Project: Adding a new product in the database

My GitHub link:

https://github.com/SK-NOORALAM-RAHAMAN/Phase-2/tree/master/Practise%20Projects

Development Environment

- Eclipse IDE for Enterprise Java Developers v2019-03 (4.11.0)
- Apache Tomcat Server v9.0

JRE: OpenJDK Runtime Environment 11.0.2

This lab has the following subsections :

Step 1.1.1: Creating a dynamic web project

- Open Eclipse
- Go the **File** menu. Choose **New->Dynamic Web Project**
- Enter the project name as **AddingNewProject**. Click on **Next**
- Enter nothing in the next screen and click on **Next**
- Check the checkbox **Generate web.xml deployment descriptor** and click on **Finish**
- This will create the project files in the Project Explorer

Step 1.1.2: Creating an HTML page

- In the Project Explorer, expand the project **AddingNewProject**
- Expand **WebContent**. Right click on **WebContent**. Choose **New->JSP File**
- Enter the filename as index.jsp and click on **Finish**
- Enter the following code:

```
<%@ page language="java" contentType="text/html; charset=UTF-8"

    pageEncoding="UTF-8"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Product Registration</title>
</head>
<body>
<form action="Register" method="post">
<table>
<tr><td>Product ID: </td><td><input type="text" name="id"></td></tr>
<tr><td>Product Name: </td><td><input type="text" name="name"></td></tr>
<tr><td>Product Cost: </td><td><input type="text" name="cost"></td></tr>
<tr><td>Quantity: </td><td><input type="text" name="quantity"></td></tr>
<tr><td></td><td><input type="submit" value="Add Product"></td></tr>
</table>
</form>
</body>
   </html>
```

Step 1.1.3: Creating a servlet Product.java

- Right click **src** and choose **New->Servlet**
- In **Class Name,** enter **Product** and click on **Finish**
- Enter the following code:

```
package com;

public class Product {

	private String id, name, cost, quantity;


	public Product() {
		super();
	}

	public Product(String id, String name, String cost, String quantity) {
		super();
		this.id = id;
		this.name = name;
		this.cost = cost;
		this.quantity = quantity;
	}

	public String getid() {
		return id;
	}

	public void setid(String id) {
		this.id = id;
	}
```

```
    public String getname() {
           return name;
    }

    public void setname(String name) {
           this.name = name;
    }

    public String getcost() {
           return cost;
    }

    public void setcost(String cost) {
           this.cost = cost;
    }

    public String getquantity() {
           return quantity;
    }

    public void setquantity(String quantity) {
           this.quantity = quantity;
    }



}
```

Step 1.1.4: Creating a servlet ProductAdd.java

- Right click **src** and choose **New->Servlet**
- In **Class Name,** enter **ProductAdd** and click on **Finish**
- Enter the following code:

```
package com;


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


public class ProductAdd {


    private String dbUrl =
    "jdbc:mysql://localhost:3306/db";private String
    dbUname = "root";
```

```
private String dbPassword = "root";
private String dbDriver = "com.mysql.cj.jdbc.Driver";

public void loadDriver(String dbDriver)
{
	try {
		Class.forName(dbDriver);
	} catch (ClassNotFoundException e) {
		// TODO Auto-generated catch block
		e.printStackTrace();
	}
}

public Connection getConnection()
{
	Connection con = null;
	try {
		con = DriverManager.getConnection(dbUrl, dbUname, dbPassword);
	} catch (SQLException e) {
		// TODO Auto-generated catch block
		e.printStackTrace();
	}
	return con;
}


public String insert(Product member)
{
	loadDriver(dbDriver);
	Connection con =  getConnection();
	String result = "Data Insert Successfully";
	String sql = "insert into addprodut values(?,?,?,?)";
```

```
            PreparedStatement ps;
            try {
            ps = con.prepareStatement(sql);
            ps.setString(1, member.getid());
            ps.setString(2, member.getname());
            ps.setString(3, member.getcost());
            ps.setString(4, member.getquantity());
            ps.executeUpdate();
            } catch (SQLException e) {
                    // TODO Auto-generated catch block
                    e.printStackTrace();
                    result = "Data insertion failed";
            }
            return result;
    }

}
```

Step 1.1.5: Creating a servlet Register.java

- Right click **src** and choose **New->Servlet**
- In **Class Name,** enter **Register** and click on **Finish**
- Enter the following code:

```
package com;

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/Register")
```

```
public class Register extends HttpServlet {
      private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public Register() {
        super();
        // TODO Auto-generated constructor stub
    }

      /**
       * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
       */
      protected void doGet(HttpServletRequest request, HttpServletResponse response)
                        throws ServletException, IOException {
            // TODO Auto-generated method stub

            response.getWriter().append("Served at: ").append(request.getContextPath());
      }
      /**
       * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)
       */
      protected void doPost(HttpServletRequest request, HttpServletResponse response)
                        throws ServletException, IOException {

            String id = request.getParameter("id");
            String name = request.getParameter("name");
            String cost = request.getParameter("cost");
            String quantity = request.getParameter("quantity");

            Product member = new Product(id, name, cost, quantity);
            ProductAdd rDao = new ProductAdd();
```

```
                String result = rDao.insert(member);

                response.getWriter().print(result);

        }

    }
```

Step 1.1.6: Configuring web.xml

- In the Project Explorer, expand **AddingNewProduct->WebContent->WEB-INF**
- Double click **web.xml** to open it in the editor
- Enter the following script:

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

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd" id="WebApp_ID" version="3.1">
  <display-name>AddProduct</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>
   </web-app>
```

Step 1.1.6: Checking for servlet-api.jar

- Before building the project, we need to add servlet-api.jar to the project
- Servlet-api.jar file is already present in your practice lab. (Refer FSD: Lab Guide - Phase 2)
- To add it to the project, follow the below mentioned steps:
    - In the Project Explorer, right click on **AddNewProduct** and choose **Properties**
    - Select **Java Build Path** from the options on the left
    - Click on **Libraries** tab on the right
    - Under **ClassPath,** expand the node that says **Apache Tomcat**
    - If there is an existing entry for **servlet-api.jar,** then click on **Cancel** and exit the window
    - If it is not there, then click on **Classpath** entry and click on **Add External JARs** button on the right
    - From the file list, select **servlet-api.jar** file and click **Ok**
    - Click on **Apply and Close**

Step 1.1.7: Building the project

- From the **Project** menu at the top, click on **Build**
- If any compile errors are shown, fix them as required

Step 1.1.8: Publishing and starting the project

- If you do not see the **Servers** tab near the bottom of the IDE, go to the Window menu and click **Show View->Servers**
- Right click on the **Server** entry and choose **Add and Remove**
- Click the **Add** button to move **AddNewProject** from the **Available** list to the **Configured** List
- Click **Finish**
- Right click on the **Server** entry and click on **Publish**
- Right click on the **Server** entry and click on **Start**
- This will start the server

Step 1.1.9: Running the project

- To run the project, open a web browser and type: **http://localhost:8080/ServletGetPost**

Step 1.1.10: Pushing the code to your GitHub repositories

- Open your command prompt and navigate to the folder where you have created your files.

  ```
  cd <folder path>
  ```

- Initialize your repository using the following command:

  ```
  git init
  ```

- Add all the files to your git repository using the following command:

  ```
  git add .
  ```

- Commit the changes using the following command:

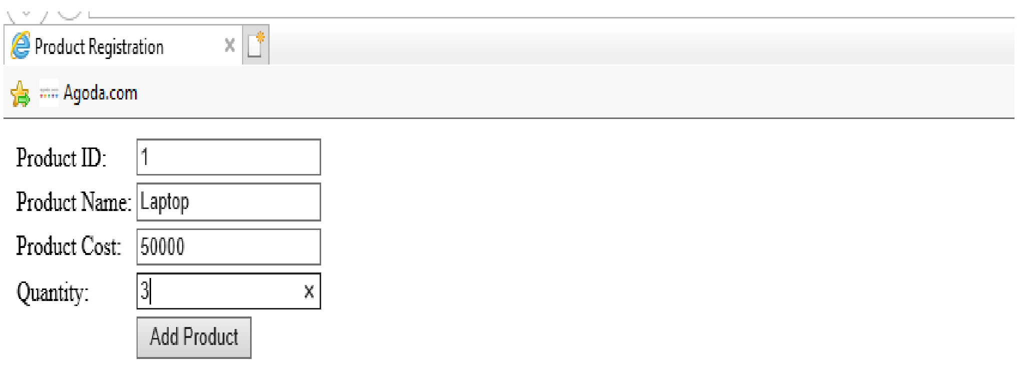
  ```
  git commit .  -m “Changes have been committed.”
  ```

- Push the files to the folder you initially created using the following command:

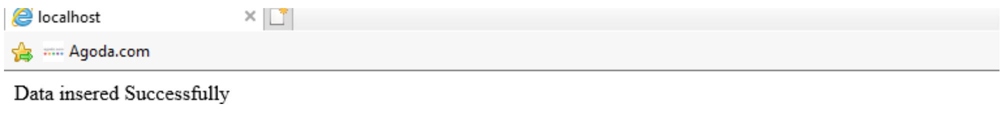
git push -u origin master

<u>Output:</u>

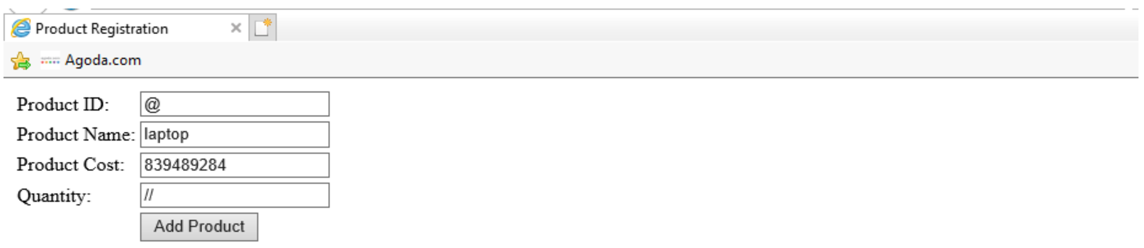
Enter the product details:



Product ID:	1
Product Name:	Laptop
Product Cost:	50000
Quantity:	3



Data insered Successfully



Product ID:	@
Product Name:	laptop
Product Cost:	839489284
Quantity:	//