Lab 8 VIEW & INDEX_MORE

VIEW

```
mysql> CREATE VIEW EmployeeDetails AS SELECT e.emp_id,e.name AS employee_name,e.salary,d.name as dept_name,p.project_name FROM Employee e join Department d ON e.d
ept_id=d.dept_id join Employee_Project ep ON e.emp_id=ep.emp_id join Project p ON ep.project_id=p.project_id;
Query OK, 0 rows affected (0.016 sec)

mysql> select * from employeedetails;
+--------+---------------+--------+-----------+--------------+
| emp_id | employee_name | salary | dept_name | project_name |
+--------+---------------+--------+-----------+--------------+
|    115 | Dean          | 150000 | Tech      | X            |
|    114 | Shimaa        | 200000 | HR        | X            |
|    111 | Zaineh        | 100000 | Tech      | X            |
|    115 | Dean          | 150000 | Tech      | Y            |
|    111 | Zaineh        | 100000 | Tech      | Y            |
|    115 | Dean          | 150000 | Tech      | Z            |
|    114 | Shimaa        | 200000 | HR        | Z            |
+--------+---------------+--------+-----------+--------------+
7 rows in set (0.003 sec)
```

INDEX

```
mysql> CREATE INDEX idx_employee_name ON Employee (name);
Query OK, 0 rows affected (0.077 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SHOW INDEX FROM Employee;
+----------+------------+-------------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+------------
---+---------+------------+
| Table    | Non_unique | Key_name          | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_comme
nt | Visible | Expression |
+----------+------------+-------------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+------------
---+---------+------------+
| Employee |          0 | PRIMARY           |            1 | emp_id      | A         |           5 |     NULL |   NULL |      | BTREE      |         |
   | YES     | NULL       |
| Employee |          1 | emp_id            |            1 | address_id  | A         |           5 |     NULL |   NULL |      | BTREE      |         |
   | YES     | NULL       |
| Employee |          1 | dept_id           |            1 | dept_id     | A         |           4 |     NULL |   NULL |      | BTREE      |         |
   | YES     | NULL       |
| Employee |          1 | idx_employee_name |            1 | name        | A         |           5 |     NULL |   NULL | YES  | BTREE      |         |
   | YES     | NULL       |
+----------+------------+-------------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+------------
---+---------+------------+
4 rows in set (0.016 sec)
```

Java Repository Implementation (JDBC)

A. Create Model Class (`Employee.java`)

You must first create the simple Java model class `Employee` to hold the data retrieved from or sent to the database.

B. Create Repository Class (`EmployeeRepository.java`)

Create a Java class named `EmployeeRepository`. This class must implement the following five core CRUD methods for interacting with the `Employee` table. Include the correct SQL for each operation.

Method Signature Operation

`List<Employee> findAll()` Gets all employees.

`Employee findById(int empId)` Gets an employee.

`void create(Employee employee)` Inserts a new employee.

`void update(Employee employee)` Updates an employee

`void delete(int empId)` Deletes an employee

Add a **`main` method** to the `EmployeeRepository` class. The `main` method should execute each of the five methods sequentially to demonstrate a complete CRUD lifecycle:

1. Instantiate `EmployeeRepository`.
2. Create a new `Employee` object and execute `create()`.
3. Execute `findAll()` to show the newly added employee.
4. Execute `findById()` to retrieve the specific employee.
5. Update the employee object and execute `update()`.
6. Execute `delete()`.
7. Execute `findAll()` again to confirm the deletion.

SOLUTIONS

Creating Employee

Employee{emp_id=117, name='John', salary=145000, address_id=2, dept_id=4}

Employee created

All Employees

Employee{emp_id=111, name='Zaineh', salary=100000, address_id=1, dept_id=1}

Employee{emp_id=112, name='Yasmeen', salary=160000, address_id=2, dept_id=4}

Employee{emp_id=113, name='Mira', salary=140000, address_id=3, dept_id=3}

Employee{emp_id=114, name='Shimaa', salary=200000, address_id=4, dept_id=2}

Employee{emp_id=115, name='Dean', salary=150000, address_id=5, dept_id=1}

Employee{emp_id=117, name='John', salary=145000, address_id=2, dept_id=4}

Get Employee Details for Id = 115

Employee{emp_id=115, name='Dean', salary=150000, address_id=5, dept_id=1}

Updated Successfully

Deleting Employee with id 117

Deleted Successfully

All Employees

Employee{emp_id=111, name='Zaineh', salary=100000, address_id=1, dept_id=1}

Employee{emp_id=112, name='Yasmeen', salary=160000, address_id=2, dept_id=4}

Employee{emp_id=113, name='Mira', salary=140000, address_id=3, dept_id=3}

Employee{emp_id=114, name='Shimaa', salary=200000, address_id=4, dept_id=2}

Employee{emp_id=115, name='Dean', salary=150000, address_id=5, dept_id=1}