Day5:Assignment2:

CaseStudy1:OnlineCourseRegistration System

Objective: Allow students to register/unregister for courses and view course details.

TableStructure:

```
CREATE DATABASE course_db;
USE course_db;
CREATE TABLE courses (
course_id INT PRIMARY KEY,
course_name VARCHAR(100),
faculty VARCHAR(100),
credits INT
);
select*from courses;
```

JDBC INSERT:

```
package jdbctask;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.util.Scanner;



public class jdbcInsert {
	public static void main(String[] args) {
		String url = "jdbc:mysql://localhost:3306/course_db";
		String user = "root";
		String password = "Nandu@1705";
```

```
        try {
                Class.forName("com.mysql.cj.jdbc.Driver");
                Connection conn = DriverManager.getConnection(url, user, password);
                Scanner sc = new Scanner(System.in);
                System.out.print("Enter course id:");
                int id = sc.nextInt();
                sc.nextLine(); // consume newline
                System.out.print("Enter Course Name: ");
                String name = sc.nextLine();
                System.out.print("Enter Faculty Name: ");
                String faculty = sc.nextLine();
                System.out.print("Enter Credits: ");
                int credits = sc.nextInt();
                String query = "INSERT INTO course VALUES (?, ?, ?, ?)";
                PreparedStatement stmt = conn.prepareStatement(query);
                stmt.setInt(1, id);
                stmt.setString(2, name);
                stmt.setString(3, faculty);
                stmt.setInt(4, credits);
                int rows = stmt.executeUpdate();
                System.out.println(rows + " course(s) inserted.");
                conn.close();
                sc.close();
                }
        catch (Exception e) {
                System.out.println("Error: " + e);
        }

}

}
```

JDBC SELECT:

```
package jdbctask;

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



public class jdbcselect {
	public static void main(String[]args) {
		String url = "jdbc:mysql://localhost:3306/course_db";
		String user = "root";
		String password = "Nandu@1705";



		try {
			Class.forName("com.mysql.cj.jdbc.Driver");
			Connection conn = DriverManager.getConnection(url, user, password);
			Statement stmt = conn.createStatement();
			ResultSet rs = stmt.executeQuery("SELECT * FROM course");
			while (rs.next())
			{
			System.out.println("Course ID: " + rs.getInt("course_id"));
			System.out.println("Course Name: " + rs.getString("course_name"));
			System.out.println("Faculty: " + rs.getString("faculty"));
			System.out.println("Credits: " + rs.getInt("credits"));
			System.out.println("************");

			}
			conn.close();
```

```
		}
		catch(Exception e) {
			System.out.println("Error: " + e);
		}
	}
}
```

JDBC UPDATE:

```
package jdbctask;

import java.util.Scanner;
import java.sql.*;

public class UpdateCourse {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
			Scanner sc = new Scanner(System.in);
			System.out.print("Enter Course ID to update: ");
			int id = sc.nextInt();
			sc.nextLine();
			System.out.print("Enter new Faculty Name: ");
			String faculty = sc.nextLine();
			System.out.print("Enter new Credit value: ");
			int credits = sc.nextInt();
			try {
				Connection con
=DriverManager.getConnection("jdbc:mysql://localhost:3306/course_db", "root",
				"Nandu@1705");
				String sql = "UPDATE course SET faculty = ?, credits = ? WHERE
course_id = ?";
```

```
                                        PreparedStatement ps = con.prepareStatement(sql);
                                        ps.setString(1, faculty);
                                        ps.setInt(2, credits);
                                        ps.setInt(3, id);
                                        int rows = ps.executeUpdate();
                                        if (rows > 0) {
                                        System.out.println("Course updated successfully.");
                                        }
                                        else {
                                        System.out.println("Course ID not found.");
                                        }
                                        ps.close();
                                        con.close();
                                        sc.close();
                                        } catch (Exception e) {
                                        e.printStackTrace();
                                        }
}
}
```

JDBC DELETE COURSE:

```
package jdbctask;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.util.Scanner;


public class DeleteCourse {

        public static void main(String[] args) {
        String url = "jdbc:mysql://localhost:3306/course_db";
```

```
        String user = "root";
        String password = "Nandu@1705";
        try {
                Class.forName("com.mysql.cj.jdbc.Driver");
                Connection conn = DriverManager.getConnection(url, user, password);
                Scanner sc = new Scanner(System.in);
                System.out.print("Enter Course ID to delete: ");
                int id = sc.nextInt();
                String query = "DELETE FROM course WHERE course_id = ?";
                PreparedStatement stmt = conn.prepareStatement(query);
                stmt.setInt(1, id);
                int rows = stmt.executeUpdate();
                System.out.println(rows + " course(s) deleted.");
                conn.close();
                sc.close();
                } catch (Exception e) {
                System.out.println("Error: " + e);
                }
}
}
```

CaseStudy2: Product Inventory System

Objective: Track product stock in a retail store

```
CREATE DATABASE inventory_db;
USE inventory_db;
CREATE TABLE products (
 product_id INT PRIMARY KEY,
product_name VARCHAR(100),
quantity INT,
 price DECIMAL(10,2)
);
```

select*from products;

JDBC OPERATIONS:

JDBC INSERT:

```
package jdbctask2;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import java.util.Scanner;


public class insertproduct {

	public static void main(String[] args) {

	String url = "jdbc:mysql://localhost:3306/inventory_db";

	String user = "root";

	String password = "Nandu@1705";

	try {

	Class.forName("com.mysql.cj.jdbc.Driver");

	Connection conn = DriverManager.getConnection(url, user, password);

	Scanner sc= new Scanner(System.in);

	System.out.print("Enter Product ID: ");

	int id = sc.nextInt();

	sc.nextLine(); // consume newline

	System.out.print("Enter Product Name: ");

	String name = sc.nextLine();

	System.out.print("Enter Quantity: ");

	int quantity = sc.nextInt();

	System.out.print("Enter Price: ");

	double price = sc.nextDouble();

	String query = "Insert into  products VALUES (?, ?, ?, ?)";

	PreparedStatement pstmt = conn.prepareStatement(query);

	pstmt.setInt(1, id);

	pstmt.setString(2, name);
```

```
            pstmt.setInt(3, quantity);
            pstmt.setDouble(4, price);
            int rows = pstmt.executeUpdate();
            System.out.println(rows + " product(s) inserted.");
            conn.close();
            } catch (Exception e) {
           System.out.println("Insert Error: " + e);
            }
            }
}
```

VIEW PRODUCTS:

```
package jdbctask2;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;

public class ViewProducts {
            public static void main(String[] args) {
            String url = "jdbc:mysql://localhost:3306/inventory_db";
            String user = "root";
            String password = "Nandu@1705";
            try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn = DriverManager.getConnection(url, user, password);
            Statement stmt = conn.createStatement();
            ResultSet rs = stmt.executeQuery("SELECT * FROM products");
            System.out.println("Product ID | Product Name | Quantity | Price");
            while (rs.next()) {
            System.out.printf("%10d | %-12s | %8d | %.2f\n", rs.getInt("product_id"),
            rs.getString("product_name"),
```

```
            rs.getInt("quantity"),
            rs.getDouble("price")
            );
            }
            conn.close();
            } catch (Exception e) {
                        System.out.println("Select Error: " + e);
            }
            }
}
```

UPDATE PRODUCT:

```
package jdbctask2;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.util.Scanner;

public class UpdateProduct {
            public static void main(String[] args) {
            String url = "jdbc:mysql://localhost:3306/inventory_db";
            String user = "root";
            String password = "Nandu@1705";
            try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn = DriverManager.getConnection(url, user, password);
            Scanner sc = new Scanner(System.in);
            System.out.print("Enter Product ID to update quantity: ");
            int id = sc.nextInt();
            System.out.print("Enter new Quantity: ");
            int quantity = sc.nextInt();
```

```
            String query = "UPDATE products SET quantity = ? WHERE product_id = ?";
            PreparedStatement pstmt = conn.prepareStatement(query);
            pstmt.setInt(1, quantity);
            pstmt.setInt(2, id);
            int rows = pstmt.executeUpdate();
            System.out.println(rows + " product(s) updated.");
            conn.close();
            sc.close();
            } catch (Exception e) {
            System.out.println("Update Error: " + e);
            System.out.println("Update Error: " + e);
            }
            }

}
```

DELETE PRODUCT:

```
package jdbctask2;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.util.Scanner;


public class DeleteProduct {

        public static void main(String[] args) {
                        String url = "jdbc:mysql://localhost:3306/inventory_db";
                        String user = "root";
                        String password = "Nandu@1705";
                        try {
                                Class.forName("com.mysql.cj.jdbc.Driver");
```

```
                    Connection conn = DriverManager.getConnection(url, user,
password);
                    Scanner sc = new Scanner(System.in);
                    System.out.print("Enter Product ID to delete: ");
                    int id = sc.nextInt();
                    String query = "DELETE FROM products WHERE product_id = ?";
                    PreparedStatement pstmt = conn.prepareStatement(query);
                    pstmt.setInt(1, id);
                    int rows = pstmt.executeUpdate();
                    System.out.println(rows + " product(s) deleted.");
                    conn.close();
                    sc.close();
                    } catch (Exception e) {
                    System.out.println("Delete Error: " + e);
 }
}
}
```