INTERNATIONAL UNIVERSITY

VIETNAM NATIONAL UNIVERSITY HCMC

School of Computer Science & Engineer

Report Lab 6

Course: WEB APPLICATION DEVELOPMENT

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Lab 6: Java Beans and MVC

I. Introduction:
- Tools & Techniques: NetBeans IDE18, JSP, Servlet, JavaBean, JDK 21
- Library: JavaBean
- Language: Java
- Implemented Server: Glassfish
- Github: Link
- Demonstration: Link

II. Code Implementation:
First of all, 2 Bean classes (AccountBean and Products) are established to hold user input.

AccountBean.java:
```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-
default.txt to change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java
to edit this template
 */
package Bean;

import java.util.Collection;

/**
 *
 * @author thanhphatchau
 */
public class AccountBean {
    private String name;
    private String visanumber;
    private String address;
    private Collection products;

    public AccountBean(){
        setName("A name");
    }

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

    public String getName(){
        return name;
    }

    public void setVisa(String visanumber){
        this.visanumber = visanumber;
    }

    public String getVisa(){
        return visanumber;
    }
```

```java
    public void setAddress(String address){
        this.address = address;
    }

    public String getAddress(){
        return address;
    }

    public Collection getProducts(){
        return products;
    }

    public void setProducts(Collection products){
        this.products = products;
    }
}
```

Products.java:
```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-
default.txt to change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java
to edit this template
 */
package Bean;

/**
 *
 * @author thanhphatchau
 */
public class Products {
    private String pname;
    private String owner;
    private String country;
    private int price;

    public void setName(String name){
        this.pname=name;
    }
    public String getName(){
        return pname;
    }
    public void setOwner(String owner){
        this.owner=owner;
    }
    public String getOwner(){
        return owner;
    }
    public void setCountry(String country){
        this.country=country;
```

```
    }
    public String getCountry(){
        return country;
    }
    public void setPrice(int price){
        this.price = price;
    }
    public int getPrice(){
        return price;
    }
}
```

Index.jsp: Handled user input and parsed them into servlet.

```jsp
<%--
    Document    : account
    Created on  : May 11, 2024, 1:48:32 PM
    Author      : thanhphatchau
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Account Information</title>
    </head>
    <jsp:useBean id="accountBean" class="Bean.AccountBean" />
    <body>
        <h1 align="center">Please provide your account
information</h1>
        <hr>
        <form action="./ShoppingServlet">
            <table align="center">
                <tr align="left">
                    <th>Name:</th>
                    <th><input type="text" name="name"></th>
                </tr>
                <tr align="left">
                    <th>Visa card number:</th>
                    <th><input type="text" name="visa"
maxlength="16"></th>
                </tr>
                <tr align="left">
                    <th>Address:</th>
                    <th><input type="text" name="address"></th>
                </tr>
                <tr>
                    <th></th>
                    <th><input type="submit" value="Submit"></th>
                </tr>
```

```
            </table>
        </form>

    </body>
</html>
```

ShoppingServlet.java:
```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-
default.txt to change this license
 * Click
nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Servlet.java to
edit this template
 */

import Bean.AccountBean;
import Bean.Products;
import jakarta.servlet.RequestDispatcher;
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;
import java.io.IOException;
import java.io.PrintWriter;
import java.util.ArrayList;

/**
 *
 * @author thanhphatchau
 */
@WebServlet(urlPatterns = {"/ShoppingServlet"})
public class ShoppingServlet extends HttpServlet {

    /**
     * Processes requests for both HTTP <code>GET</code> and
<code>POST</code>
     * methods.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    protected void processRequest(HttpServletRequest request,
HttpServletResponse response)
            throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        String name = request.getParameter("name");
        String visa = request.getParameter("visa");
        String address = request.getParameter("address");
```

```java
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following
sample code. */
            AccountBean p = new AccountBean();
            p.setName(name);
            p.setVisa(visa);
            p.setAddress(address);

            ArrayList al = new ArrayList();
            Products product = new Products();
            product.setName("Iphone15");
            product.setOwner("Apple");
            product.setCountry("China");
            product.setPrice(500);
            al.add(product);
            p.setProducts(al);

            product = new Products();
            product.setName("Iphone12");
            product.setOwner("Apple");
            product.setCountry("Taiwan");
            product.setPrice(200);
            al.add(product);
            p.setProducts(al);

            product = new Products();
            product.setName("Macbook Pro M1");
            product.setOwner("Apple");
            product.setCountry("Taiwan");
            product.setPrice(1000);
            al.add(product);
            p.setProducts(al);

            product = new Products();
            product.setName("VinFast F3");
            product.setOwner("Vinfast");
            product.setCountry("Vietnam");
            product.setPrice(9000);
            al.add(product);
            p.setProducts(al);

            product = new Products();
            product.setName("YZF-R15");
            product.setOwner("Yamaha");
            product.setCountry("Japan");
            product.setPrice(3000);
            al.add(product);
            p.setProducts(al);

            String pname = p.getName();
            String pvisa = p.getVisa();
            String paddress = p.getAddress();
```

```java
            request.setAttribute("person", p);
            request.setAttribute("name", pname);
            request.setAttribute("visa", pvisa);
            request.setAttribute("address", paddress);
            RequestDispatcher requestDispatcher =
    request.getRequestDispatcher("/products.jsp");
            requestDispatcher.forward(request, response);
        }
    }

    // <editor-fold defaultstate="collapsed" desc="HttpServlet
    methods. Click on the + sign on the left to edit the code.">
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doGet(HttpServletRequest request,
    HttpServletResponse response)
            throws ServletException, IOException {
        processRequest(request, response);
    }

    /**
     * Handles the HTTP <code>POST</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doPost(HttpServletRequest request,
    HttpServletResponse response)
            throws ServletException, IOException {
        processRequest(request, response);
    }

    /**
     * Returns a short description of the servlet.
     *
     * @return a String containing servlet description
     */
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>
```

```
}
```

Products.jsp: Resulted out the transaction when meet the condition (click on button add to cart.)

```jsp
<%--
    Document    : products
    Created on : May 17, 2024, 5:30:06 PM
    Author      : thanhphatchau
--%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Checkout</title>
    </head>
    <%
        String name = request.getParameter("name");
        String visa = request.getParameter("visa");
        String address = request.getParameter("address");
    %>
    <body>
        <div align="center">
            <h2>Hi ${person.name}</h2>
            <p>If you do not want to buy something, input 0 in the
quantity.</p>
            <hr>
        </div>
        <div>
            <table>
                <tr>
                    <td>Name:</td>
                    <td>${person.name}</td>
                </tr>
                <tr>
                    <td>
                        Visa:
                    </td>
                    <td>
                        ${person.visa}
                    </td>
                </tr>
                <tr>
                    <td>
                        Address:
                    </td>
                    <td>
                        ${person.address}
                    </td>
```

```jsp
                </tr>
            </table>
                    <hr>
        </div>

        <div align="center">
            <h2>Products List</h2>
        <%
            if(request.getParameter("Add to Cart")==null){
        %>
            <form action="products.jsp" method="post">

                <table border="1px">
                <tr style="display: none;">
                    <td>
                        <input type="text" name="pname"
value="<%=name%>" readonly>
                    </td>
                    <td>
                        <input type="text" name="pvisa"
value="<%=visa%>" readonly>
                    </td>
                    <td>
                        <input type="text" name="paddress"
value="<%=address%>" readonly>
                    </td>
                    <td></td>
                    <td></td>
                </tr>
                <tr>
                    <td>
                        Product

                    </td>
                    <td>
                        Manufacturer

                    </td>
                    <td>
                        Made in

                    </td>
                    <td>
                        Price
                    </td>
                    <td>
                        Quantity
                    </td>

                </tr>
                <tr>
                    <td>
```

```
            ${person.products[0].name}
        </td>
        <td>
            ${person.products[0].owner}
        </td>
        <td>
            ${person.products[0].country}
        </td>
        <td>
            ${person.products[0].price}
        </td>
        <td>
            <input text="text" name="quantity1" value="0">
        </td>
    </tr>
    <tr>
        <td>
            ${person.products[1].name}
        </td>
        <td>
            ${person.products[1].owner}
        </td>
        <td>
            ${person.products[1].country}
        </td>
        <td>
            ${person.products[1].price}
        </td>
        <td>
            <input text="text" name="quantity2" value="0">
        </td>
    </tr>
    <tr>
        <td>
            ${person.products[2].name}
        </td>
        <td>
            ${person.products[2].owner}
        </td>
        <td>
            ${person.products[2].country}
        </td>
        <td>
            ${person.products[2].price}
        </td>
        <td>
            <input text="text" name="quantity3" value="0">
        </td>
    </tr>
    <tr>
        <td>
            ${person.products[3].name}
```

```
                    </td>
                    <td>
                        ${person.products[3].owner}
                    </td>
                    <td>
                        ${person.products[3].country}
                    </td>
                    <td>
                        ${person.products[3].price}
                    </td>
                    <td>
                        <input text="text" name="quantity4" value="0">
                    </td>
                </tr>
                <tr>
                    <td>
                        ${person.products[4].name}
                    </td>
                    <td>
                        ${person.products[4].owner}
                    </td>
                    <td>
                        ${person.products[4].country}
                    </td>
                    <td>
                        ${person.products[4].price}
                    </td>
                    <td>
                        <input text="text" name="quantity5" value="0">
                    </td>
                </tr>
                <tr>
                    <td>
                        <input type="submit" value="Add to Cart"
name="Add to Cart">
                    </td>
                </tr>
            </table>
            </form>
        <%
            } else{
                String username = request.getParameter("pname");
                String uvisa = request.getParameter("pvisa");
                String uaddress = request.getParameter("paddress");
                int q1 =
Integer.parseInt(request.getParameter("quantity1"));
                int q2 =
Integer.parseInt(request.getParameter("quantity2"));
                int q3 =
Integer.parseInt(request.getParameter("quantity3"));
                int q4 =
Integer.parseInt(request.getParameter("quantity4"));
```

```jsp
                int q5 =
Integer.parseInt(request.getParameter("quantity5"));
                int total = 500*q1 + 200*q2 + 1000*q3 +
9000*q4+3000*q5;
                out.println(
                "<table><tr><td>Name:</td><td>"+username+"</td></tr>"+
                "<tr><td>Visa:</td><td>"+uvisa+"</td></tr>"+
                "<tr><td>Address:</td><td>"+uaddress+"</td></tr>"+
                "<tr><td>Total Payment:</td><td> $"+total+"<td></tr>"
                +"</table><h4>Successfully succeeded!!!!</h4>"
                );
            }
        %>
        </div>

    </body>
</html>
```