Day5_JDBC_CaseStudy

Task1:

- **Queries:**

  use coursedb;

  create table coursedb.courses (course_id INT PRIMARY KEY,course_name VARCHAR(100),faculty VARCHAR(100),credits INT);

  select * from courses;

- **JDBC Operations:**
  - **Dbutilization.java**:

```
package Coursereg;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
public class Dbutilization {
    private static final String URL =
"jdbc:mysql://localhost:3306/coursedb";
    private static final String USER = "root";
    private static final String PASSWORD = "Guru@123";
    public static Connection getConnection() throws SQLException {
        Connection conn = DriverManager.getConnection(URL, USER,
PASSWORD);
        System.out.println("Connected to the database");
        return conn;
    }
}
```

Output:

```
Connected to the database
```

  - **Insertcourse.java:**

```
package Coursereg;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.util.Scanner;
public class Insertcourse {
    public static void main(String[] args) {
        try (Scanner sc = new Scanner(System.in);
             Connection conn = Dbutilization.getConnection()) {
            System.out.print("Enter Course ID:");
            int id = sc.nextInt();
            sc.nextLine();
            System.out.print("Enter Course Name:");
            String name = sc.nextLine();
            System.out.print("Enter Faculty:");
            String faculty = sc.nextLine();
            System.out.print("Enter Credits:");
            int credits = sc.nextInt();
            String query = "INSERT INTO courses VALUES (?, ?, ?,
?)";
            PreparedStatement ps = conn.prepareStatement(query);
            ps.setInt(1, id);
            ps.setString(2, name);
            ps.setString(3, faculty);
            ps.setInt(4, credits);
            int rows = ps.executeUpdate();
```

```
            System.out.println(rows > 0 ? "Course inserted" :
"Insertion failed.");
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

Output:

```
Connected to the database
Enter Course ID:1
Enter Course Name:jdbc
Enter Faculty:Ravi
Enter Credits:5
Course inserted
```

- **Selectcourse.java:**

```
package Coursereg;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
public class Selectcourse {
    public static void main(String[] args) {
        try (Connection conn = Dbutilization.getConnection();
             Statement stmt = conn.createStatement();
             ResultSet rs = stmt.executeQuery("SELECT * FROM
courses")) {
            System.out.println("Course List:");
            while (rs.next()) {
                System.out.println("ID:" + rs.getInt("course_id") +
                        ",Name:" + rs.getString("course_name") +
                        ",Faculty:" + rs.getString("faculty") +
                        ",Credits:" + rs.getInt("credits"));
            }
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

Output:

```
Connected to the database
Course List:
ID:1,Name:jdbc,Faculty:Ravi,Credits:5
ID:3,Name:ABAp,Faculty:Sanjay,Credits:5
ID:4,Name:SAP,Faculty:Kumar,Credits:5
ID:10,Name:Java,Faculty:Shiva,Credits:5
```

- **Updatecourse.java:**

```
package Coursereg;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.util.Scanner;
public class Updatecourse {
    public static void main(String[] args) {
        try (Scanner sc = new Scanner(System.in);
             Connection conn = Dbutilization.getConnection()) {
            System.out.print("Enter Course ID to update:");
            int id = sc.nextInt();
            sc.nextLine();
            System.out.print("Enter new Faculty:");
```

```
                String faculty = sc.nextLine();
                System.out.print("Enter new Credits:");
                int credits = sc.nextInt();
                String query = "UPDATE courses SET faculty=?,credits=?
    WHERE course_id=?";
                PreparedStatement ps = conn.prepareStatement(query);
                ps.setString(1,faculty);
                ps.setInt(2,credits);
                ps.setInt(3,id);
                int rows = ps.executeUpdate();
                System.out.println(rows > 0 ? "Course updated
    successfully.":"No course found with given ID.");
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
➢   }
```

Output:

```
Connected to the database
Enter Course ID to update:1
Enter new Faculty:Nans
Enter new Credits:5
Course updated successfully.
```

➢ **Deletecourse.java:**

```
package Coursereg;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.util.Scanner;
public class Deletecourse {
    public static void main(String[] args) {
        try (Scanner sc = new Scanner(System.in);
             Connection conn = Dbutilization.getConnection()) {
            System.out.print("Enter Course ID to delete: ");
            int id = sc.nextInt();
            String query = "DELETE FROM courses WHERE course_id=?";
            PreparedStatement ps = conn.prepareStatement(query);
            ps.setInt(1, id);
            int rows = ps.executeUpdate();
            System.out.println(rows > 0 ? "Course deleted
successfully.":"No course found with given ID.");
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

Output:

```
Connected to the database
Enter Course ID to delete: 1
Course deleted successfully.
```

Task2:

❖ **Queries:**

```
use inventorydb;
create table inventorydb.products (product_id INT PRIMARY KEY,product_name
VARCHAR(100),quantity INT,price DECIMAL(10,2));
select * from products;
```

❖ **JDBC Operations:**

➢ **Dbutilization.java**:

```
package Inventorysys;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
public class Dbutilization {
    private static final String URL
"jdbc:mysql://localhost:3306/inventorydb";
    private static final String USER = "root";
    private static final String PASSWORD = "Guru@123";
    public static Connection getConnection() throws SQLException {
        Connection conn = DriverManager.getConnection(URL, USER,
PASSWORD);
        System.out.println("Connected to the database");
        return conn;
    }
}
```

Output:

```
Connected to the database
```

➢ **Insertinventory:**

```
package Inventorysys;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.util.Scanner;
public class Insertinventory {
    public static void main(String[] args) {
        try (Scanner sc = new Scanner(System.in);
             Connection conn = Dbutilization.getConnection()) {
            System.out.print("Enter product ID:");
            int id = sc.nextInt();
            sc.nextLine();
            System.out.print("Enter product Name:");
            String name = sc.nextLine();
            System.out.print("Enter quantity:");
            int qty = sc.nextInt();
            System.out.print("Enter price:");
            double price = sc.nextDouble();
            String query = "INSERT INTO products VALUES (?, ?, ?,
?)";
            PreparedStatement ps = conn.prepareStatement(query);
            ps.setInt(1, id);
            ps.setString(2, name);
            ps.setInt(3, qty);
            ps.setDouble(4, price);
            int rows = ps.executeUpdate();
            System.out.println(rows > 0 ? "Product added":"Insertion
failed.");
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
```

➢ }

Output:

```
Connected to the database
Enter product ID:1
```

```
Enter product Name:bottle
Enter quantity:100
Enter price:1000
Product added
```

- **SelectInventory:**

```
package Inventorysys;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
public class Selectinventory {
    public static void main(String[] args) {
        try (Connection conn = Dbutilization.getConnection();
             Statement stmt = conn.createStatement();
             ResultSet rs = stmt.executeQuery("SELECT * FROM
products")) {
            System.out.println("---- Product Inventory ----");
            while (rs.next()) {
                System.out.println("ID: " + rs.getInt("product_id")
+
                        ",Name:" + rs.getString("product_name") +
                        ",Quantity:" + rs.getInt("quantity") +
                        ",Price:" + rs.getDouble("price"));
            }
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

Output:

```
Connected to the database
---- Product Inventory ----
ID: 1,Name:bottle,Quantity:100,Price:1000.0
ID: 2,Name:Steelbottle,Quantity:100,Price:10000.0
ID: 3,Name:Kidsbottle,Quantity:100,Price:15000.0
ID: 4,Name:Gymbottle,Quantity:100,Price:20000.0
```

- **Updateinventory.java:**

```
package Inventorysys;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.util.Scanner;
public class Updateinventory {
    public static void main(String[] args) {
        try (Scanner sc = new Scanner(System.in);
             Connection conn = Dbutilization.getConnection()) {
            System.out.print("Enter product ID to update quantity:
");
            int id = sc.nextInt();
            System.out.print("Enter New Quantity: ");
            int qty = sc.nextInt();
            String query = "UPDATE products SET quantity = ? WHERE
product_id = ?";
            PreparedStatement ps = conn.prepareStatement(query);
            ps.setInt(1, qty);
            ps.setInt(2, id);
            int rows = ps.executeUpdate();
```

```
            System.out.println(rows > 0 ? "Quantity
updated!":"Product not found.");
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

Output:

```
Connected to the database
Enter product ID to update quantity: 1
Enter New Quantity: 200
Quantity updated!
```

- **Deleteinventory.java:**

```
package Inventorysys;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.util.Scanner;
public class Deleteinventory {
    public static void main(String[] args) {
        try (Scanner sc = new Scanner(System.in);
             Connection conn = Dbutilization.getConnection()) {
            System.out.print("Enter Product ID to delete: ");
            int id = sc.nextInt();
            String query = "DELETE FROM products WHERE product_id =
?";
            PreparedStatement ps = conn.prepareStatement(query);
            ps.setInt(1, id);
            int rows = ps.executeUpdate();
            System.out.println(rows > 0 ? "Product deleted" :
"Product not found");
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

Output:

```
Connected to the database
Enter Product ID to delete: 1
Product deleted
```