Full Stack Application Development with Cloud Computing

Module 3 - Back-End Development & Integration

Lab - 1

Unit 3 – Data Persistence and Database Integration

Topic: MYSQL

Ex. 1: Create a database in MySQL and create an employee table and perform CURD operations

Creating Database

Create a Database:You can create a new database using the following SQL command:

```
CREATE DATABASE new_db;
```

Use the Database: After creating the database, you need to use it to perform operations within it:

```
USE new_db;
```

Create Tables and Start Programming: Now that you have the database set up, you can create tables and start programming with SQL queries.

1. **Create an employee table and insert values**

```
CREATE TABLE employee (
emp_id INT PRIMARY KEY,
emp_name VARCHAR(50),
job_name VARCHAR(50),
manager_id INT,
hire_date DATE,
salary DECIMAL(10, 2),
commission DECIMAL(10, 2),
dep_id INT
);
```

```
INSERT INTO employee (emp_id, emp_name, job_name, manager_id, hire_date, salary,
commission, dep_id)
VALUES
(1, 'John Doe', 'Manager', NULL, '2020-01-15', 5000.00, NULL, 1),
(2, 'Jane Smith', 'Developer', 1, '2021-05-10', 4000.00, 500.00, 1),
(3, 'Michael Johnson', 'Analyst', 1, '2019-11-30', 3500.00, NULL, 2),
(4, 'Emily Brown', 'Designer', 2, '2022-02-20', 4200.00, 200.00, 2);
```

select * from employee;

Output

emp_id	emp_name	job_name	manager_id	hire_date	salary	commission
1	John Doe	Manager		2020-01-15	5000	
2	Jane Smith	Developer	1	2021-05-10	4000	500
3	Michael Johnson	Analyst	1	2019-11-30	3500	
4	Emily Brown	Designer	2	2022-02-20	4200	200

2. SQL query to find employees who joined before 2020 and return their complete information: Assuming you have a hire_date column in the format 'YYYY-MM-DD', you can use the following SQL query to find employees who joined before 2020:

SELECT * FROM employee WHERE hire_date < '2020-01-01';

Output

emp_id	emp_name	job_name	manager_id	hire_date	salary	commission	dep_id
3	Michael Johnson	Analyst	1	2019-11-30	3500		2

3. Update the salary of a particular employee

UPDATE employee SET salary = 6000.00 WHERE emp_id = 3;

select * from employee;

Output

emp_id	emp_name	job_name	manager_id	hire_date	salary	commission	dep_id
1	John Doe	Manager		2020-01-15	5000		1
2	Jane Smith	Developer	1	2021-05-10	4000	500	1
3	Michael Johnson	Analyst	1	2019-11-30	6000		2
4	Emily Brown	Designer	2	2022-02-20	4200	200	2

4. **Delete the details of particular employee**

DELETE FROM employee WHERE emp_id = 4;

select * from employee;

Output

emp_id	emp_name	job_name	manager_id	hire_date	salary	commission	dep_id
1	John Doe	Manager		2020-01-15	5000		1
2	Jane Smith	Developer	1	2021-05-10	4000	500	1
3	Michael Johnson	Analyst	1	2019-11-30	6000		2

Practice Question

Ex. 2: Create a database in MySQL and create a book table and perform CURD operations