**Demonstrate stored procedures and exception handling in java**

**DBConnection.java**

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.SQLException;

public class DBConnection {

private static final String *DRIVER\_CLASS* = "com.mysql.jdbc.Driver";

private static final String *DB\_URL* = "jdbc:mysql://localhost:3306/products";

private static final String *DatabaseName*="ecommerce";

private static final String *USERNAME* = "root";

private static final String *PASSWORD* = "root";

public static Connection getConnection() throws ClassNotFoundException, SQLException {

Class.*forName*(*DRIVER\_CLASS*);

Connection connection = DriverManager.*getConnection*(*DB\_URL*, *USERNAME*, *PASSWORD*);

return connection;

}

public static void closeConnection(Connection connection) {

try {

if (connection != null) {

connection.close();

}

} catch (SQLException e) {

e.printStackTrace();

}

}

}

**StoredServlet.java**

import java.io.IOException;

import java.io.PrintWriter;

import java.math.BigDecimal;

import java.sql.CallableStatement;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.SQLException;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class StoredServlet extends HttpServlet {

private static final long *serialVersionUID* = 1L;

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

int id = Integer.*parseInt*(request.getParameter("id"));

String name = request.getParameter("name");

String description = request.getParameter("description");

BigDecimal price = new BigDecimal(request.getParameter("price"));

// Assuming you have a database connection setup

try

{

Connection con = DBConnection.*getConnection*();

CallableStatement stmt = con.prepareCall("call products.InsertProduct(?, ?, ?, ?)");

stmt.setInt(1, id);

stmt.setString(2, name);

stmt.setString(3, description);

stmt.setBigDecimal(4, price);

int rowsAffected = stmt.executeUpdate();

if (rowsAffected > 0) {

response.setContentType("text/html");

PrintWriter out = response.getWriter();

out.println("Data Inserted Successfully");

// Redirect or perform further actions if needed

} else {

response.setContentType("text/html");

PrintWriter out = response.getWriter();

out.println("Error while inserting data");

}

} catch (SQLException e) {

e.printStackTrace();

} catch (ClassNotFoundException e) {

// TODO Auto-generated catch block

e.printStackTrace();

}

}

}

**ListProduct.java**

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.Connection;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.sql.Statement;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class ListProduct extends HttpServlet {

private static final long *serialVersionUID* = 1L;

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

response.setContentType("text/html");

PrintWriter out = response.getWriter();

try {

Connection connection = DBConnection.*getConnection*();

Statement statement = connection.createStatement();

ResultSet resultSet = statement.executeQuery("SELECT \* FROM product");

out.println("<html><head><title>Product Details</title></head><body>");

out.println("<h2>Product Details</h2>");

while (resultSet.next()) {

int id = resultSet.getInt(1);

String name = resultSet.getString(2);

String description = resultSet.getString(3);

double price = resultSet.getDouble(4);

out.println("<p>ID: " + id + "</p>");

out.println("<p>Name: " + name + "</p>");

out.println("<p>Description: " + description + "</p>");

out.println("<p>Price: " + price + "</p>");

out.println("<hr>");

}

out.println("</body></html>");

DBConnection.*closeConnection*(connection);

} catch (ClassNotFoundException | SQLException e) {

e.printStackTrace();

out.println("Error retrieving product details.");

}

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

doGet(request, response);

}

}

**index.html**

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<h1>Stored Procedures Function</h1>

<h3><a href=*"ListProduct"*>List Products</a></h3>

<h1>Product Registration Form</h1>

<form action=*"StoredServlet"* method=*"post"*>

Product ID: <input type=*"text"* name=*"id"* placeholder=*"Enter Product ID"*><br><br>

Product Name: <input type=*"text"* name=*"name"* placeholder=*"Enter Product Name"*><br><br>

Product Description: <input type=*"text"* name=*"description"* placeholder=*"Enter Product Description"*><br><br>

Product Price: <input type=*"text"* name=*"price"* placeholder=*"Enter Product Price"*><br><br>

<input type=*"submit"* value=*"Add Prodcut"*>

</form>

</body>

</html>

**web.xml**

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<web-app xmlns:xsi=*"http://www.w3.org/2001/XMLSchema-instance"* xmlns=*"http://java.sun.com/xml/ns/javaee"* xsi:schemaLocation=*"http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-app\_2\_5.xsd"* id=*"WebApp\_ID"* version=*"2.5"*>

<display-name>StoredProcedures</display-name>

<welcome-file-list>

<welcome-file>index.html</welcome-file>

<welcome-file>index.jsp</welcome-file>

<welcome-file>index.htm</welcome-file>

<welcome-file>default.html</welcome-file>

<welcome-file>default.jsp</welcome-file>

<welcome-file>default.htm</welcome-file>

</welcome-file-list>

<servlet>

<description></description>

<display-name>ListProduct</display-name>

<servlet-name>ListProduct</servlet-name>

<servlet-class>ListProduct</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>ListProduct</servlet-name>

<url-pattern>/ListProduct</url-pattern>

</servlet-mapping>

<servlet>

<description></description>

<display-name>StoredServlet</display-name>

<servlet-name>StoredServlet</servlet-name>

<servlet-class>StoredServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>StoredServlet</servlet-name>

<url-pattern>/StoredServlet</url-pattern>

</servlet-mapping>

</web-app>

**SQL Query**

create database Products;

use Products;

create table product(

id INT PRIMARY KEY,

name VARCHAR(255),

description VARCHAR(255),

price DOUBLE

);

show tables;

INSERT INTO product (id, name, description, price) VALUES

(101, 'iPhone 12', 'Flagship smartphone by Apple', 999.99),

(102, 'Samsung Galaxy S21', 'Premium Android phone by Samsung', 899.99),

(103, 'Google Pixel 5', 'High-end Android phone by Google', 799.99),

(104, 'OnePlus 9 Pro', 'Powerful smartphone by OnePlus', 899.99),

(105, 'Xiaomi Mi 11', 'Feature-rich phone by Xiaomi', 699.99),

(106, 'Huawei P40 Pro', 'Top-tier Android phone by Huawei', 899.99),

(107, 'Sony Xperia 1 III', 'Premium Xperia phone by Sony', 1099.99),

(108, 'LG Velvet', 'Stylish smartphone by LG', 599.99),

(109, 'Motorola Edge+', 'Flagship device by Motorola', 799.99),

(1010, 'Nokia 8.3', 'Sleek phone by Nokia', 499.99);

select \* from product;

DELIMITER //

CREATE PROCEDURE InsertProduct(

IN p\_id INT,

IN p\_name VARCHAR(255),

IN p\_description VARCHAR(255),

IN p\_price DECIMAL(10,2)

)

BEGIN

INSERT INTO product (id, name, description, price)

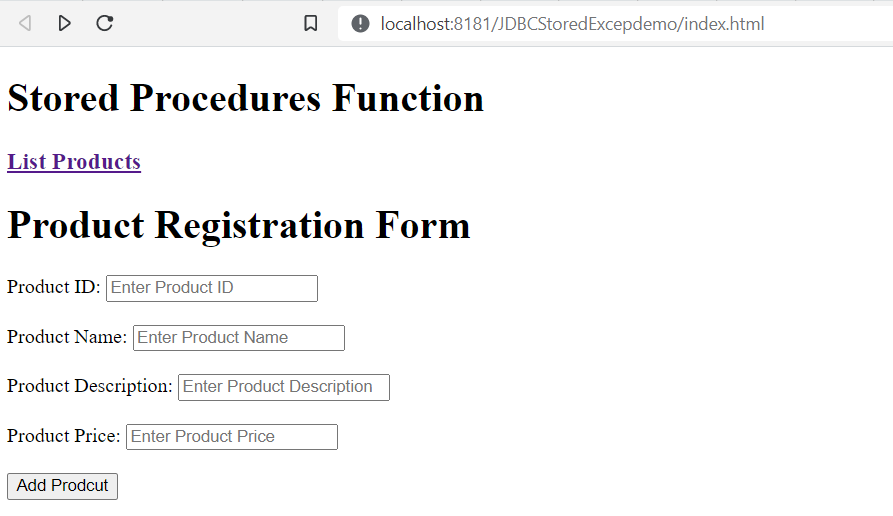
VALUES (p\_id, p\_name, p\_description, p\_price);

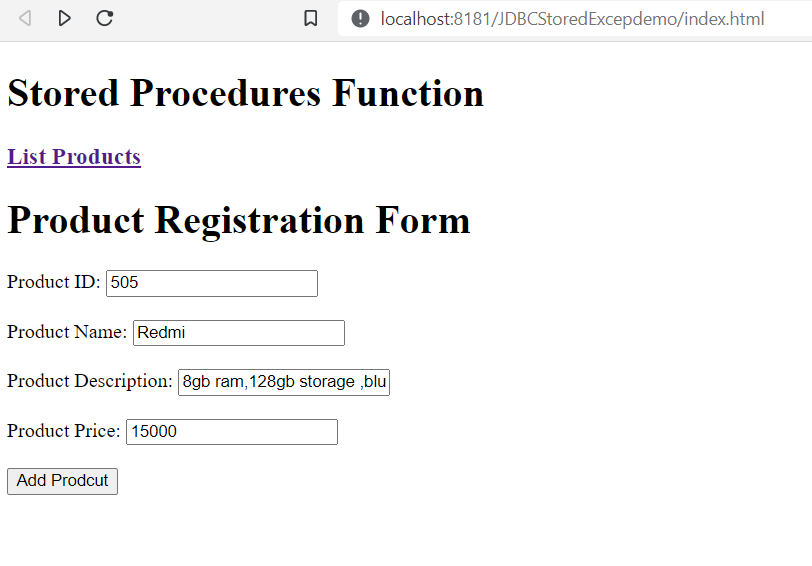
END //

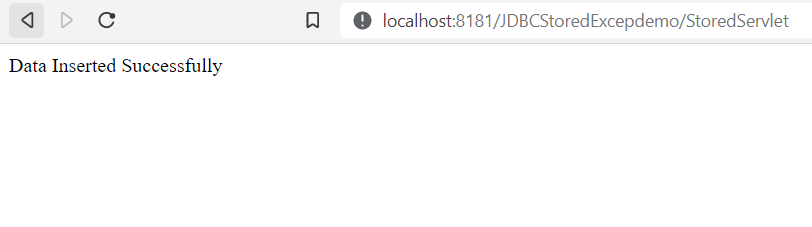
DELIMITER ;

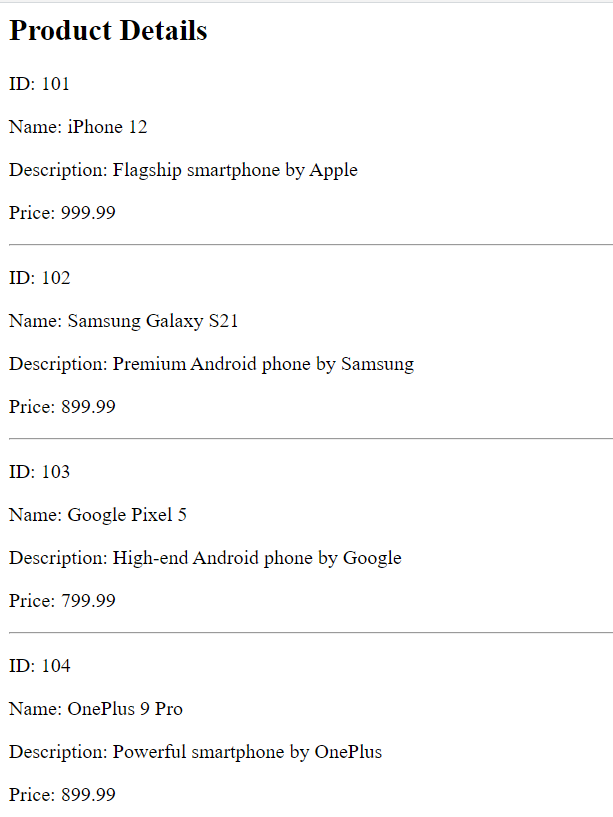
call products.InsertProduct(121, 'micromax', 'made in india', 978.0);

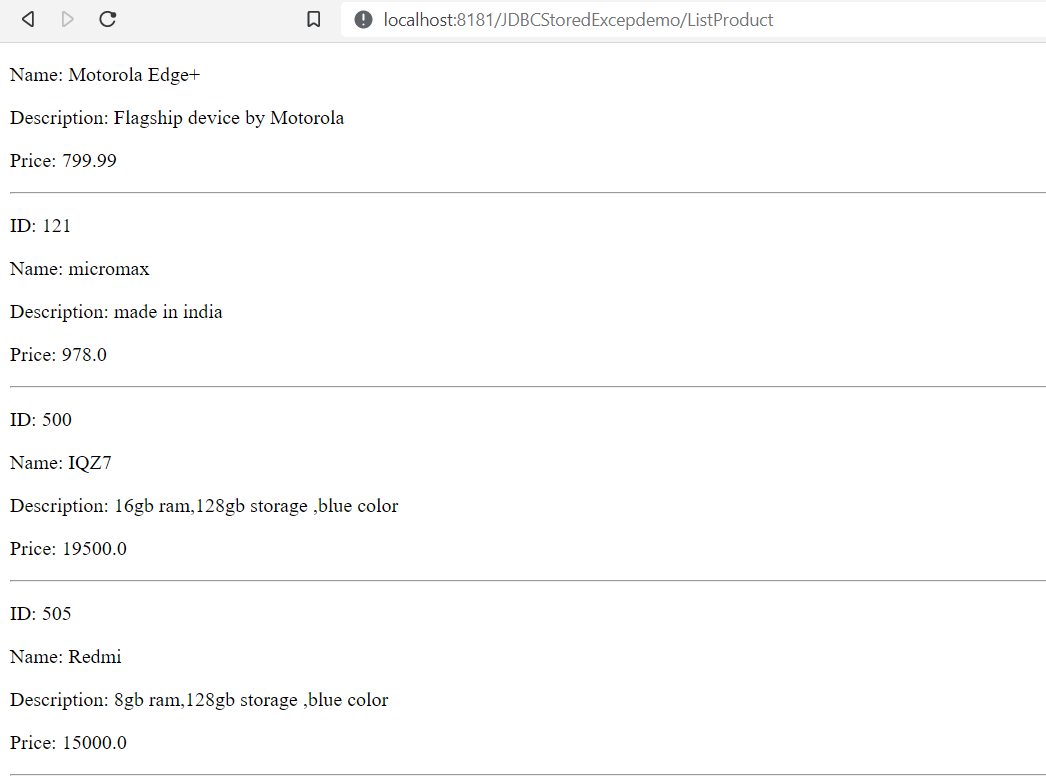
**OUTPUT**

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