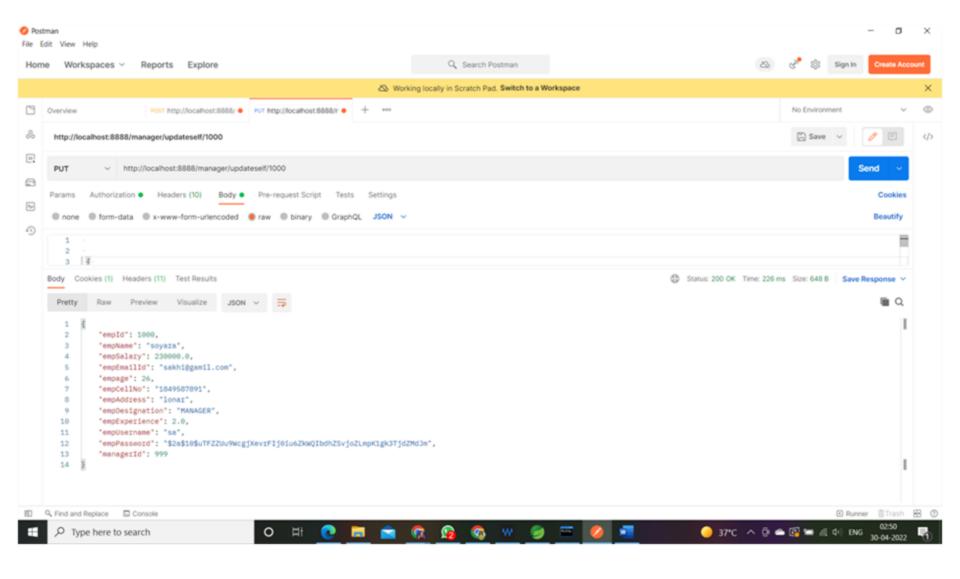
#### 14 Add employee : /manager/{deptId}



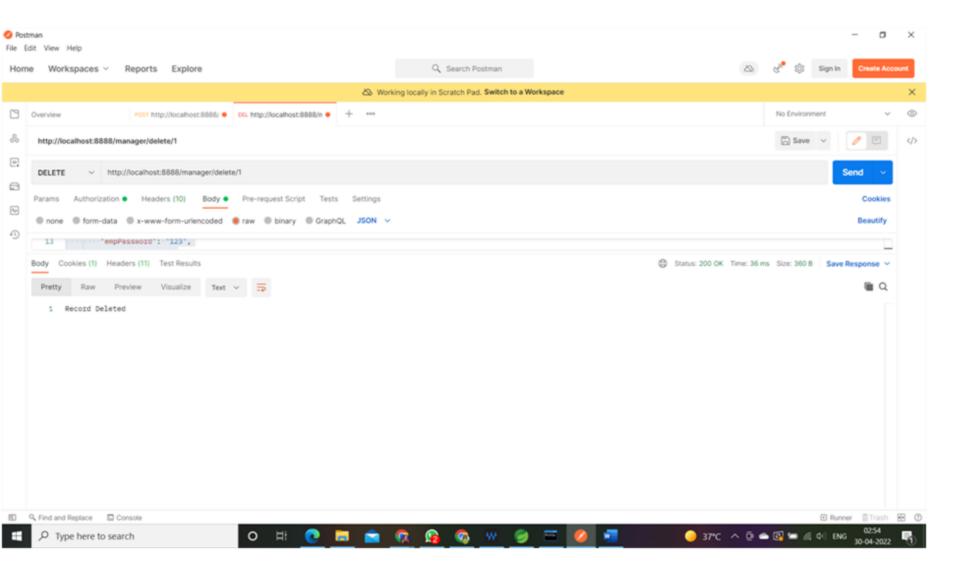
#### 15 Update employee : /manager/update/{empld



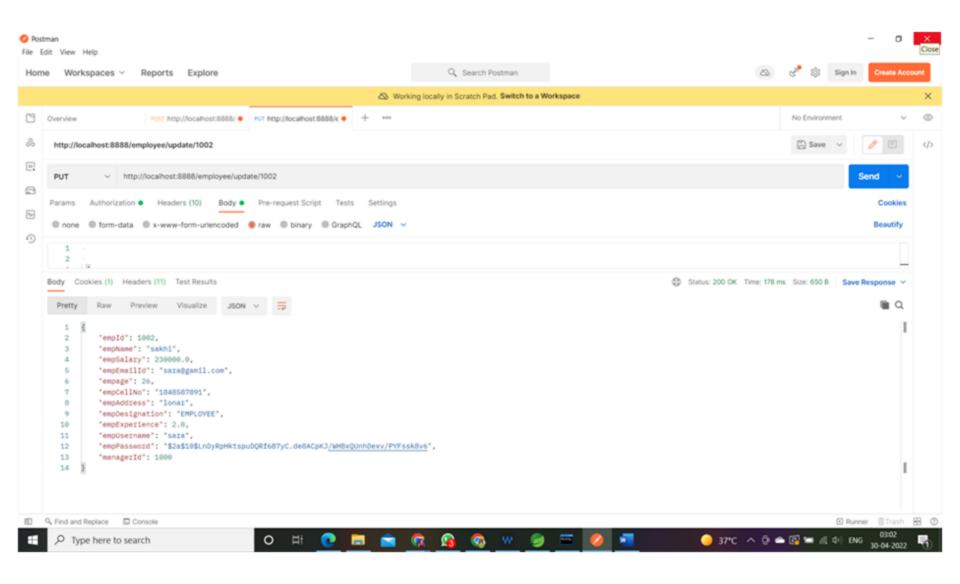
#### 16 UpdateSelf:/manager/updateself/{empld



#### 17 Delete employee: /manager/delete/{empld}

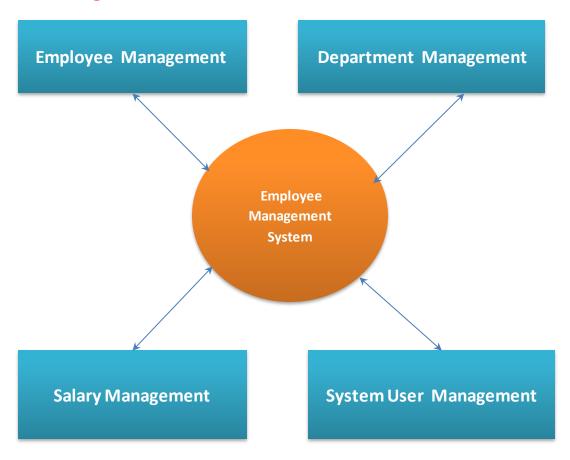


#### 18 Update employee : /employee/update/{empld}



# Diagrams

#### **Data Flow Diagram:**



**DFD – Employee Management System** 

## Conclusion

- ☐ Effectiveness, efficiency, and reliability are the key aspects that make this web-based Employee management system very useful for industrial and several other businesses.
- The proposed project is very flexible to handle new modules and features as per user requirements in future.
- It can also be integrated with other systems such as employee tracking system, employee information management system, employee registration system, etc.