

# Employee Management System (EMS) Documentation

## 1. Introduction

The **Employee Management System (EMS)** is a comprehensive platform designed to simplify and automate HR operations, including employee management, task assignment, performance tracking, and access control. With a user-friendly interface and a robust backend, the system enhances efficiency in managing employee-related processes within an organization.

## 2. Features

The Employee Management System (EMS) includes the following key modules:

- **Employee Management:** Manage employee details, roles, departments, and their reporting hierarchy.
- **Role-Based Access Control:** Restrict access to specific functionalities based on user roles (Admin, Manager, Employee).
- **Employee Authentication:** Secure login system with unique username and password credentials for employees.
- **Data Management:** Add, update, and delete employee records while ensuring data consistency.

## 3. Technology Stack

### Frontend

- HTML, CSS, JS Bootstrap (for UI design)

### Backend

- Django (Python)

### Database

- SQLite

### Deployment

- Hosted on a cloud platform

## 4. System Modules

### 4.1 Employee Management

#### Functionalities:

- Add, update, and delete employee records.
- Assign roles such as Admin, Manager, Team Leader, and Employee.
- Link employees to their respective departments.

- Define and manage the reporting hierarchy.

#### Database Structure:

Column Name	Data Type	Description
employee_id	int (PK)	Unique Employee ID
first_name	varchar(100)	Employee's First Name
last_name	varchar(100)	Employee's Last Name
role_id	int (FK)	Reference to roles table
dept_id	int (FK)	Reference to department table
manager_id	int (FK)	Reporting Manager ID
created_at	datetime	Timestamp of record creation

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#### Database Structure:

Column Name	Data Type	Description
review_id	int (PK)	Unique Review ID
employee_id	int (FK)	Employee being reviewed
reviewed_by	int (FK)	Reviewer ID (Manager/Admin)
rating	int	Performance Rating (1-10)
comments	varchar(300)	Additional feedback
created_at	datetime	Timestamp of review creation

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## 4.2 Role Management

#### Functionalities:

- Admin can add Diferent different Role / Position

#### Database Structure: Role Management

Column Name	Data Type	Description
role_id	int (PK)	Unique Role ID
role_name	varchar(100)	Name of the Role (e.g., Manager, Developer)
description	text	Description of the Role
created_at	timestamp	Timestamp when the role was created
updated_at	timestamp	Timestamp when the role was last updated

## Database Structure: Employee Role Mapping

Since an **employee can have multiple roles**, we need a **many-to-many relationship** using a mapping table:

Column Name	Data Type	Description
<b>emp_role_id</b>	int (PK)	Unique ID for Employee-Role mapping
<b>employee_id</b>	int (FK)	Foreign Key referencing Employee Table
<b>role_id</b>	int (FK)	Foreign Key referencing Role Table
<b>assigned_at</b>	timestamp	Timestamp when the role was assigned

### 4.3 : Department Management

#### Functionality :

- **Add Department**
  - Function: Allows an admin to add a new department to the system.
  - Input: Department name, description.
  - Logic: Insert the new department's details into the Department table.
  - Output: The department is added, and the created\_at field is populated automatically (using the current timestamp).
- **Update Department**
  - Function: Allows an admin to update the details of an existing department.
  - Input: Department ID, updated department name, description.
  - Logic: Update the corresponding department in the Department table.
  - Output: Department's updated\_at timestamp is updated.
- **Delete Department**
  - Function: Allows an admin to delete a department from the system.
  - Input: Department ID.
  - Logic: Delete the department from the Department table.
  - Output: Any employee assigned to the department is unassigned, and the department record is deleted.
- **View Department Details**

- Function: Allows users or admins to view details of a specific department.
- Input: Department ID.
- Logic: Retrieve and display the department's name, description, created\_at, and updated\_at timestamps.

## 4.5 User Authentication

### Functionalities:

- Secure login system with username and password.
- Role-based access control for different user permissions.
- Password reset functionality for account recovery.

### Database Structure:

Column Name	Data Type	Description
user_id	int (PK)	Unique User ID
username	varchar(100)	Unique Username
password	varchar(100)	Encrypted Password
role_id	int (FK)	Assigned User Role
created_at	datetime	Timestamp of user creation

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## 5. Deployment

- The application is hosted on a cloud-based platform for high availability and scalability.
  - Version control is maintained through a GitHub repository for seamless updates and collaboration.
  - The system operates 24/7 on a live server, ensuring uninterrupted access.
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## 6. Conclusion

The **Employee Management System (EMS)** is a comprehensive solution designed to optimize HR operations by automating employee management, task tracking, and performance evaluation. With its modular architecture and

scalability, the system ensures an efficient and user-friendly experience for managing workforce-related activities.

For further details, refer to the **GitHub repository** and **deployment link**.

Github :

[https://github.com/Aartibhosalepatil/Internship\\_proj](https://github.com/Aartibhosalepatil/Internship_proj)

PythonAnywhere:

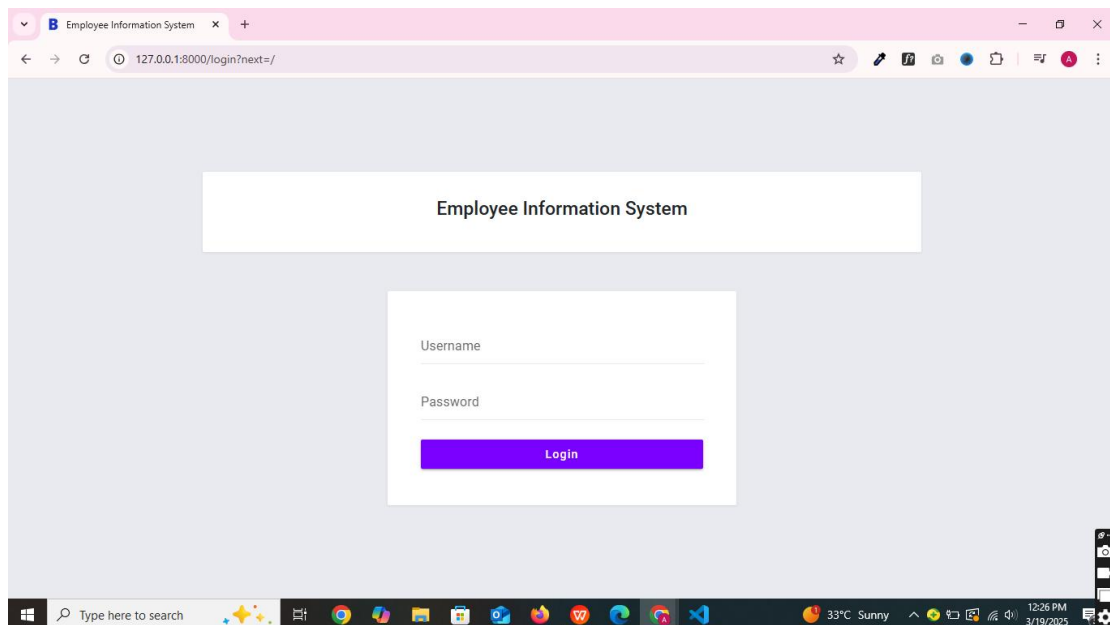
<https://bhosaleari.pythonanywhere.com/>

**Screenshots :**

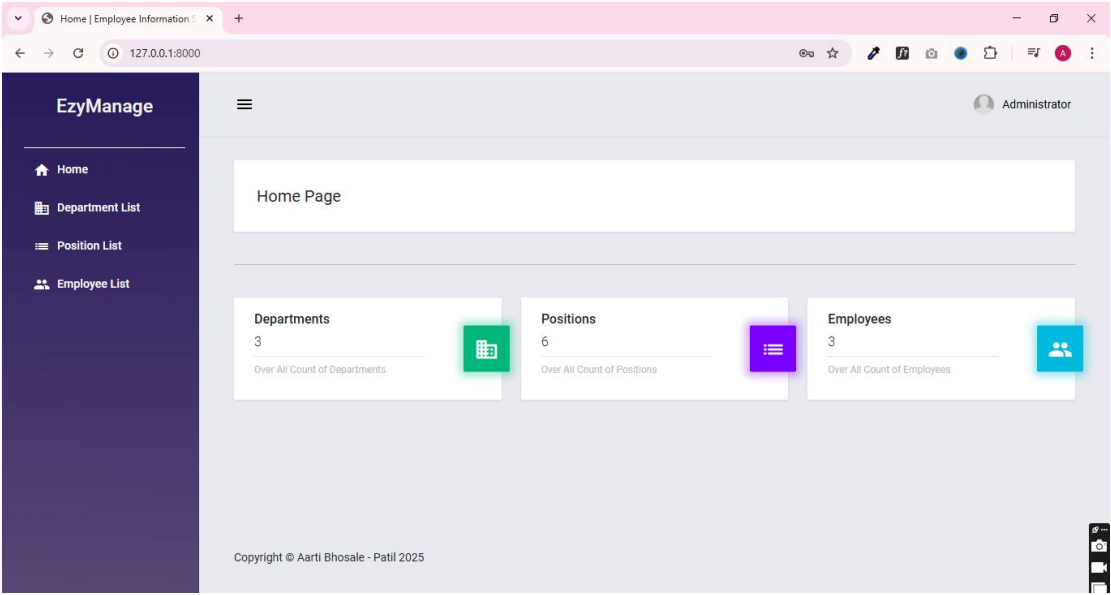
**Login Page :**

Username : admin

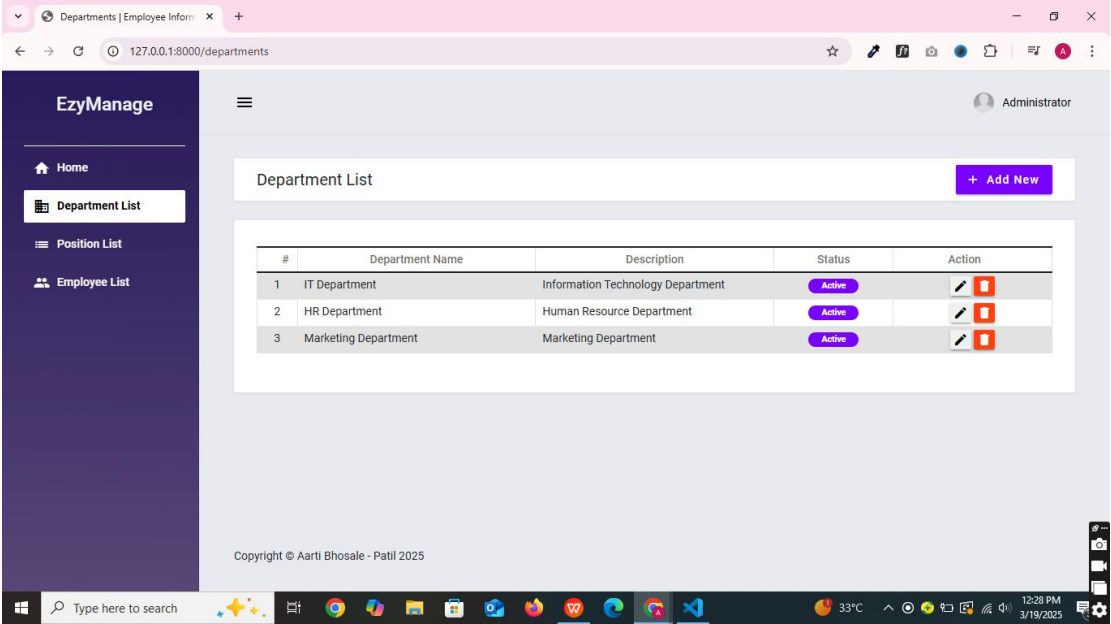
Password : admin123



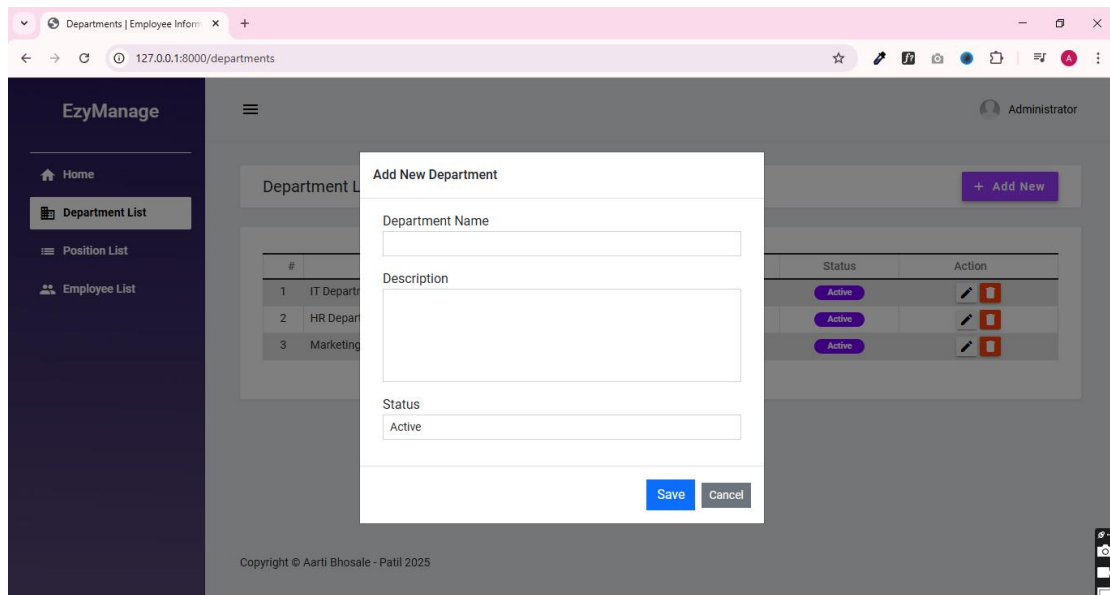
Homepage:



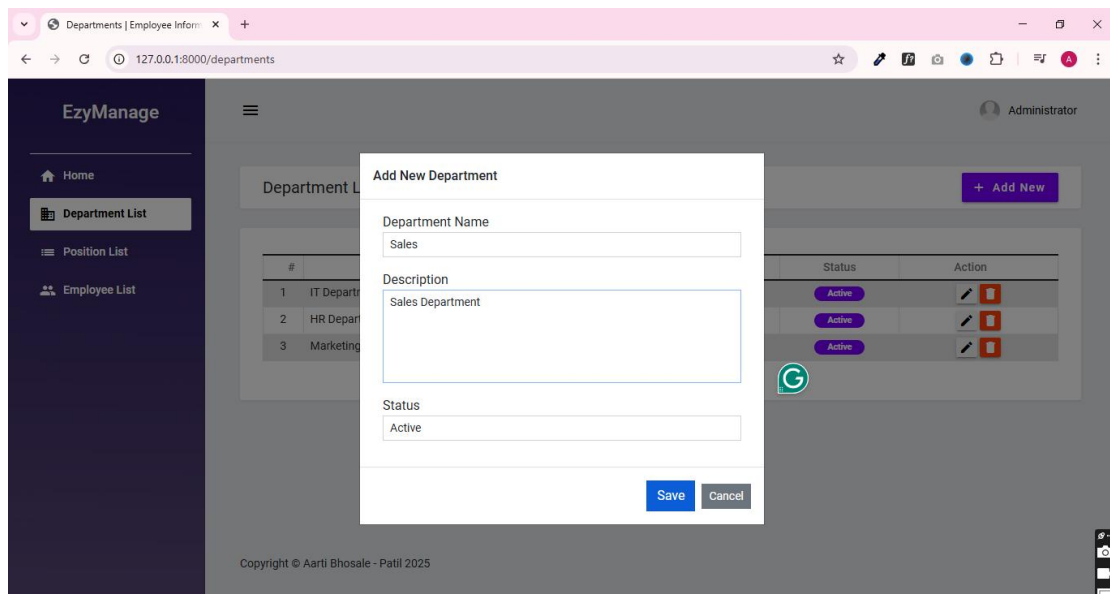
Department List :

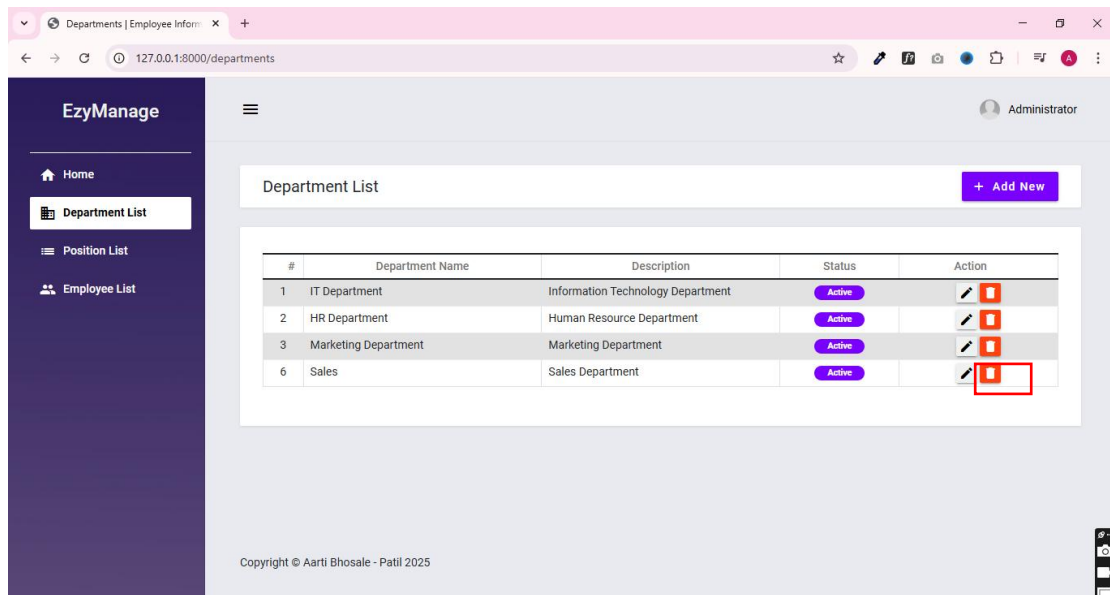


Adding New Departmet :

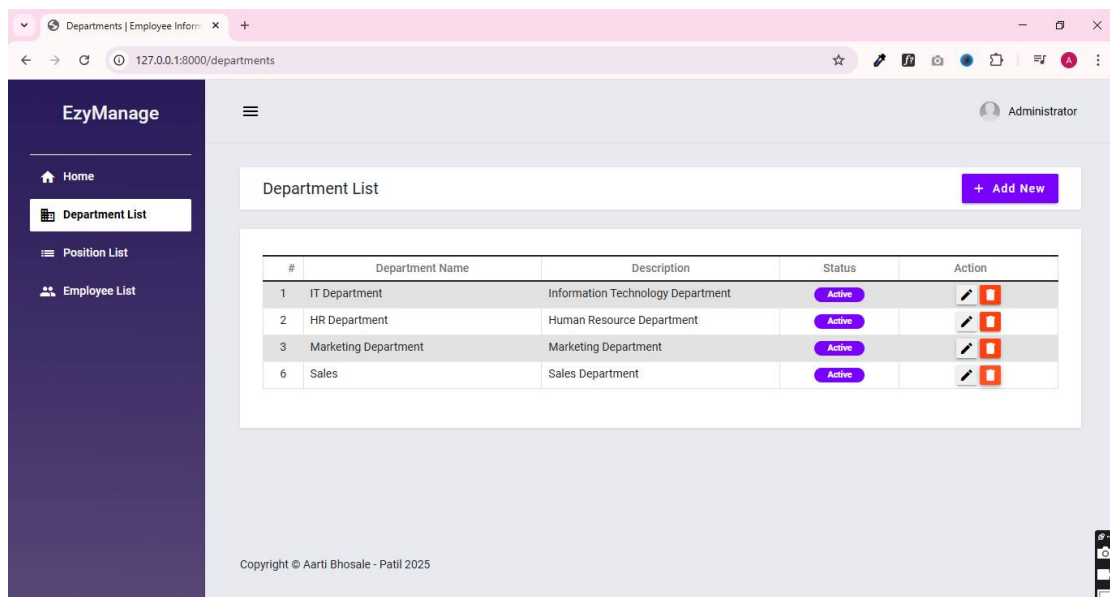


## After Adding Department :





## Delete Department By clicking on Delete Icon:





## Edit Department By Clicking Edit Icon:

EzyManage

Home

Department List

Position List

Employee List

Department List

+ Add New

#	Department Name	Description	Status	Action
1	IT Department	Information Technology Department	Active	<div><div></div><div></div></div>
2	HR Department	Human Resource Department	Active	<div><div></div><div></div></div>
3	Marketing Department	Marketing Department	Active	<div><div></div><div></div></div>
6	Sales	Sales Department	Active	<div><div></div><div></div></div>

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## Position / Role List :

EzyManage

Home

Department List

Position List

Employee List

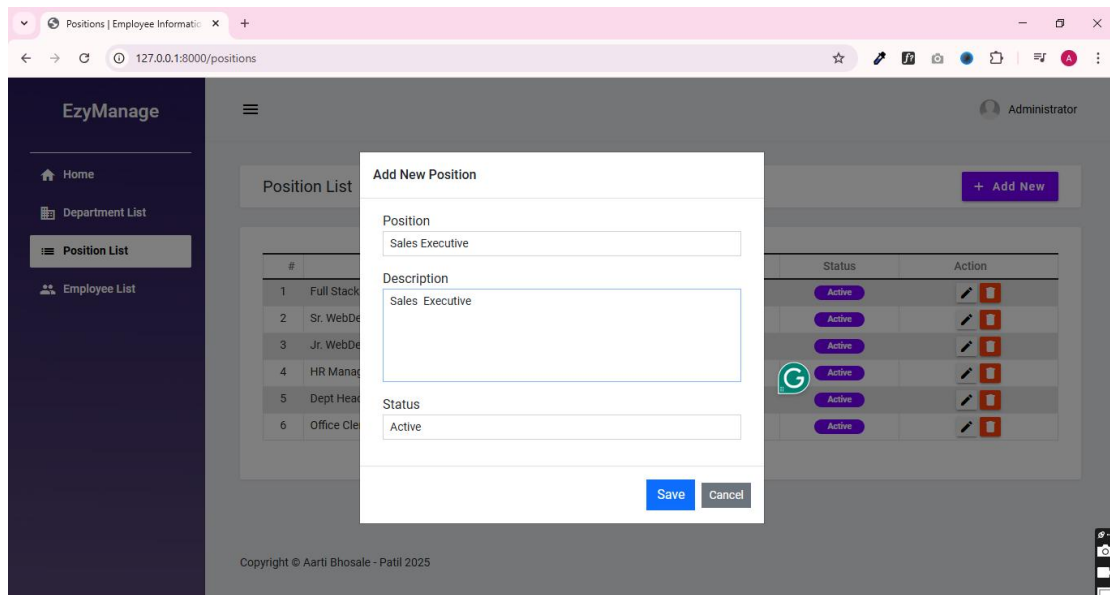
Position List

+ Add New

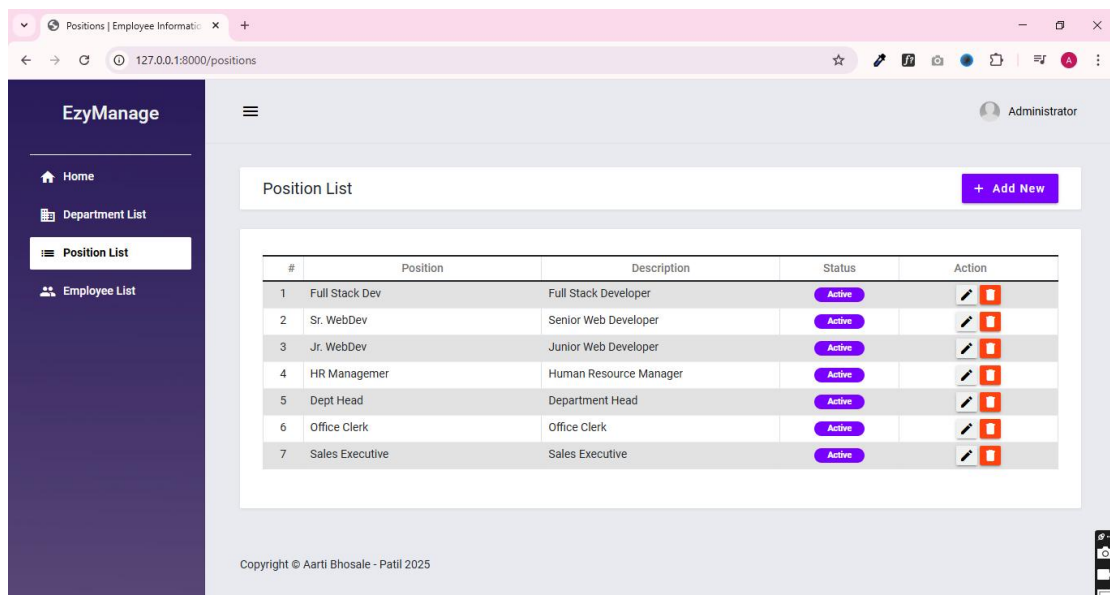
#	Position	Description	Status	Action
1	Full Stack Dev	Full Stack Developer	Active	<div><div></div><div></div></div>
2	Sr. WebDev	Senior Web Developer	Active	<div><div></div><div></div></div>
3	Jr. WebDev	Junior Web Developer	Active	<div><div></div><div></div></div>
4	HR Managemer	Human Resource Manager	Active	<div><div></div><div></div></div>
5	Dept Head	Department Head	Active	<div><div></div><div></div></div>
6	Office Clerk	Office Clerk	Active	<div><div></div><div></div></div>

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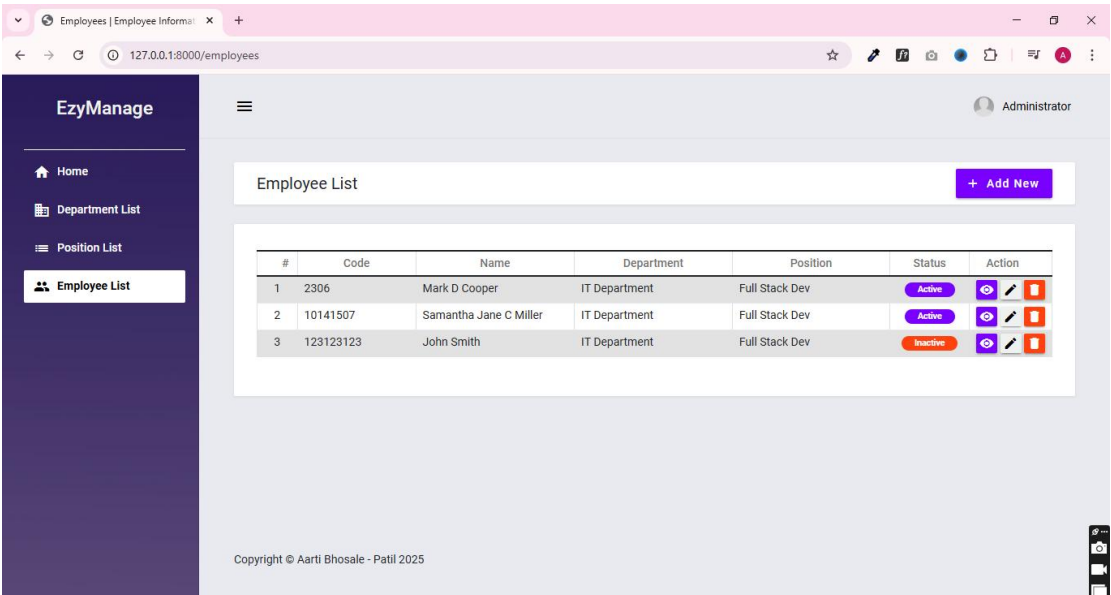
## Adding New Position / Role :



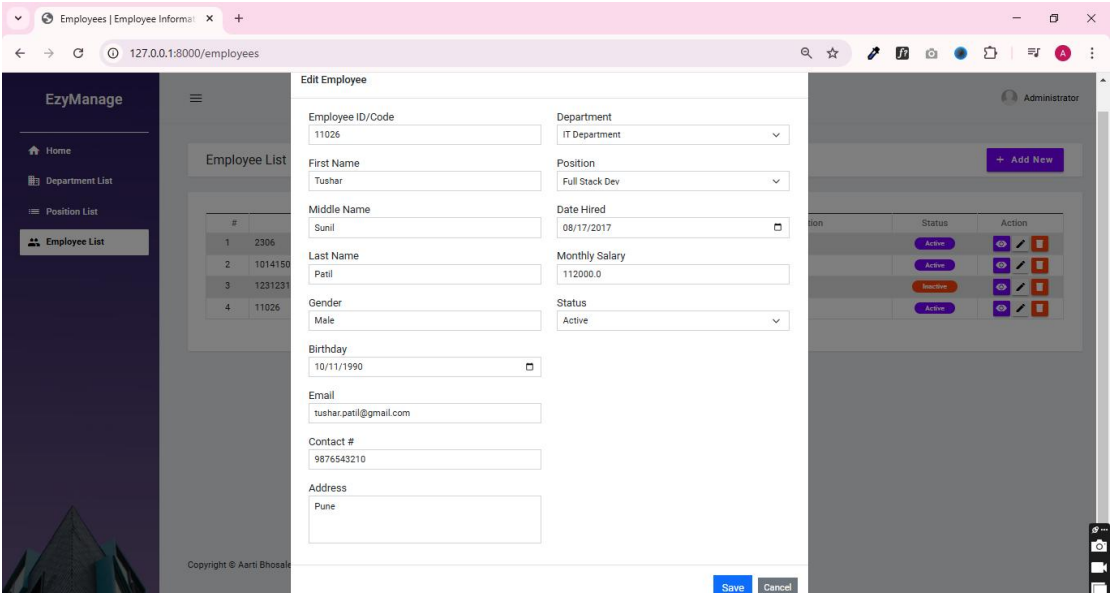
## After Adding New Position / Role :



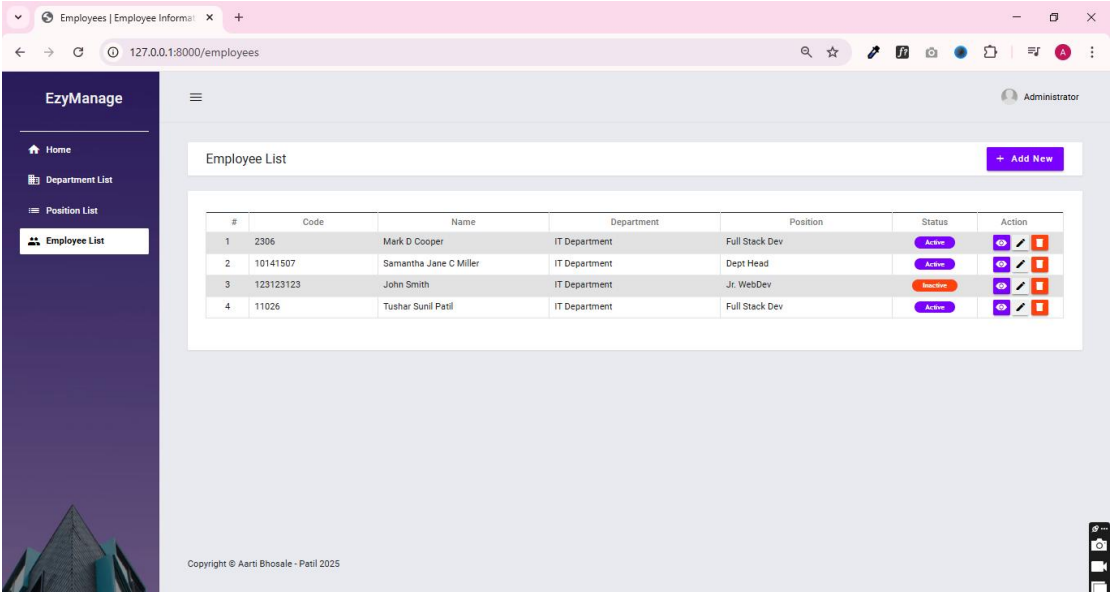
Employee List :



Adding New Employee :



After Adding New Employee :



After performing Different task Home page will be updated :

