Employee & Department Management System

Python + MySQL Mini Project (2025)

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1. Introduction

This project demonstrates how to integrate Python with MySQL to manage employee records using CRUD operations and SQL queries.

It includes:

- Database creation
- Table creation
- Large dataset insertion
- Complex SQL queries
- Full Python automation

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2. System Requirements

- Python 3
- MySQL Server
- mysql-connector-python
- Pandas

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3. Database Schema

departments

Column	Type
dept_id	INT
dept_name	VARCHAR(50)

employees

Column	Type
emp_id	INT
emp_name	VARCHAR(100)

Column	Type
dept_id	INT
salary	FLOAT
hire_date	DATE

4. Features

- Bulk data insertion
- Fetch employees by department
- Update salary
- Delete employee
- JOIN operations
- Aggregations

5. Conclusion

This project provides practical experience in working with relational databases, SQL queries, Python integration, and data management.