

Data Base Project

Employee Management System

Semester Project

Session 2023-2027

BS in Artificial Intelligence

Course: DataBase

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Group Members

Sr.#	Roll no	Student Name
1	SU92-BSAIM-F23-062	Minahil Iqbal
2	SU92-BSAIM-F23-068	Mahak Farhan
3	SU92-BSAIM-F23-076	Fatima Nadeem
4	SU92-BSAIM-F23-113	Warisha Hassan

Introduction

This project is a console-based application that implements a basic **Employee Management System** using **SQL**. The system allows adding, searching, updating, deleting, and displaying employee records from a database. It handles operations dynamically and efficiently by interacting with a relational database. The project is developed collaboratively by a group of four members, with each member contributing to different aspects of the project.

Objective

The goal of this project is to develop a console application to manage employee details, including:

- Storing employee records in a database.
 - Allowing users to add new employees, update existing records, search for employees, and delete records.
 - Displaying the records of employees stored in the database.
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System Architecture

◆ **Database Management System (DBMS):** The project uses a relational database like **MySQL** to store employee information.

◆ **Database Schema:** The main table in the database stores the employee details such as `emp_id`, `name`, `age`, and `salary`.

◆ **Functions:**

- **Add Employee:** Adds a new record to the employee table.
- **Search Employee:** Searches for an employee by ID or name.

- **Update Employee:** Modifies employee details (e.g., salary, name).
 - **Delete Employee:** Deletes an employee record from the database.
 - **Display Employees:** Displays all the employee records in the system.
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Team Roles

This project is divided into four parts, with each group member contributing to the following modules:

◆ **Member 1:Minahil Iqbal — Medical Domain & Delete Feature**

- Handled operations related to Medical employees (like adding and viewing).
- Focused on building and testing the delete functionality for removing employees.
- Ensured deletion reflects immediately in the view.
- Added departments under Medical (e.g., Surgery, Radiology).

- Removed selected employees from the database using their ID.

◆ **Member 2: Warisha Hassan — Business Domain & Update Feature**

- Managed the Business category and its employee data.
- Focused on developing the Edit functionality to update existing employee details.
- Ensured updated data is properly saved in the database.
- Inserted sample business departments (e.g., Finance, Management).
- Updated employee information like name, position, salary, or date of birth.

◆ **Member 3: Mahak Farhan — Education Domain & Search Feature**

- Worked with employee records in the Education domain.
- Built a separate Search page to find employees by name or job title.

- Displayed search results within styled containers (divs) and handled “No Results Found”.
- Added educational departments (e.g., Mathematics, Physics).
- Retrieved employee records based on search keywords within a selected domain.

◆ **Member 4:Fatima Nadeem — Project Integration & Backend Logic**

- Created the complete Flask application (app.py) and integrated all routes: Add, Edit, Delete, View, Search.
 - Designed the overall flow: selecting a domain, performing actions per domain.
 - Handled database connection and managed sessions for tracking selected domain.
 - Implemented the logic for inserting employees into the database.
 - Styled all pages with gradients and layout divs.
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Technologies Used

◆ **Programming Language:** Python

◆ **Database:** MySQL

◆ **Python Libraries:**

- `mysql.connector` for database connection and querying.
 - `os` for system operations.
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Implementation Details

◆ **Database Connection:** The project establishes a connection to the database using the respective Python library (e.g., `mysql-connector` for MySQL).

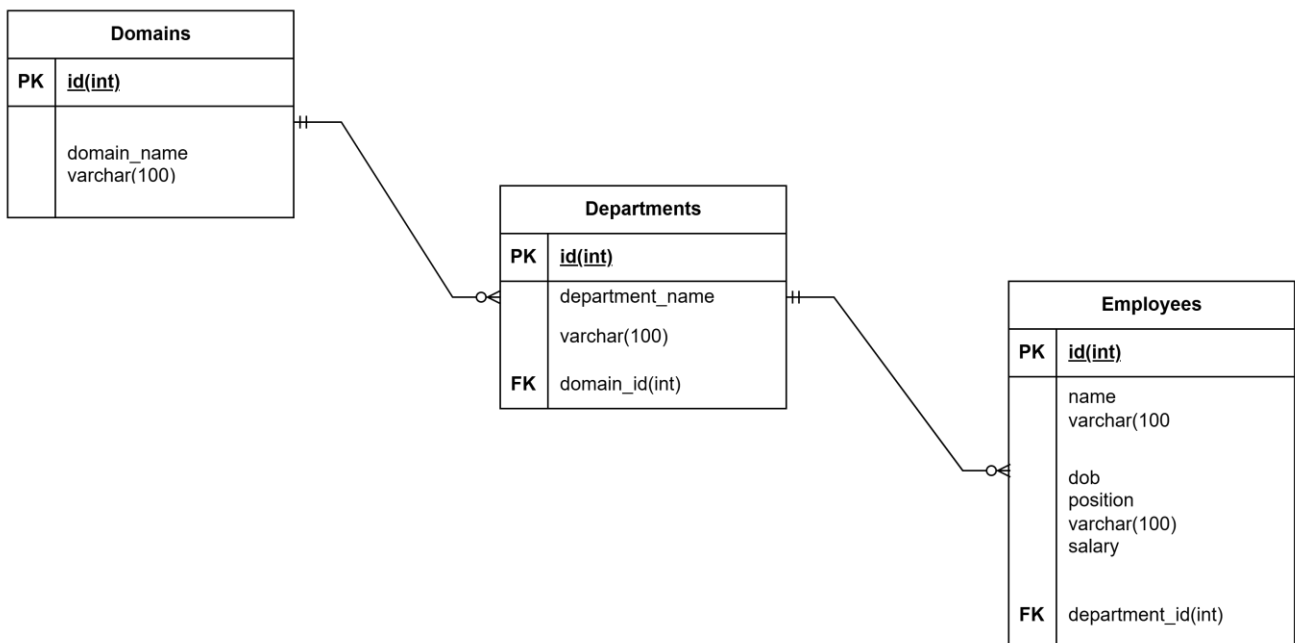
◆ **CRUD Operations:**

- **Create:** Adds a new employee record.
- **Read:** Retrieves and displays all employee records.
- **Update:** Modifies an employee record based on the `emp_id`.

- **Delete:** Removes an employee record from the database.

◆ **Error Handling:** Proper error handling is implemented to deal with issues like incorrect employee IDs, invalid data inputs, or database connection errors.

ER Diagram



Code(GitHub link)

<https://github.com/minahiliqbal123/Employee-Management-DB-PROJECT-/upload/main>

Output

Data Base Project

Select Domain

127.0.0.1:5000/select

Employee Manager

View Employees
Add Employee
Search Employees

Select the Domain

Select Domain:

Medical

Select Action:

Add Employee

Go

Add Employee

127.0.0.1:5000/add

Add Employee

Name:
Ali

Date of Birth:
02/19/2006

Position:
staff

Salary:
12345

Department:
Surgery

Add Employee

Back to Home

Data Base Project

View Employees

127.0.0.1:5000/view

Employees

Domain: **Medical**

Name	DOB	Age	Position	Salary	Department	Actions
Dr. Usman	1978-03-12	47	Surgeon	150000	Surgery	Edit Delete
Ali	2006-02-19	19	staff	12345	Surgery	Edit Delete

Back to Home

Edit Employee

127.0.0.1:5000/edit/1

Edit Employee

Update

[Back](#)

Data Base Project

View Employees

127.0.0.1:5000/view

Employees

Domain: **Education**

Name	DOB	Age	Position	Salary	Department	Actions
Ali Khan	1990-05-20	35	Lecturer	70000	Computer Science	Edit Delete
Mahak Farhan	2005-05-08	20	staff	235678	Computer Science	Edit Delete

[Back to Home](#)

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Search Employee

127.0.0.1:5000/search

Search Employees

Domain: **Medical**

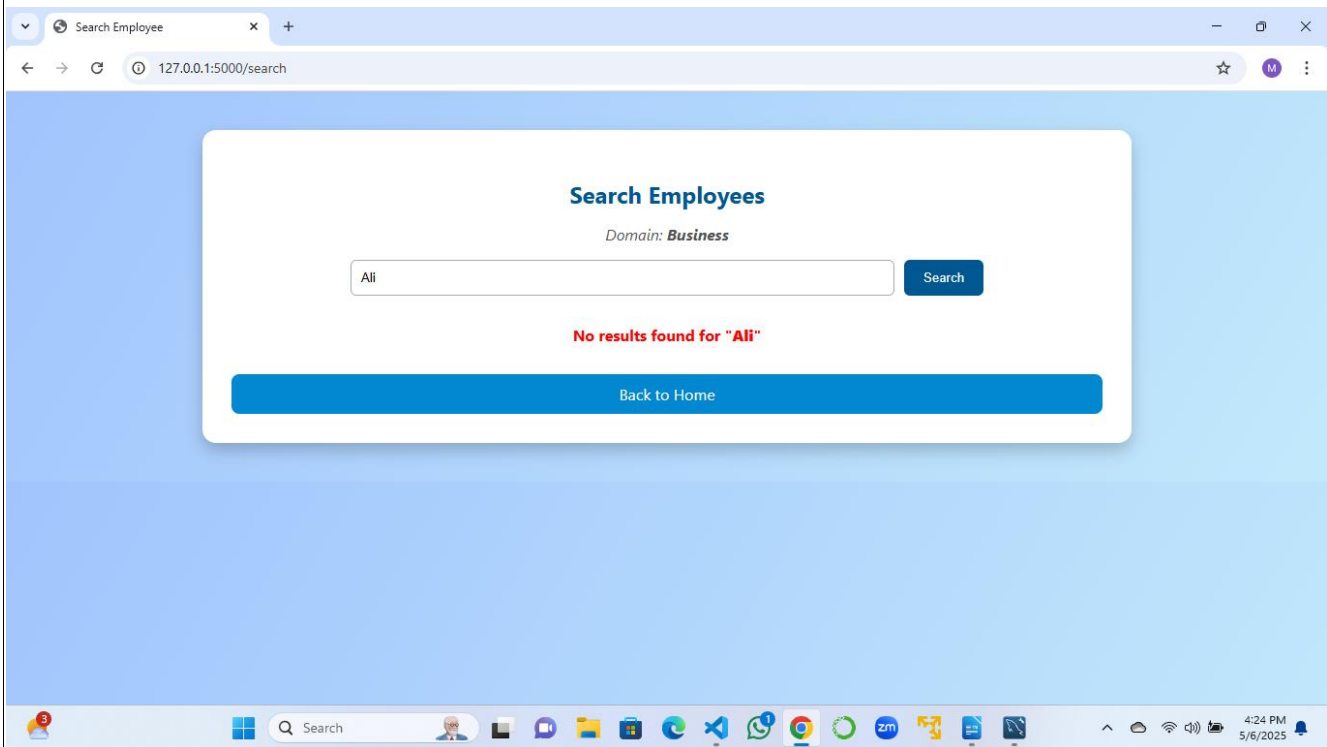
[Search](#)

Name	DOB	Age	Position	Salary	Department
Ali	2006-02-19	19	staff	12345	Surgery

[Back to Home](#)

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Data Base Project



Conclusion

The Employee Management System successfully implements a basic console application for managing employee records in a relational database. The system allows users to interact with the database for common CRUD operations (Create, Read, Update, Delete). The project showcases how to use a database effectively to manage data in a real-world application.
