Step 1: Update & Install Java and MySQL

Run these commands in your Ubuntu terminal:

bash Copy code

```
sudo apt update
sudo apt install default-jdk mysql-server -y
```

Check Java installation:

bash Copy code

```
java -version
javac -version
```

Check MySQL service status:

bash Copy code

```
sudo service mysql status
```

Start MySQL if it's not running:

bash Copy code

```
sudo service mysql start
```

Option 1: Set a password for root (recommended for Java)

1. Open MySQL with sudo:

bash Copy code

```
sudo mysql
```

2. Set a password for root:

sql Copy code

```
ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'YourPassword';
FLUSH PRIVILEGES;
EXIT;
```

sql

Copy code

```sql
CREATE DATABASE learners_db;
USE learners_db;

CREATE TABLE Employee(
    SSN VARCHAR(15) PRIMARY KEY,
    Ename VARCHAR(50),
    state VARCHAR(50),
    salary DECIMAL(10,2)
);

INSERT INTO Employee VALUES('E001','Alice','MH',50000);
INSERT INTO Employee VALUES('E002','Bob','Gujrat',45000);
INSERT INTO Employee VALUES('E003','Charlie','MH',55000);
```

Step 4: Set Up Your Java Program

1. Create a folder for your project, e.g.:

bash

Copy code

```bash
mkdir ~/DBMS_practice
cd ~/DBMS_practice
```

2. Save this Java code as `EmployeeJDBC.java`:

```
import java.sql.*;

public class EmployeeJDBC {
   static final String JDBC_URL = "jdbc:mysql://localhost:3306/learners_db";
   static final String USER = "root";       // MySQL username
   static final String PASSWORD = "yourpassword";  // MySQL password

   public static void main(String[] args) {
      try {
         Class.forName("com.mysql.cj.jdbc.Driver");
         Connection conn = DriverManager.getConnection(JDBC_URL, USER, PASSWORD);
         Statement stmt = conn.createStatement();

         // INSERT
         stmt.executeUpdate("INSERT INTO Employee VALUES('E002','Bob','MH',45000.0)");
         System.out.println("Inserted E002");

         // SELECT
         ResultSet rs = stmt.executeQuery("SELECT * FROM Employee");
         System.out.println("Employee Table:");
         while (rs.next()) {
            System.out.println(rs.getString("SSN") + " - " +
                               rs.getString("Ename") + " - " +
                               rs.getString("state") + " - " +
                               rs.getDouble("salary"));
         }

         // UPDATE
         stmt.executeUpdate("UPDATE Employee SET state='TN' WHERE state='MH'");
         System.out.println("Updated MH -> TN");

         // DELETE
         stmt.executeUpdate("DELETE FROM Employee WHERE state='Gujrat'");
         System.out.println("Deleted Gujrat employees");

         // Close connections
         rs.close();
         stmt.close();
         conn.close();
         System.out.println("Done!");

      } catch (Exception e) {
         e.printStackTrace();
      }
   }
}
```

Step 5: Download MySQL Connector

1. Go to MySQL Connector/J download page ↗ and download the `.tar.gz` or `.zip` version for Linux.
2. Extract it:

bash Copy code

```
tar -xvzf mysql-connector-j-9.5.0.tar.gz
```

3. Note the `.jar` file path inside the extracted folder, e.g.:

bash Copy code

```
~/DBMS_practice/mysql-connector-j-9.5.0/mysql-connector-j-9.5.0.jar
```

Step 6: Compile and Run Java Program

Inside your project folder:

bash Copy code

```
# Compile
javac -cp .:mysql-connector-j-9.5.0.jar EmployeeJDBC.java

# Run
java -cp .:mysql-connector-j-9.5.0.jar EmployeeJDBC
```

> Note: In Linux, **use `:` instead of `;`** to separate classpath entries.

You should see output like:

css Copy code

```
Inserted E002
Employee Table:
E001 - Alice - TN - 50000.0
E002 - Bob - TN - 45000.0
Updated MH -> TN
Deleted Gujrat employees
Done!
```

Step 7: Verify in MySQL

If you want to check manually:

bash Copy code

```
sudo mysql
USE learners_db;
SELECT * FROM Employee;
```