JDBC DAY-5 ASSIGNMENT

Case Study 1: Online Course Registration System

Insert code:

```
package jdbc_assignment;

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

public class operations_reg {

	public static void main(String[] args) {
		String url = "jdbc:mysql://localhost:3306/course_db";
		String user = "root";
		String password = "Sahithi@19";

 try {

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


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

			String sql = "INSERT INTO courses
(course_id,course_name,faculty,credits) VALUES (?, ?, ?, ?)";
		PreparedStatement stmt = conn.prepareStatement(sql);

		stmt.setInt(1, 1);
		stmt.setString(2, "java");
		stmt.setString(3, "Adam");
		stmt.setInt(4,3);


		int rowsInserted = stmt.executeUpdate();

		if(rowsInserted>0) {
			System.out.println("Course database inserted succesfully.");
		}
```

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

}
```

Select code:

```
package jdbc_assignment;

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

public class select_reg {

        public static void main(String[] args) {
                String url = "jdbc:mysql://localhost:3306/course_db";
                String user = "root";
                String password = "Sahithi@19"; //instead of root please provide
your own password

                try {

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

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

                        //Create Statement Object
                        Statement stmt = conn.createStatement();

                        //Execute Select Query
```

```
                String sql = "SELECT * FROM courses";
                ResultSet rs = stmt.executeQuery(sql);

                //Process the ResultSet

        System.out.println("course_id\tcourse_name\t\tfaculty\t\tcredits");
                System.out.println("-------------------------------------------------
---------------");
                while(rs.next()) {
                        int course_id = rs.getInt("course_id");
                        String course_name = rs.getString("course_name");
                        String faculty = rs.getString("faculty");
                        int credits = rs.getInt("credits");

                        System.out.println(course_id + "\t\t" + course_name +
"\t\t\t" + faculty +"\t\t" + credits);
                }

                rs.close();
                stmt.close();
                //System.out.println("Connected to the database.");
                conn.close();
            }
            catch(Exception e) {
                System.out.println("Connection Error: " + e);
            }

        }

}
```

Update code:

```
package jdbc_assignment;

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

public class update_reg {
```

```
  public static void main(String[] args) {
        String url      = "jdbc:mysql://localhost:3306/course_db";
    String user     = "root";
    String password = "Sahithi@19";

    Scanner sc = new Scanner(System.in);

    System.out.print("Enter course ID to update: ");
    int course_id = sc.nextInt();
    sc.nextLine(); // consume newline

    try (
       Connection conn = DriverManager.getConnection(url, user, password);
    ) {
       // Step 1: Check if ID exists
       String checkSql = "SELECT * FROM courses WHERE course_id = ?";
       PreparedStatement checkStmt = conn.prepareStatement(checkSql);
       checkStmt.setInt(1, course_id);
       ResultSet rs = checkStmt.executeQuery();

       if (!rs.next()) {
          System.out.println("□ Record not found for course_id = " +
course_id);
       } else {
          // Step 2: If exists, take name and marks
          System.out.print("Enter New Course Name: ");
          String course_name = sc.nextLine();

          System.out.print("Enter New Faculty Name: ");
          String faculty = sc.nextLine();

          System.out.print("Enter New credits: ");
          int credits = sc.nextInt();

          // Step 3: Update the record
          String updateSql = "UPDATE courses SET course_name = ?, faculty
= ?, credits = ? WHERE course_id = ?";
          PreparedStatement updateStmt = conn.prepareStatement(updateSql);
          updateStmt.setString(1, course_name);
          updateStmt.setString(2, faculty);
          updateStmt.setInt(3, credits);
          updateStmt.setInt(4, course_id);
```

```
            int rows = updateStmt.executeUpdate();

            if (rows > 0) {
                System.out.println("□ Courses record updated successfully.");
            }

            updateStmt.close();
        }

        rs.close();
        checkStmt.close();

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

    sc.close();
      }

}
```

Delete code:

```
package jdbc_assignment;

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

public class delete_reg {

      public static void main(String[] args) {
            String url      = "jdbc:mysql://localhost:3306/course_db";
    String user     = "root";
    String password = "Sahithi@19";

    String sql = "DELETE FROM courses WHERE course_id = ?";

    try (
        Connection conn = DriverManager.getConnection(url, user, password);
        PreparedStatement stmt = conn.prepareStatement(sql);
```

```
        ) {
            // Set the id of the record to delete
            stmt.setInt(1, 1);

            int rows = stmt.executeUpdate();
            if (rows > 0) {
                System.out.println("□ course deleted successfully.");
            } else {
                System.out.println("□ No course found with id=1.");
            }
        } catch (Exception e) {
            e.printStackTrace();
        }
          }

}
```

Case Study 2: Product Inventory System

Insert code:

```
 package jdbc_assignment2;

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

public class insert_prod {

        public static void main(String[] args) {
                String url = "jdbc:mysql://localhost:3306/inventory_db";
                String user = "root";
                String password = "Sahithi@19"; //instead of root please provide
your own password

                try {

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

                        //Establish Connection
```

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

                    String sql = "INSERT INTO products (products_id,
product_name, quantity, price) VALUES (?, ?, ?, ?)";
        PreparedStatement stmt = conn.prepareStatement(sql);
                    //System.out.println("Connected to the database.");

        //Set Parameters
        stmt.setInt(1, 501);
        stmt.setString(2, "bag");
        stmt.setInt(3, 50);
        stmt.setFloat(4, 100);

        int rowsInserted = stmt.executeUpdate();

        if(rowsInserted>0) {
            System.out.println("product inserted succesfully.");
        }

        stmt.close();
                    conn.close();
            }
            catch(Exception e) {
                    System.out.println("Connection Error: " + e);
            }

        }

}
```

Select code:

```
package jdbc_assignment2;

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

public class select_prod {

        public static void main(String[] args) {
```

```
		String url = "jdbc:mysql://localhost:3306/inventory_db";
		String user = "root";
		String password = "Sahithi@19"; //instead of root please provide your own password

		try {

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

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

			//Create Statement Object
			Statement stmt = conn.createStatement();

			//Execute Select Query
			String sql = "SELECT * FROM products";
			ResultSet rs = stmt.executeQuery(sql);

			//Process the ResultSet

	System.out.println("products_id\tproduct_name\t\tquantity\t\tprice");
			System.out.println("-------------------------------------------------------------------");
			while(rs.next()) {
				int products_id = rs.getInt("products_id");
				String product_name = rs.getString("product_name");
				int quantity = rs.getInt("quantity");
				float price=rs.getFloat("price");

				System.out.println(products_id + "\t" + product_name + "\t\t" + quantity + "\t\t" + price);
			}

			rs.close();
			stmt.close();
			//System.out.println("Connected to the database.");
			conn.close();
		}
		catch(Exception e) {
			System.out.println("Connection Error: " + e);
```

```
            }

        }

}
```

Update code:

```
package jdbc_assignment2;

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

public class update_prod {

      public static void main(String[] args) {
            String url      = "jdbc:mysql://localhost:3306/inventory_db";
      String user     = "root";
      String password = "Sahithi@19";

      Scanner sc = new Scanner(System.in);

      System.out.print("Enter Product ID to update: ");
      int products_id = sc.nextInt();
      sc.nextLine(); // consume newline

      try (
         Connection conn = DriverManager.getConnection(url, user, password);
      ) {
         // Step 1: Check if ID exists
         String checkSql = "SELECT * FROM products WHERE products_id =
?";
         PreparedStatement checkStmt = conn.prepareStatement(checkSql);
         checkStmt.setInt(1, products_id);
         ResultSet rs = checkStmt.executeQuery();

         if (!rs.next()) {
            System.out.println("□ Record not found for ID = " + products_id);
         } else {
```

```
            // Step 2: If exists, take name and marks
            System.out.print("Enter New Product Name: ");
            String product_name = sc.nextLine();

            System.out.print("Enter New Quantity: ");
            int quantity = sc.nextInt();

            System.out.print("Enter New Price: ");
            int price = sc.nextInt();

            // Step 3: Update the record
            String updateSql = "UPDATE products SET product_name = ?,
quantity = ?, price = ?  WHERE products_id = ?";
            PreparedStatement updateStmt = conn.prepareStatement(updateSql);
            updateStmt.setString(1, product_name);
            updateStmt.setInt(2, quantity);
            updateStmt.setFloat(3, price);
            updateStmt.setInt(4, products_id);

            int rows = updateStmt.executeUpdate();

            if (rows > 0) {
                System.out.println("□ Products updated successfully.");
            }

            updateStmt.close();
          }

          rs.close();
          checkStmt.close();

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

       sc.close();
         }

}
```

Delete code:

```
package jdbc_assignment2;

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

public class update_prod {

	  public static void main(String[] args) {
		String url      = "jdbc:mysql://localhost:3306/inventory_db";
	String user     = "root";
	String password = "Sahithi@19";

	Scanner sc = new Scanner(System.in);

	System.out.print("Enter Product ID to update: ");
	int products_id = sc.nextInt();
	sc.nextLine(); // consume newline

	try (
	   Connection conn = DriverManager.getConnection(url, user, password);
	) {
	   // Step 1: Check if ID exists
	   String checkSql = "SELECT * FROM products WHERE products_id =
?";
	   PreparedStatement checkStmt = conn.prepareStatement(checkSql);
	   checkStmt.setInt(1, products_id);
	   ResultSet rs = checkStmt.executeQuery();

	   if (!rs.next()) {
	      System.out.println("□ Record not found for ID = " + products_id);
	   } else {
	      // Step 2: If exists, take name and marks
	      System.out.print("Enter New Product Name: ");
	      String product_name = sc.nextLine();

	      System.out.print("Enter New Quantity: ");
	      int quantity = sc.nextInt();
```

```
            System.out.print("Enter New Price: ");
            int price = sc.nextInt();

            // Step 3: Update the record
            String updateSql = "UPDATE products SET product_name = ?,
quantity = ?, price = ?  WHERE products_id = ?";
            PreparedStatement updateStmt = conn.prepareStatement(updateSql);
            updateStmt.setString(1, product_name);
            updateStmt.setInt(2, quantity);
            updateStmt.setFloat(3, price);
            updateStmt.setInt(4, products_id);

            int rows = updateStmt.executeUpdate();

            if (rows > 0) {
                System.out.println("□ Products updated successfully.");
            }

            updateStmt.close();
          }

          rs.close();
          checkStmt.close();

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

      sc.close();
        }

}
```