# EmpLeaveHub: Project Documentation

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## 1. Introduction

**EmpLeaveHub** is a web-based Employee Leave Management System designed to simplify and digitize the leave application and approval process within an organization. The system provides role-based dashboards for both employees and administrators, ensuring a smooth workflow for leave management.

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## 2. Background of the Project

### Problem Statement

Many organizations still rely on manual or outdated methods to manage employee leave records, which leads to errors, delays, and a lack of transparency.

### Motivation

Our goal was to build a digital platform that automates leave-related tasks, saves time, improves accuracy, and provides a user-friendly interface for both employees and administrators.

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## 3. Objectives

- To digitize the leave application and approval process.
- To allow employees to easily apply for leave and view history.
- To enable administrators to manage departments, leave types, and employee records.
- To reduce manual errors and improve efficiency.
- To maintain secure role-based access control.

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# 4. Scope

### Covered:

- Employee dashboard and leave application
- Admin dashboard with department-wise stats
- Leave type creation and quota settings
- Employee and department management
- Leave approval/rejection by admin
- Leave history and reporting
- Profile and password management
- Email notifications via PHPMailer

### Not Covered:

- Online salary management
- Real-time notifications or mobile app version
- Integration with external HRMS tools

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# 5. Literature Review / Related Work

- **HRM Software (Zoho People, BambooHR):** Offer leave and attendance tracking.
- **Open-source HRM Systems:** Focus on general HR processes, often complex.
- **Our Focus:** Simplicity, easy navigation, and practical leave tracking features.

**Relevant Concepts:**

- Role-Based Access Control (RBAC)
- CRUD operations
- Secure user authentication
- Email integration (PHPMailer)

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# 6. Methodology

## Technologies Used

**Frontend:**

- HTML5
- CSS3
- Bootstrap 5
- JavaScript
- Material Icons

**Backend:**

- PHP 7+
- MySQL
- PDO for secure database connections

**Email System:**

- PHPMailer

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## 🛠️ Development Workflow

1. Requirement Analysis
2. UI Design and Wireframing
3. Database Design
4. Module-wise Development
5. Testing and Debugging
6. Final Deployment

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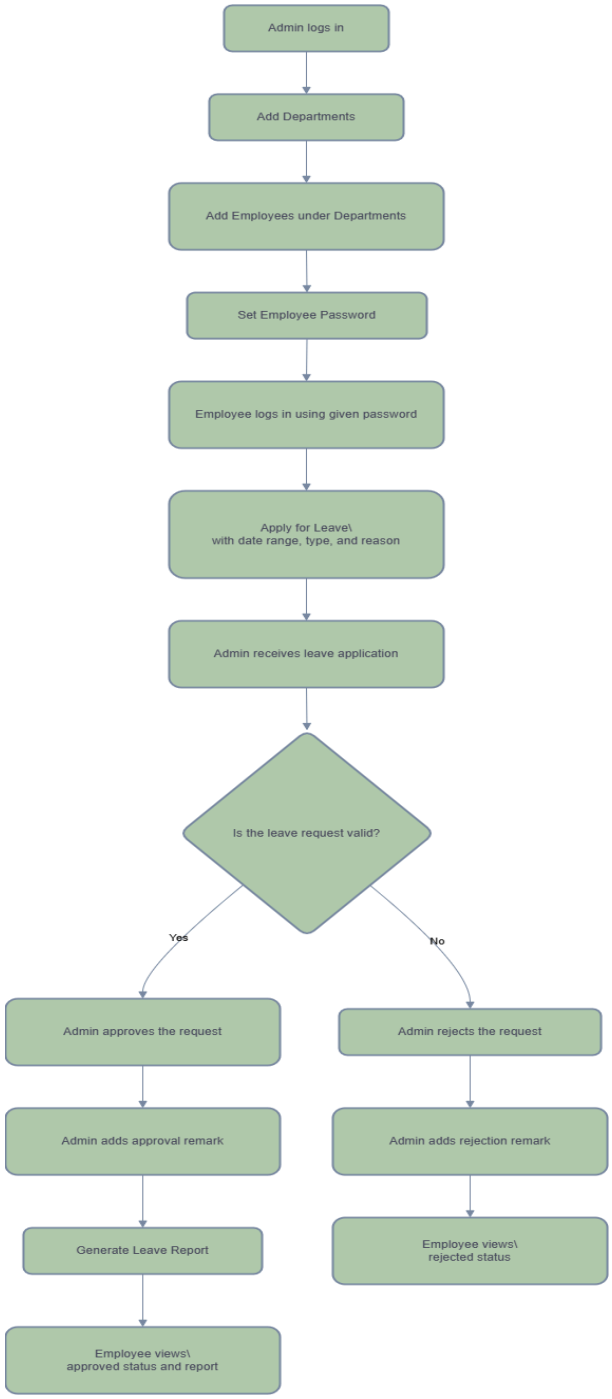
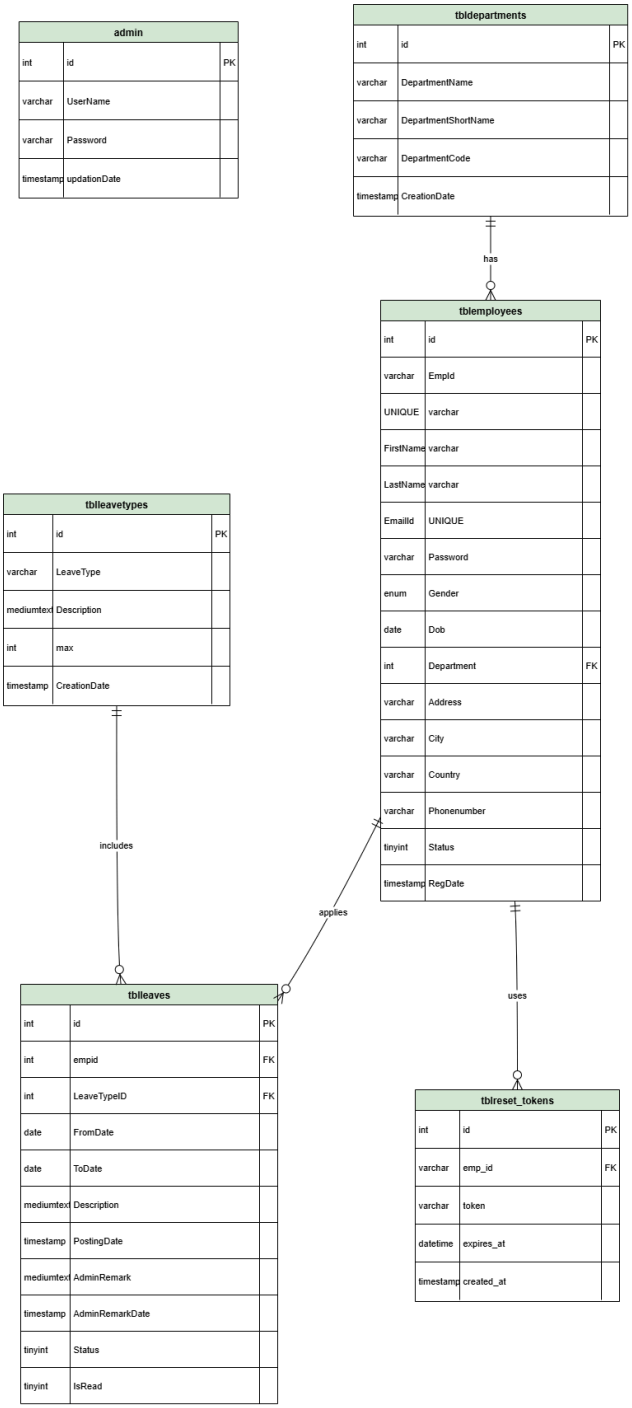
## 📐 Design Models

- **Flowchart:** Leave request flow from employee to admin decision.



- **ER Diagram:**


admin
int id PK
varchar UserName
varchar Password
timestamp updationDate
tbldepartments
int id PK
varchar DepartmentName
varchar DepartmentShortName
varchar DepartmentCode
timestamp CreationDate
has
tblemployees
int id PK
varchar EmpId
UNIQUE varchar
FirstName varchar
LastName varchar
EmailId UNIQUE
varchar Password
enum Gender
date Dob
int Department FK
varchar Address
varchar City
varchar Country
varchar Phonenumber
tinyint Status
timestamp RegDate
tblleavetypes
int id PK
varchar LeaveType
mediumtext Description
int max
timestamp CreationDate
includes
applies
uses
tblleaves
int id PK
int empid FK
int LeaveTypeID FK
date FromDate
date ToDate
mediumtext Description
timestamp PostingDate
mediumtext AdminRemark
timestamp AdminRemarkDate
tinyint Status
tinyint IsRead
tblreset_tokens
int id PK
varchar emp_id FK
varchar token
datetime expires_at
timestamp created_at

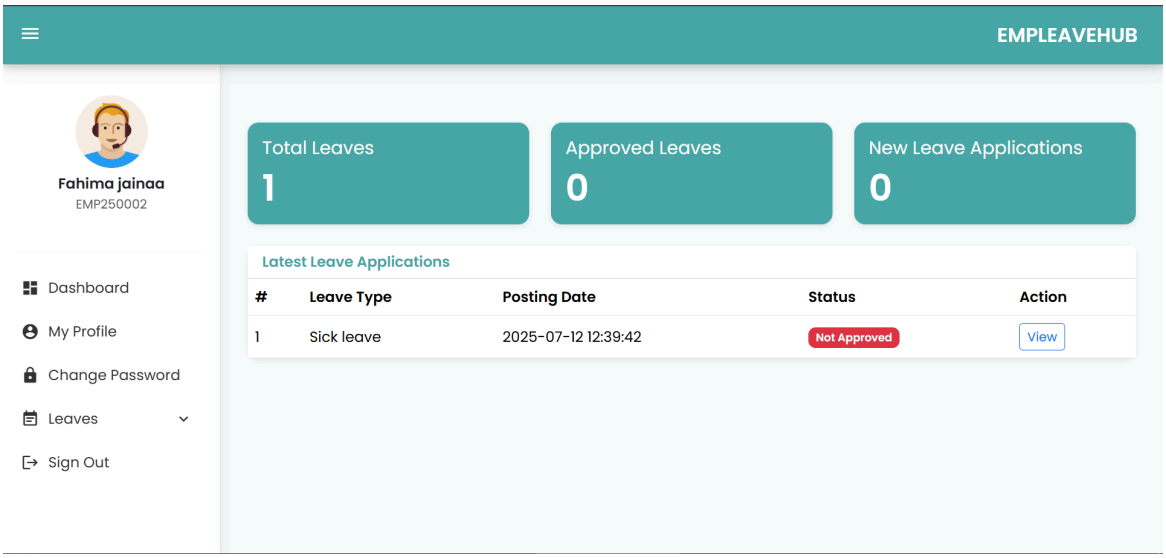
# 7. Implementation / Development

## 💻 Development Process

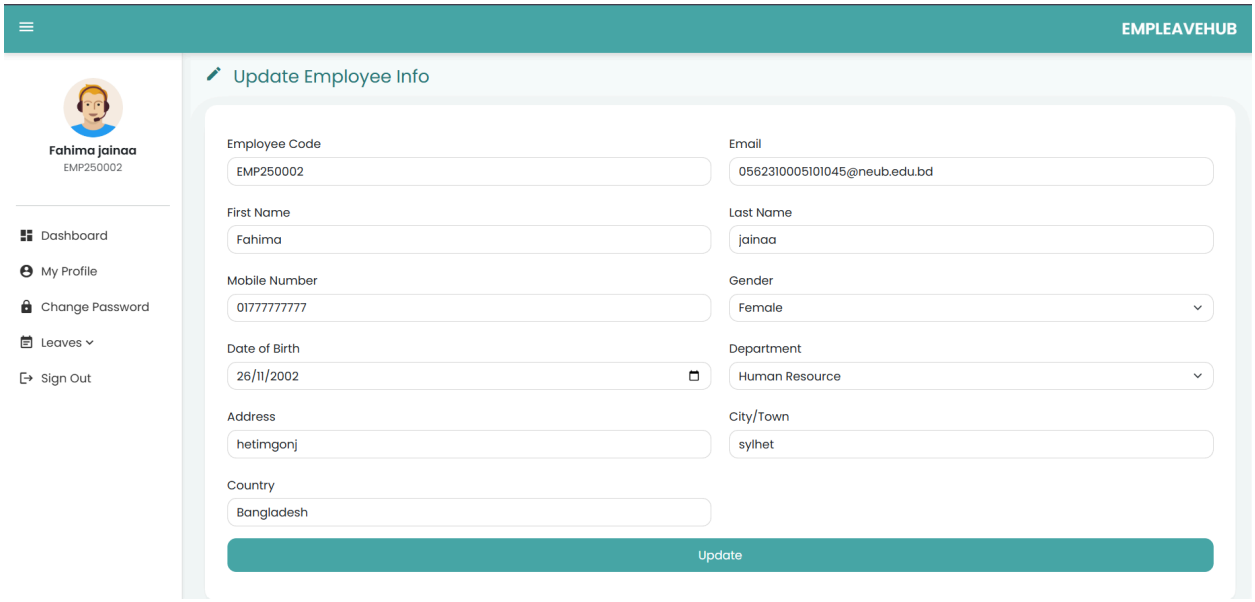
- Role-based login for employees and admins
- Separate dashboards with conditional views
- Modular pages for leave, profile, and management
- Form validation and secure password handling
- Email integration for password resets

## Screenshots & Snippets

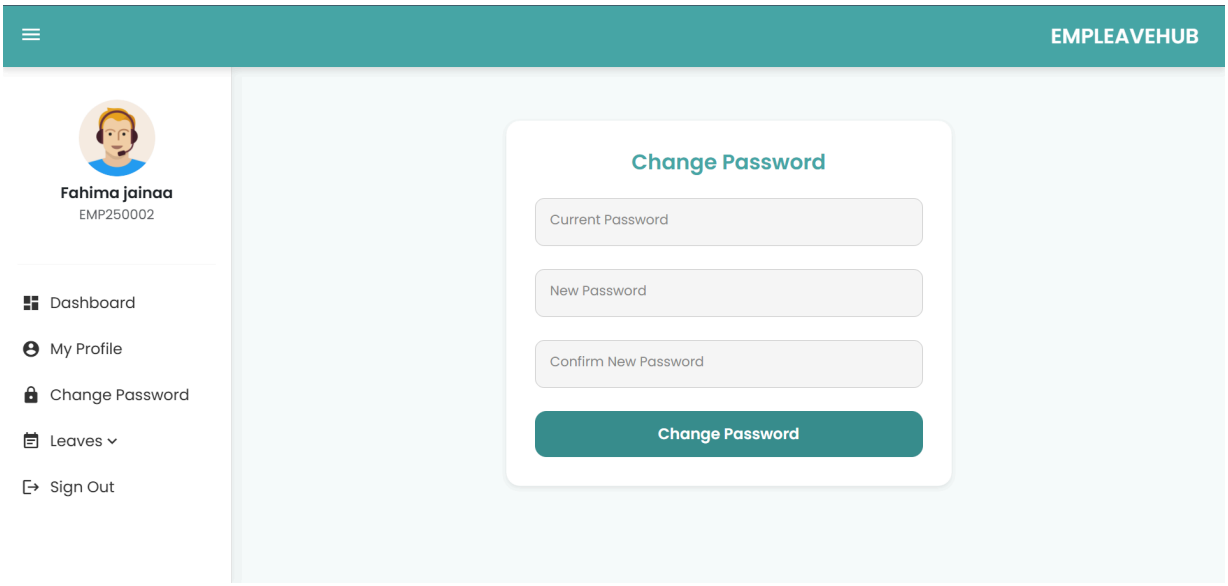
- Employee Dashboard



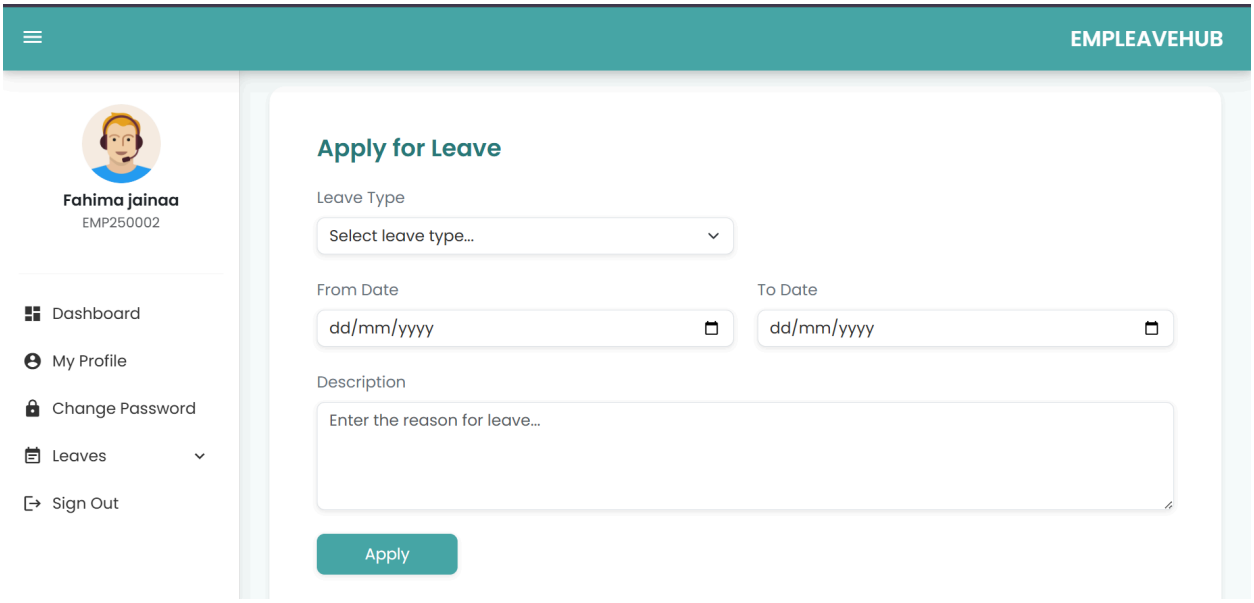

- Employee profile



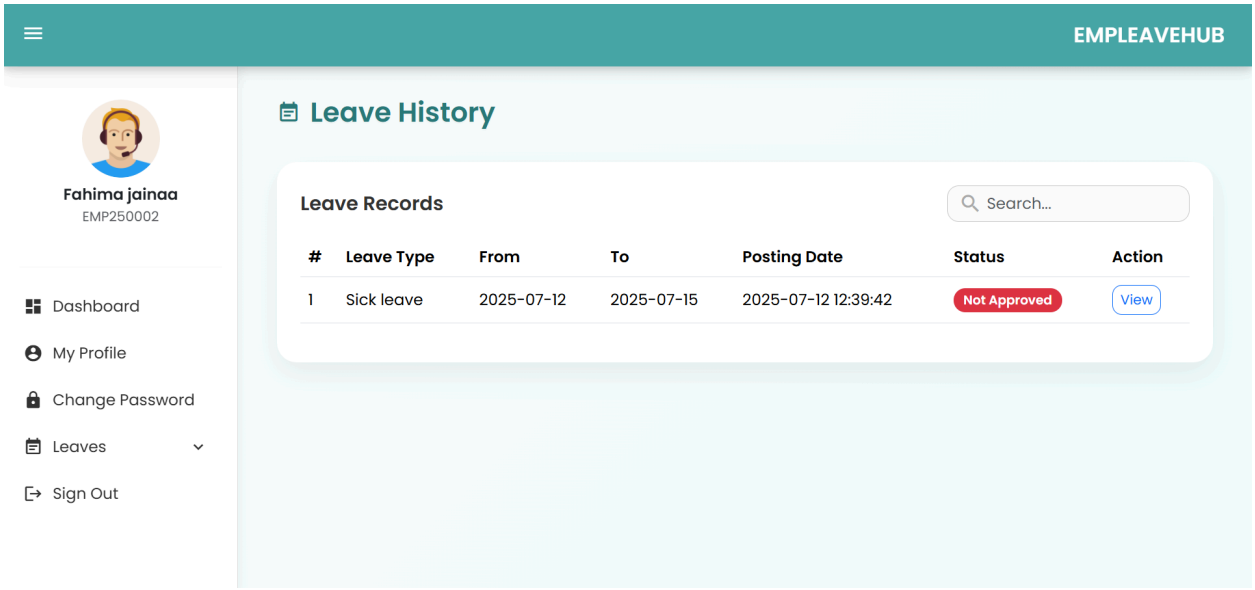
- Employee Change Password



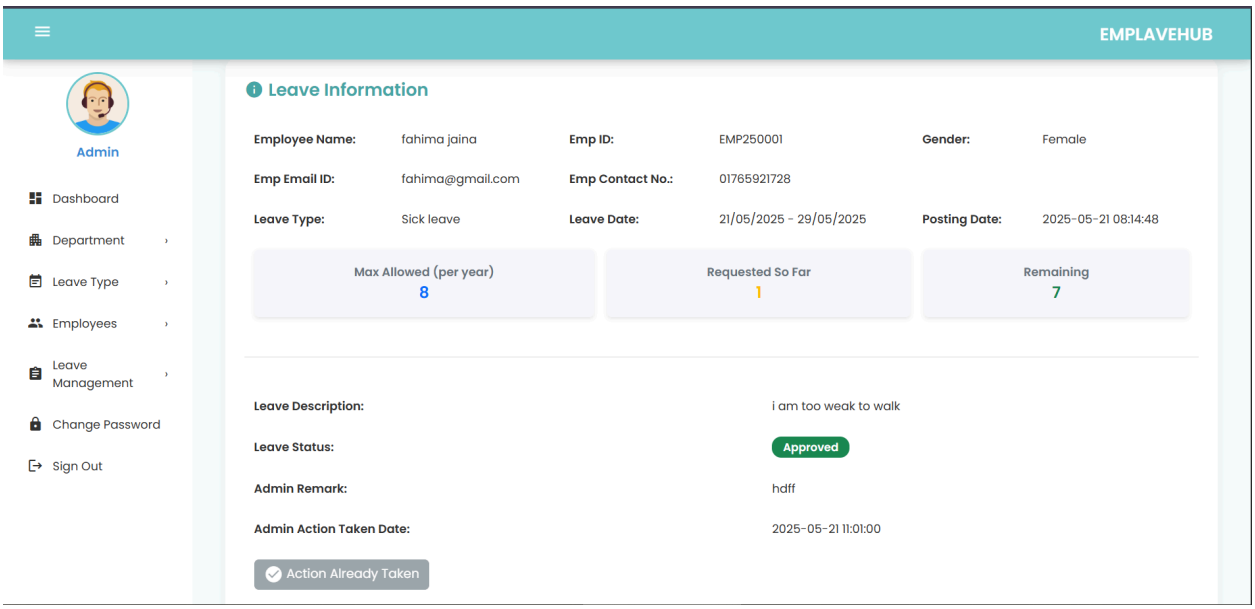

- Apply Leave



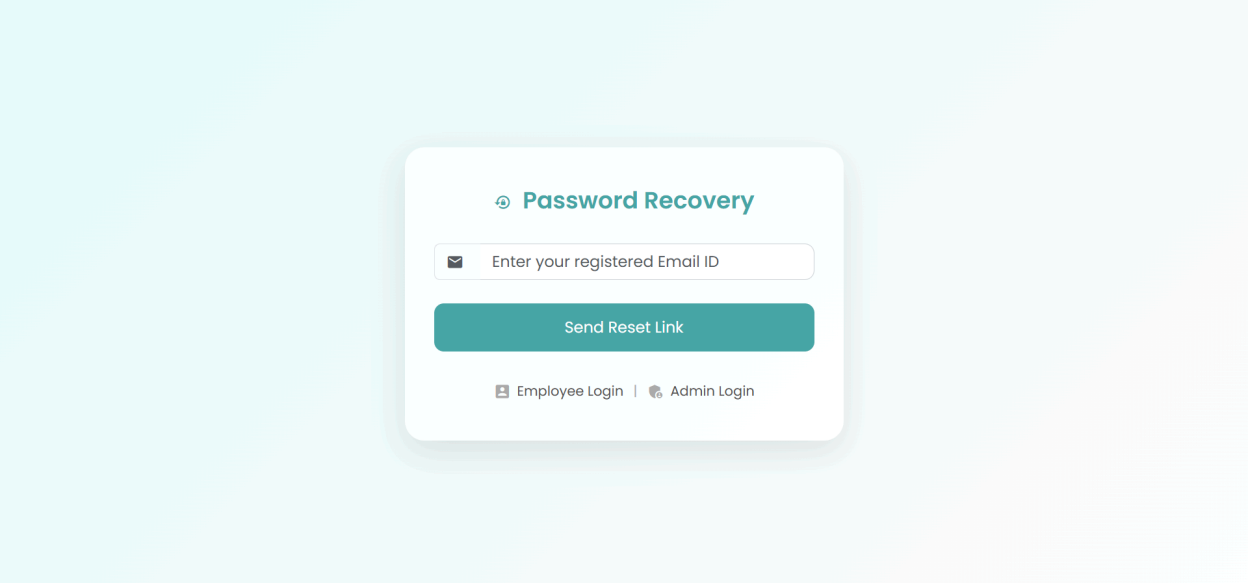
- Leave history



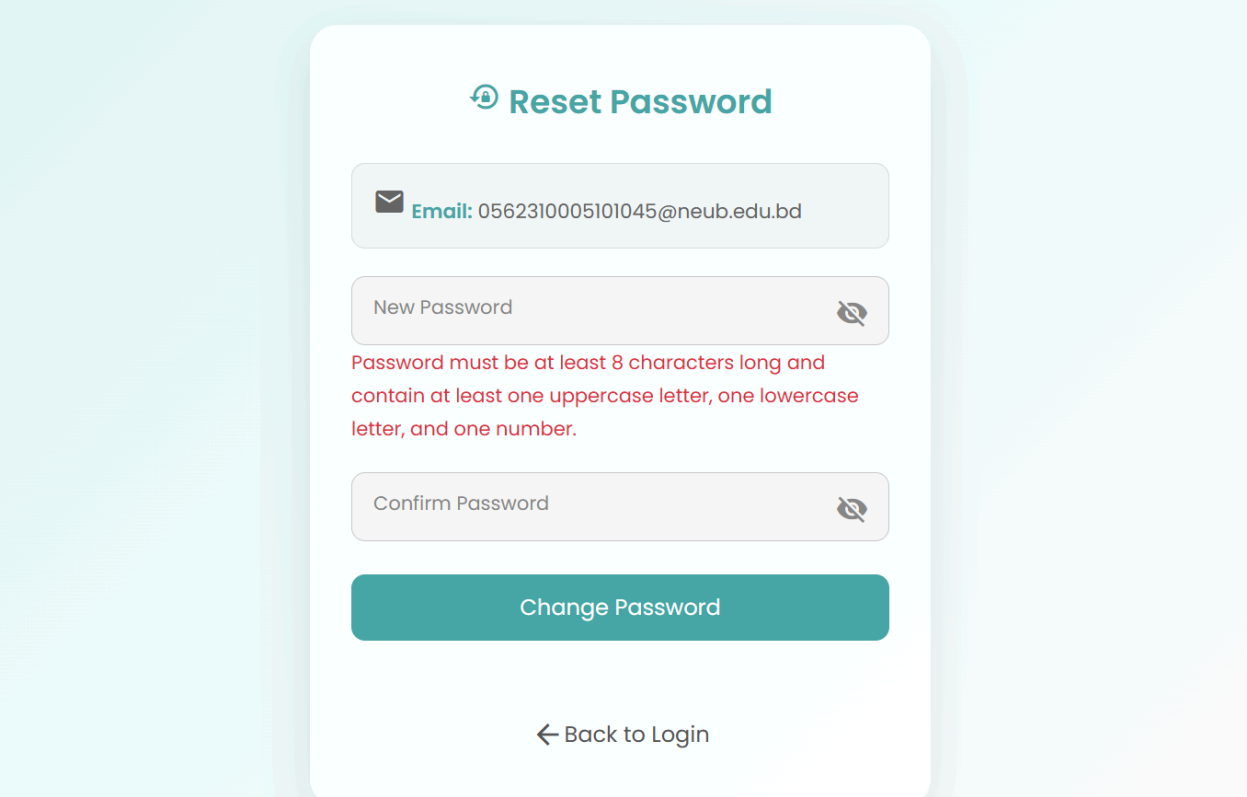

- Leave Report



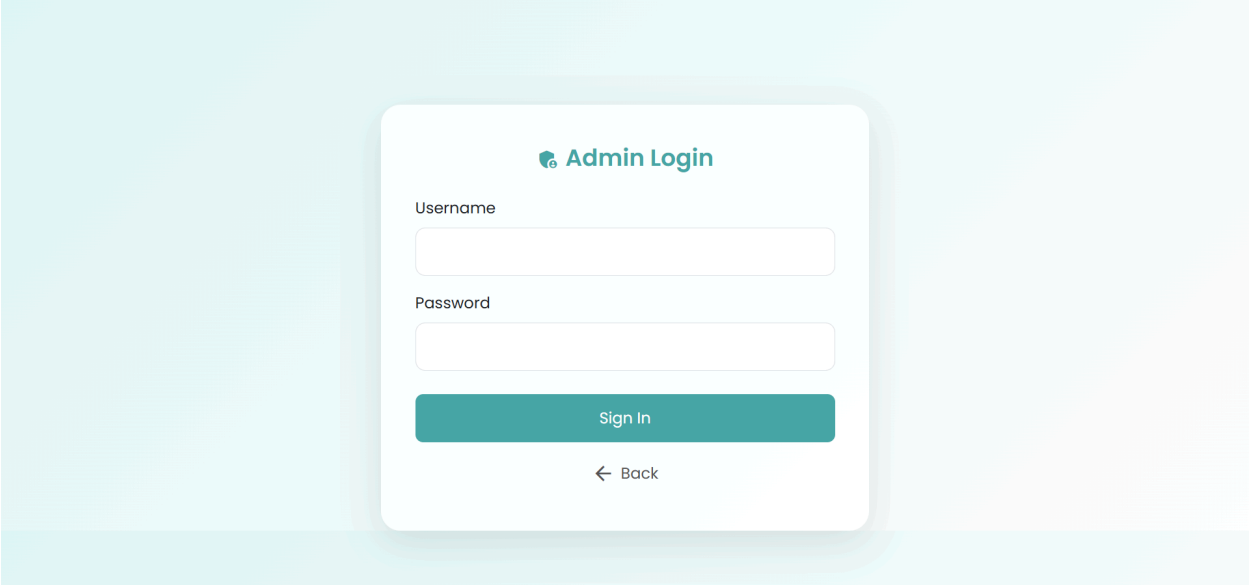
- Password Recovery



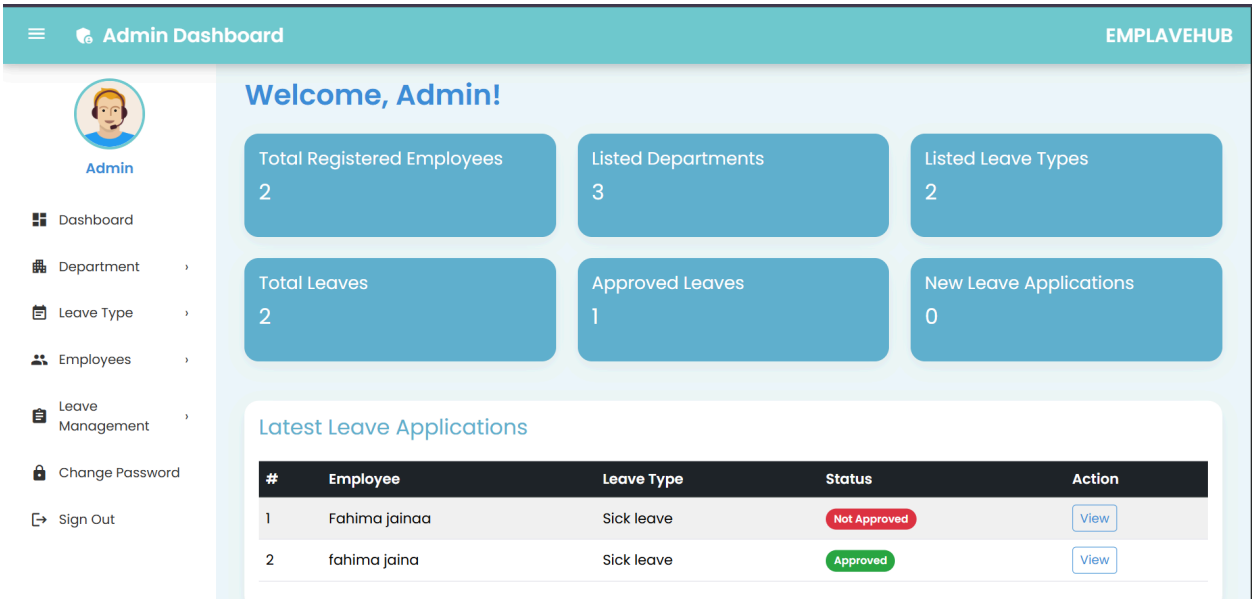

- Password reset



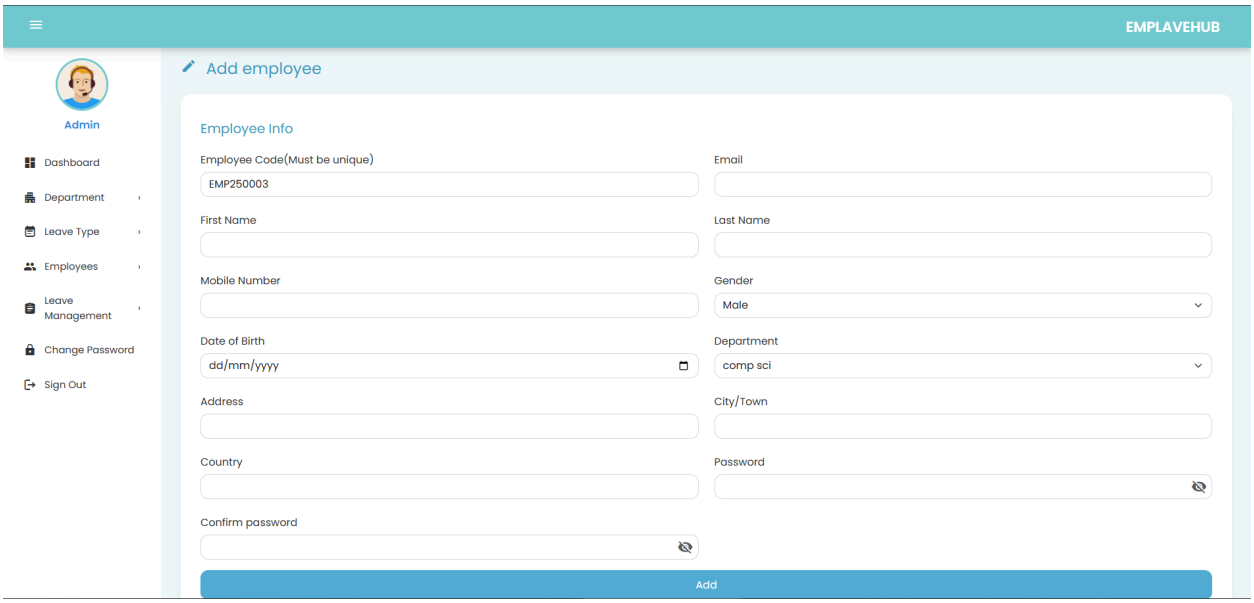
- Admin Login



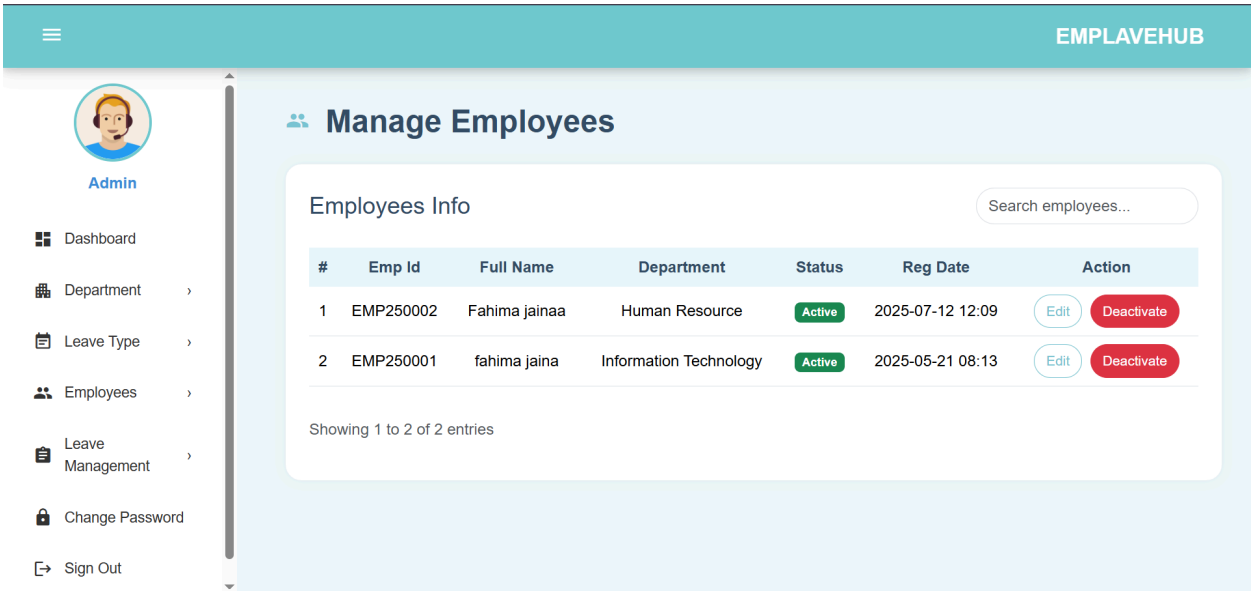

- Admin Dashboard



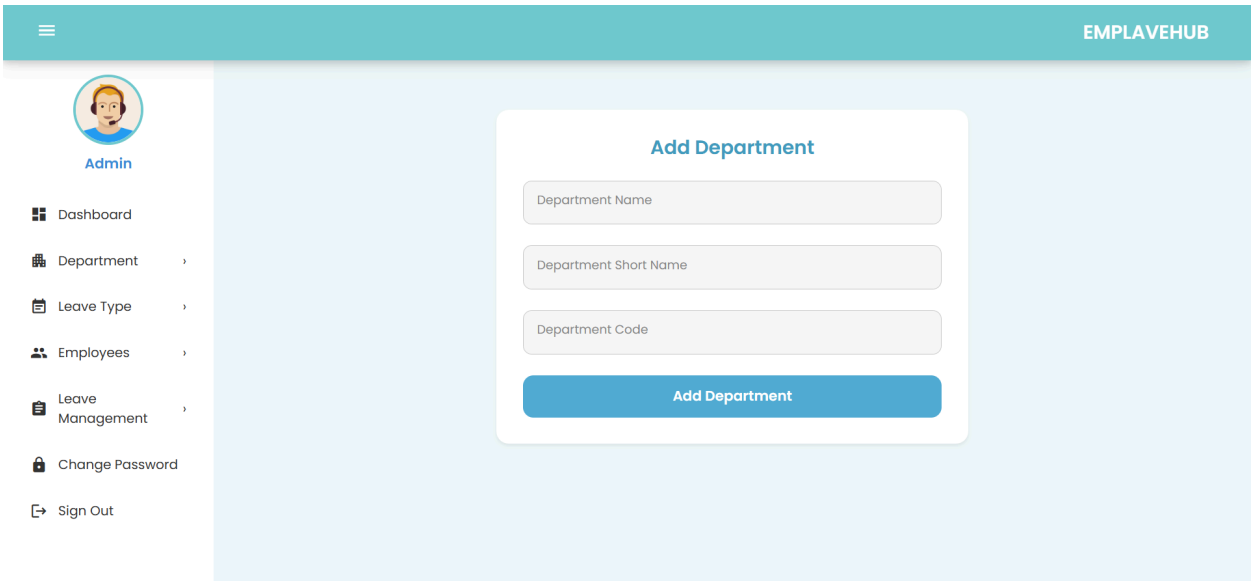
- Add Employee



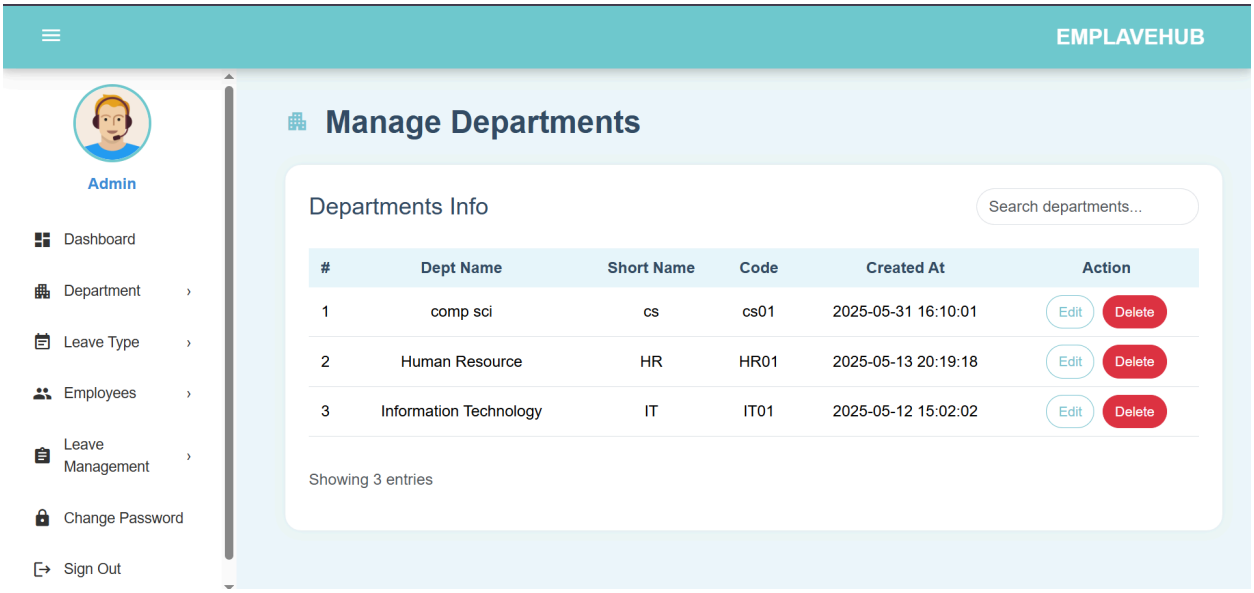

- Manage Employee



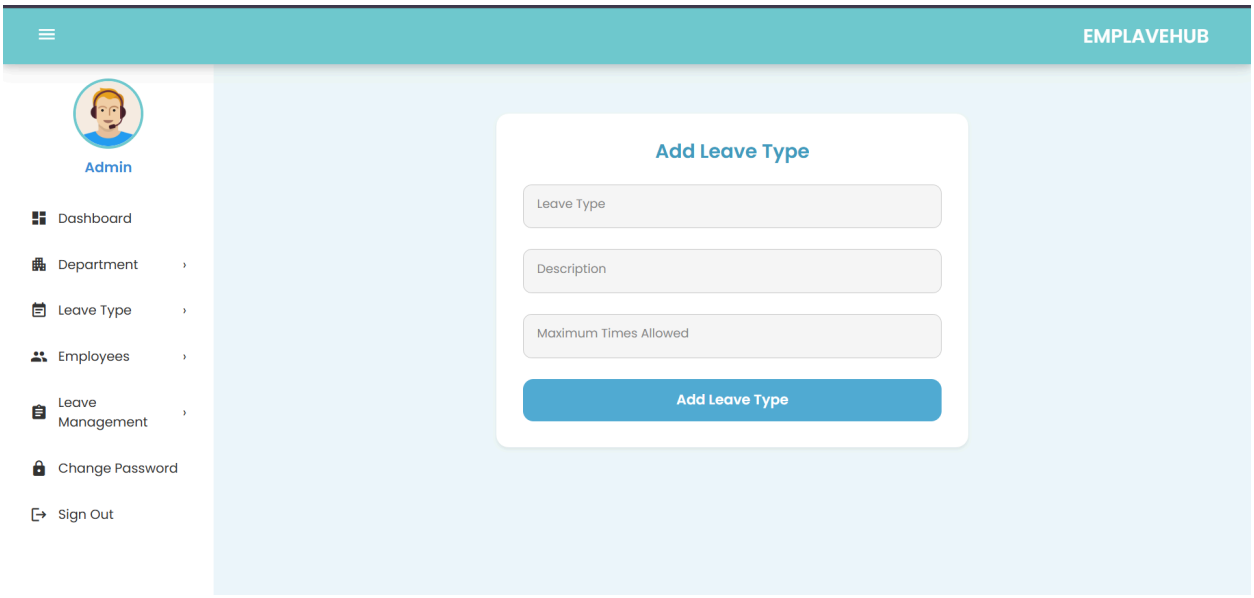
- Add Department



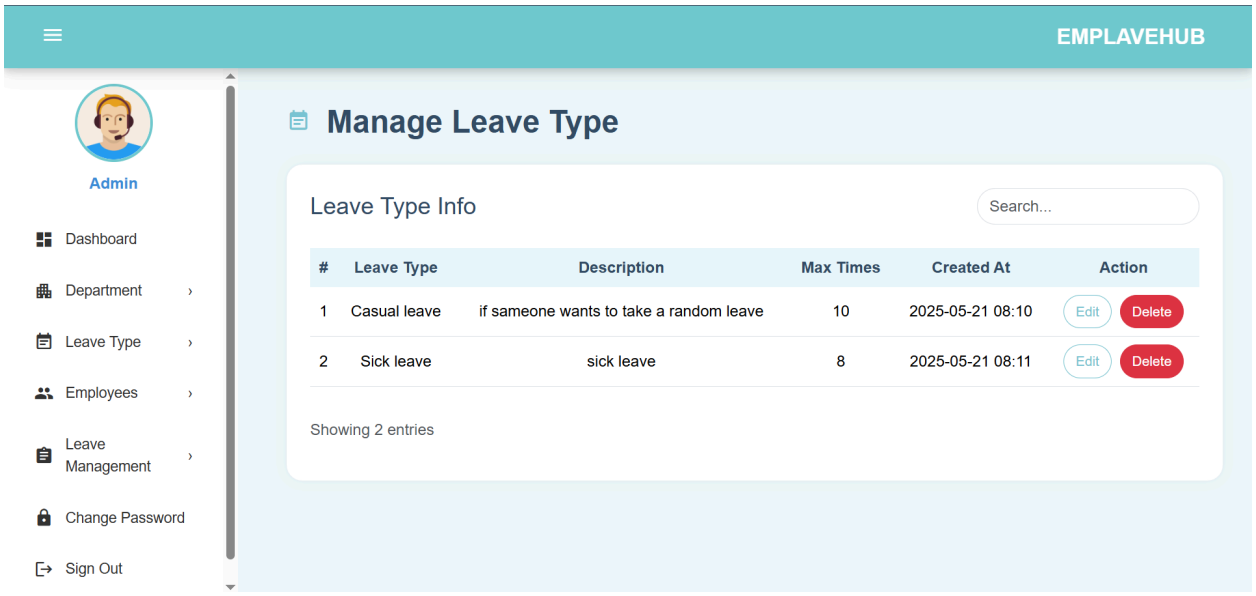

- Manage Department



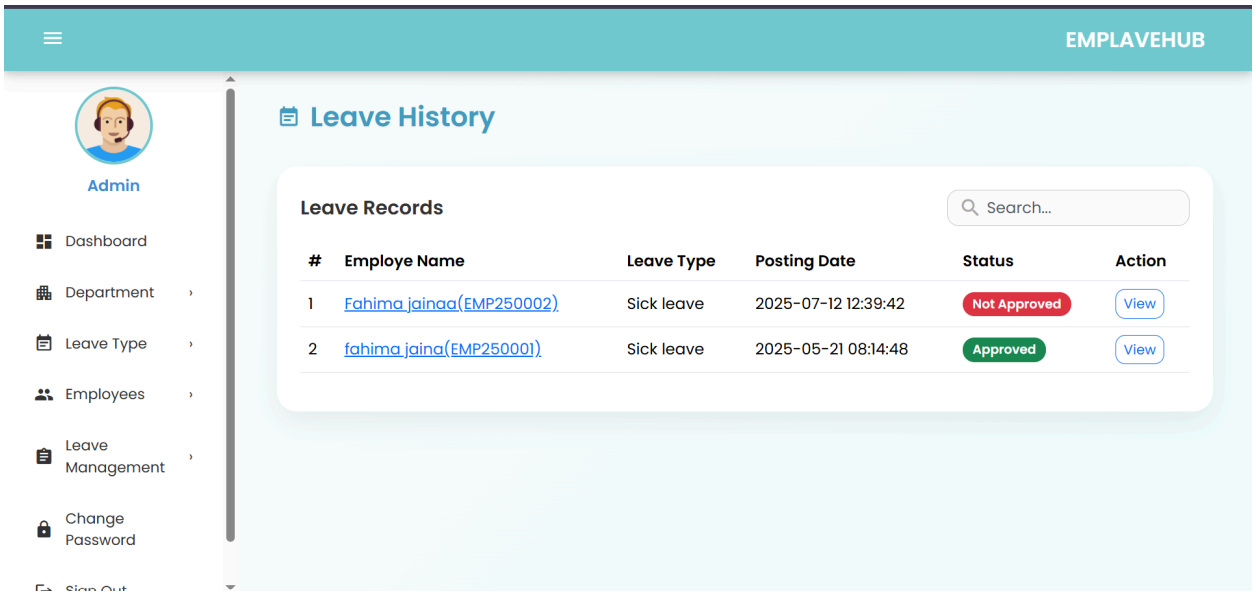
- Add Leave type



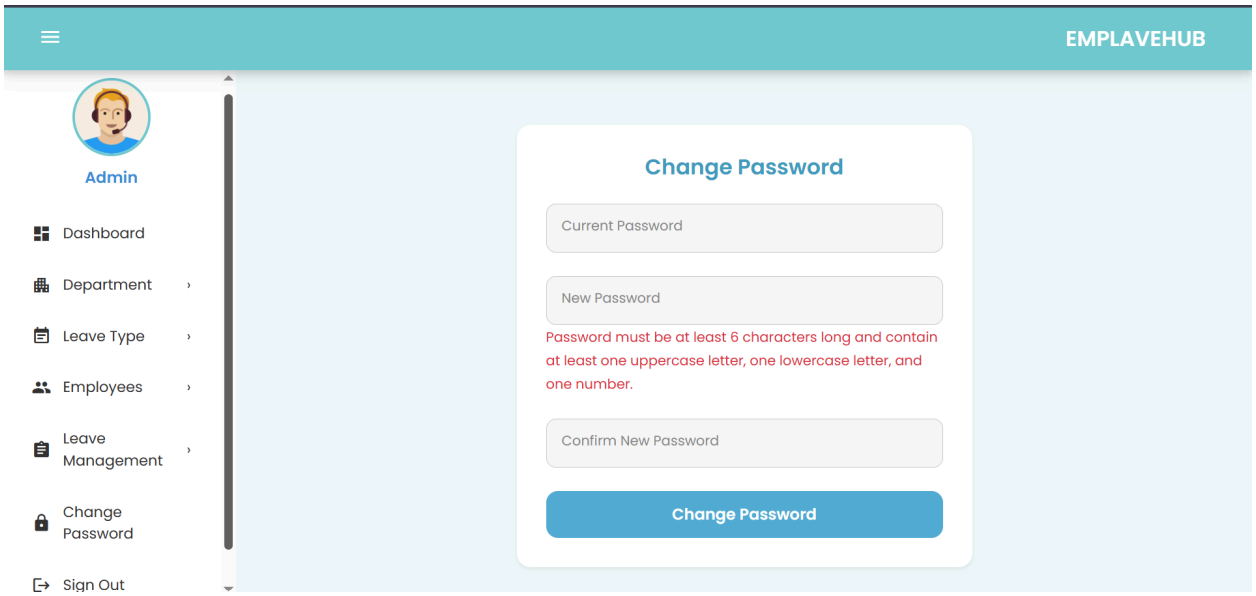

- Manage Leave Type



- Leave History




- Change Password



### 🏗️ System Architecture

**1. Architecture Style**

Three-Tier Architecture:
**Client (Frontend) ↔ Server (PHP Backend) ↔ Database (MySQL)**

**2. Layers Overview**

- **Presentation Layer (HTML/CSS/JS/Bootstrap)**
  Handles UI and user interaction.

- **Application Layer (PHP)**
  Processes logic, routes requests, handles database operations.

- **Data Layer (MySQL)**
  Stores all records with relationships and constraints.

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# 8. Results / Analysis

- Fully working web-based leave management system
- Separate dashboards for employees and admins
- Leave history and statistics working correctly
- Admin can manage departments, leave types, and employees
- Password reset via email is functional

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## 9. Challenges Faced

| Challenge | Solution |
| --- | --- |
| Designing user-friendly UI | Used Bootstrap and Material Icons |
| Handling secure login and roles | Applied session-based role control |
| Email setup for password reset | Integrated PHPMailer |
| Managing data relations | Used proper foreign keys and database normalization |

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## 10. Conclusion

EmpLeaveHub simplifies the leave management process by providing a modern, easy-to-use platform for employees and admins.
Through this project, we learned full-stack web development, secure coding practices, and the value of teamwork.

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## 11. Future Scope

- Add real-time notifications for leave updates
- Create a mobile app version
- Integrate attendance tracking and salary management
- Generate analytics and visual reports for HR insights

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