<u>**Experiment 7**</u>

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| **Subject Name: Project Based Learning** | **SubjectCode:22CSH-359** |
| **in Java with Lab** | |

1. **Aim: Create Java applications with JDBC for database connectivity, CRUD operations, and MVC architecture.**

2. **Objective: Create a Java program to connect to a MySQL database and fetch data from a single table. The program should: Use DriverManager and Connection objects. Retrieve and display all records from a table named Employee with columns EmpID, Name, and Salary.**

3. **Implementation/Code:**

```java
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;

public class EmployeeFetcher {
    public static void main(String[] args) {
        // Database URL, username, and password
        String url = "jdbc:mysql://localhost:3306/your_database";
        String user = "your_username";
        String password = "your_password";

        // SQL query to fetch all employee records
        String query = "SELECT * FROM Employee";

        try {
            // Load MySQL JDBC Driver
            Class.forName("com.mysql.cj.jdbc.Driver");
```

```java
// Establish connection
Connection conn = DriverManager.getConnection(url, user, password);
// Create a statement
Statement stmt = conn.createStatement();
// Execute the query
ResultSet rs = stmt.executeQuery(query);
// Display results
System.out.println("EmpID | Name | Salary");
System.out.println("---------------------- ");
while (rs.next()) {
    int empID = rs.getInt("EmpID");
    String name = rs.getString("Name");
    double salary = rs.getDouble("Salary");
    System.out.println(empID + " | " + name + " | " + salary);
}
// Close resources
rs.close();
stmt.close();
conn.close();
} catch (Exception e)
    { e.printStackTrace();
}
}
}
```

4. **Output:**

```
EmpID | Name | Salary

----------------------

101 | Alice | 50000.0
102 | Bob | 60000.0
103 | Charlie | 55000.0
```

**5. LearningOutcomes:**

- Learn JDBC basics and database connectivity.
- Execute SQL queries (SELECT * FROM Employee) in Java.
- Retrieve and display data using ResultSet.
- Implement exception handling for database errors.
- Manage database resources efficiently (close() methods).