LAB 9: JavaBeans in JSP

Lab Activities

Exercise 1: Creating a new web application and a JavaBean

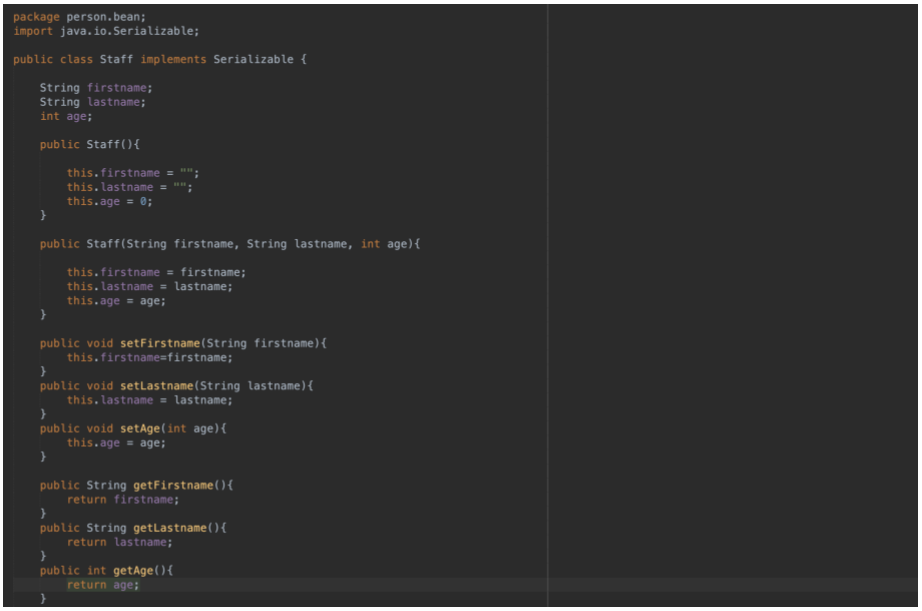
Task 1: Create a new project for web application

a) Create the Employee Web application project with the following characteristics:
Project: Employee
Location: C:\Users\User\Documents\NetBeansProjects
Folder: C:\Users\User\Documents\NetBeansProjects\ Employee
Server : Personal glassfish
Java EE version: Java EE 7
Contextpath: /Employee

Index.jsp page is automatically created by default.

b) Create JavaBean staff as following:
- Open the Employee project
- Right-click on the **src** folder, select **New→Package**. Name it as **person.bean**.
- Right-click on the **person.bean** package, select **New→Class**. Name it **Staff** and click **Finish**.

c) Edit the Staff JavaBean to Implement the a Perform the following:
- Add data member age, firstname, lastname
- Add constructor, get and set methods



```
package person.bean;
import java.io.Serializable;

public class Staff implements Serializable {

    String firstname;
    String lastname;
    int age;

    public Staff(){

        this.firstname = "";
        this.lastname = "";
        this.age = 0;
    }

    public Staff(String firstname, String lastname, int age){

        this.firstname = firstname;
        this.lastname = lastname;
        this.age = age;
    }

    public void setFirstname(String firstname){
        this.firstname=firstname;
    }
    public void setLastname(String lastname){
        this.lastname = lastname;
    }
    public void setAge(int age){
        this.age = age;
    }

    public String getFirstname(){
        return firstname;
    }
    public String getLastname(){
        return lastname;
    }
    public int getAge(){
        return age;
    }
```

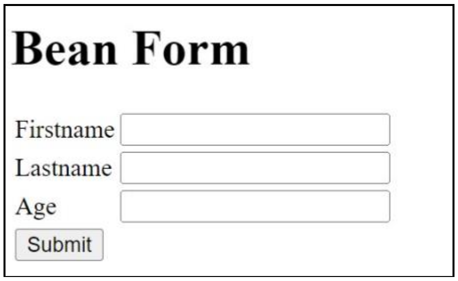
Exercise 2: Creating HTML and JSP with JavaBean

Task 1: Create an html

a) Right click on the **WebPages** folder, select **New→HTML file**.

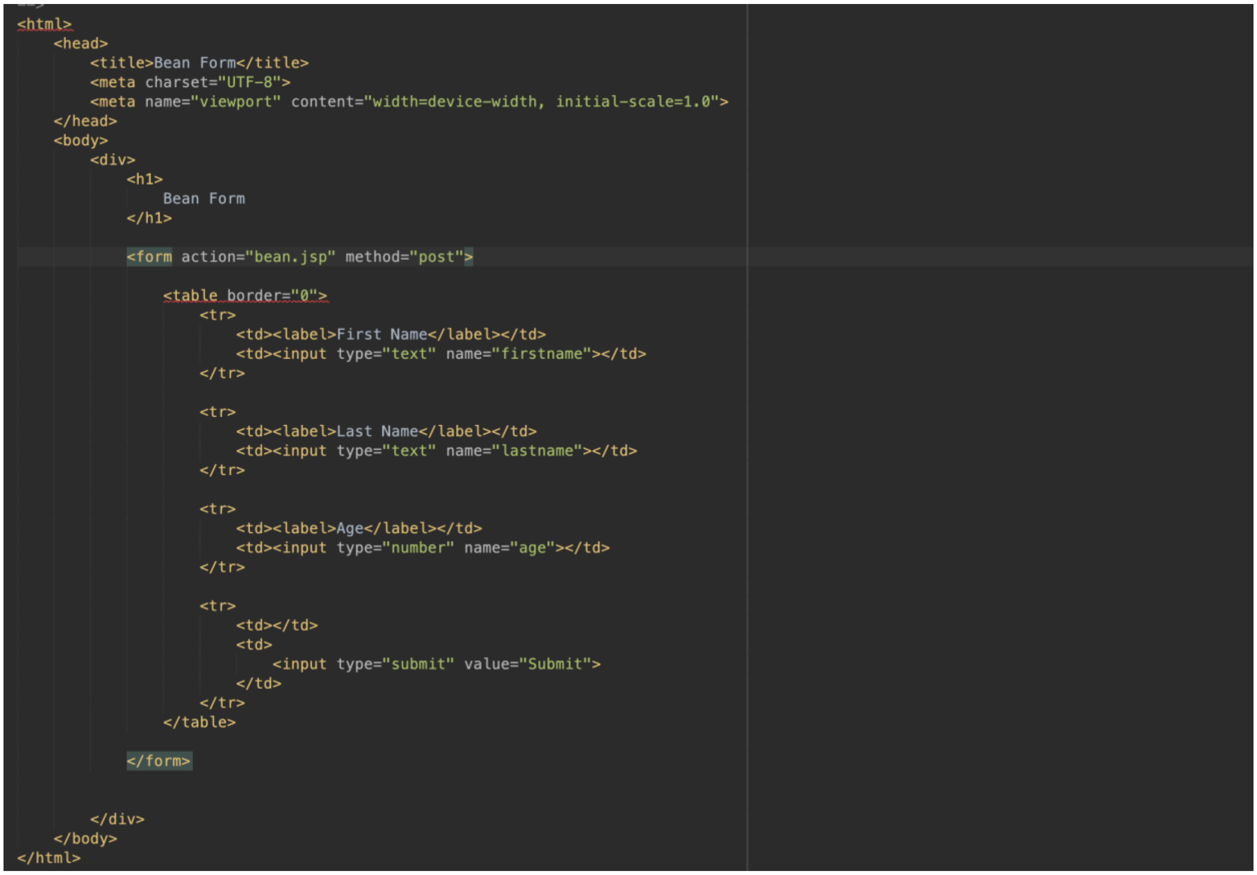
b) Name it **form.html** and click **Finish.**

c) In the form.html, create a form (as below figure) that contain input textfield for firstname, lastname and age. Submit the form to bean.jsp.



Bean Form

Firstname
Lastname
Age



```
<html>
    <head>
        <title>Bean Form</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <div>
            <h1>
                Bean Form
            </h1>

            <form action="bean.jsp" method="post">

                <table border="0">
                    <tr>
                        <td><label>First Name</label></td>
                        <td><input type="text" name="firstname"></td>
                    </tr>

                    <tr>
                        <td><label>Last Name</label></td>
                        <td><input type="text" name="lastname"></td>
                    </tr>

                    <tr>
                        <td><label>Age</label></td>
                        <td><input type="number" name="age"></td>
                    </tr>

                    <tr>
                        <td></td>
                        <td>
                            <input type="submit" value="Submit">
                        </td>
                    </tr>
                </table>

            </form>


        </div>
    </body>
</html>
```

Task 2: Create a JSP

d) Right click on the **WebPages** folder, select **New→JSP file**.

e) Name it **bean.jsp** and click **Finish**.

f) Add the following:

   a. Use to instantiate a bean.

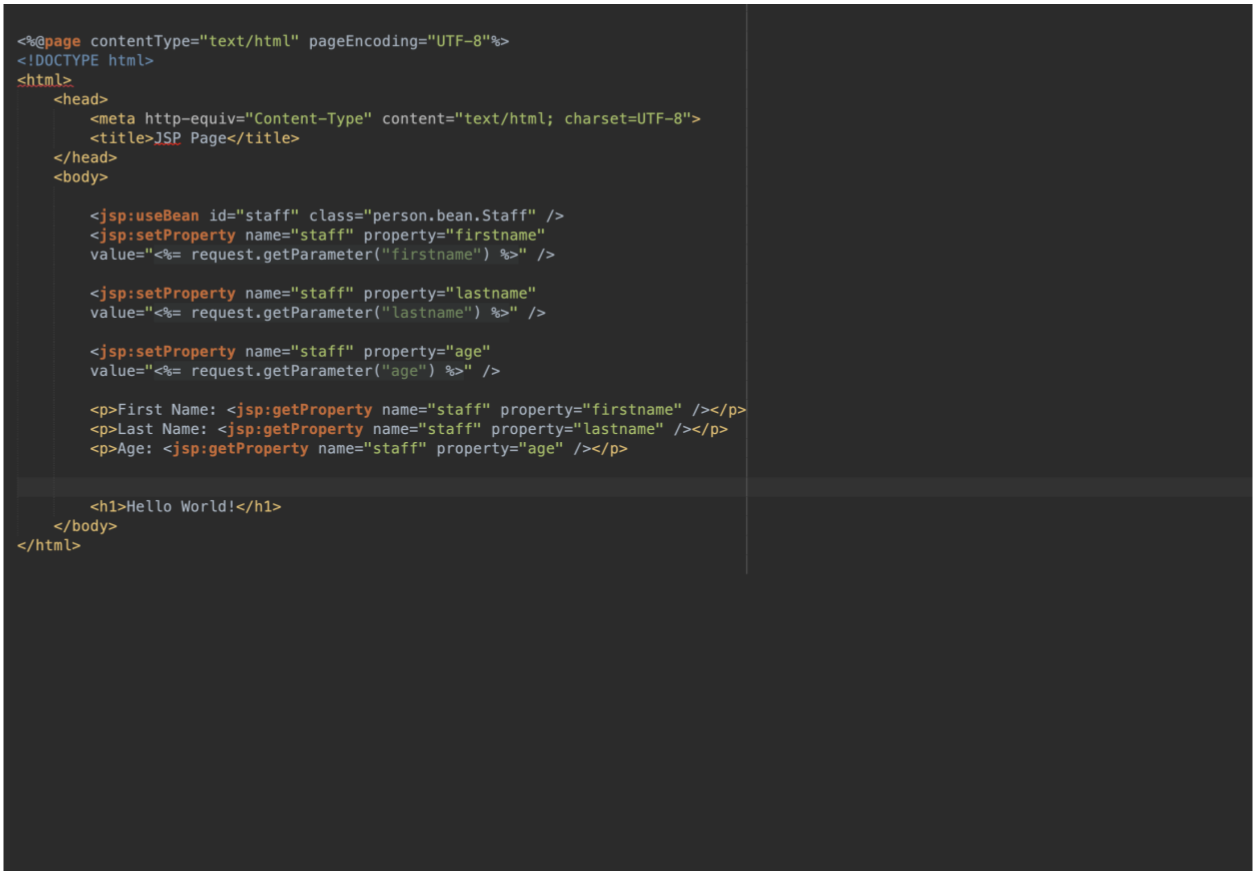
   ```
   <jsp:useBean id=”staff” class=”person.bean.Staff”>
   ```

   b. Use <jsp:**setProperty>** to set three bean's properties. For example:

   ```
   <jsp:setProperty name=”staff” property= “firstname” value="<%=
   request.getParameter("firstname") %>"/>
   ```

   c. Use <jsp:**getProperty>** to get three bean’s properties. `For example:`

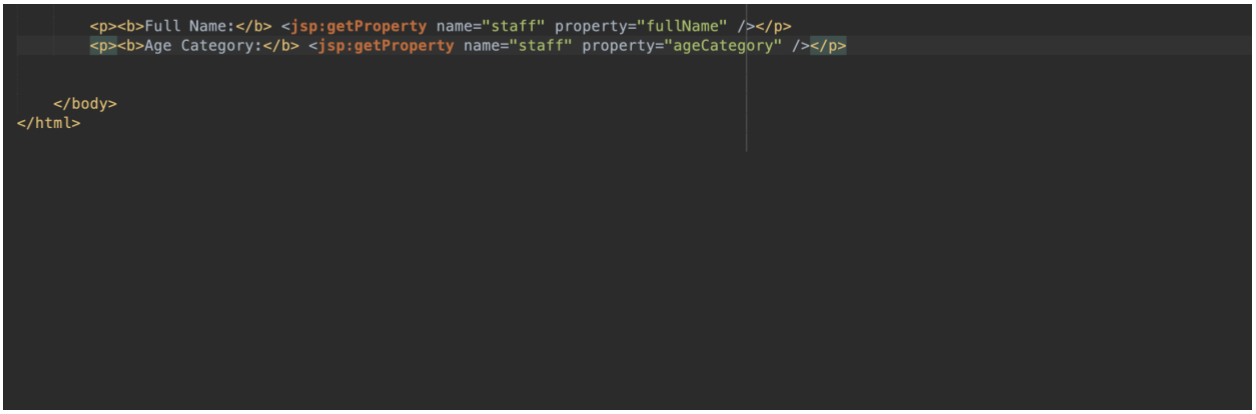
   ```
   <p>Staff Name:<jsp:getProperty name=”staff” property= “firstname”
   />
   ```



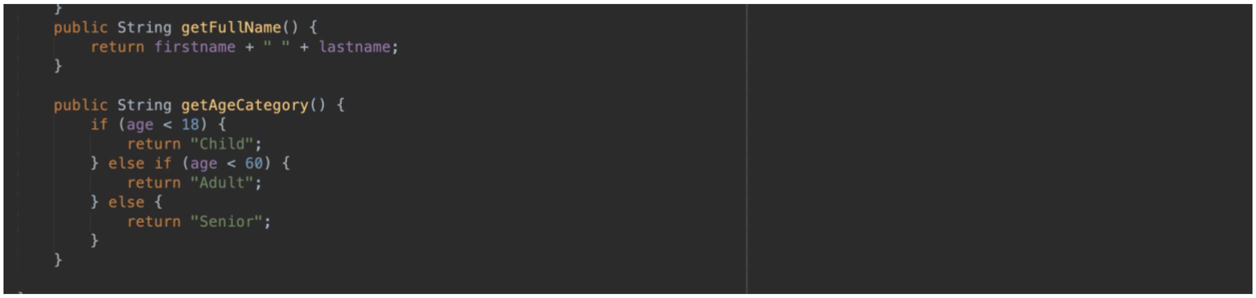
```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>

        <jsp:useBean id="staff" class="person.bean.Staff" />
        <jsp:setProperty name="staff" property="firstname"
        value="<%= request.getParameter("firstname") %>" />

        <jsp:setProperty name="staff" property="lastname"
        value="<%= request.getParameter("lastname") %>" />

        <jsp:setProperty name="staff" property="age"
        value="<%= request.getParameter("age") %>" />

        <p>First Name: <jsp:getProperty name="staff" property="firstname" /></p>
        <p>Last Name: <jsp:getProperty name="staff" property="lastname" /></p>
        <p>Age: <jsp:getProperty name="staff" property="age" /></p>


        <h1>Hello World!</h1>
    </body>
</html>
```

Exercise 3: Add the method in JavaBean and modify JSP

1. Add a function **getFullName()** in the JavaBean **Staff**. Then modify the **bean.jsp** file to show the full name of the current staffin bean.jsp.
2. Add a function **getAgeCategory**() in the JavaBean **Staff**. Classifies the staff's age into categories (e.g., "Child," "Adult," "Senior"). Use <jsp:getProperty> to display the age category.



```
        <p><b>Full Name:</b> <jsp:getProperty name="staff" property="fullName" /></p>
        <p><b>Age Category:</b> <jsp:getProperty name="staff" property="ageCategory" /></p>


    </body>
</html>
```



```
    }
    public String getFullName() {
        return firstname + " " + lastname;
    }

    public String getAgeCategory() {
        if (age < 18) {
            return "Child";
        } else if (age < 60) {
            return "Adult";
        } else {
            return "Senior";
        }
    }
```

Post Lab

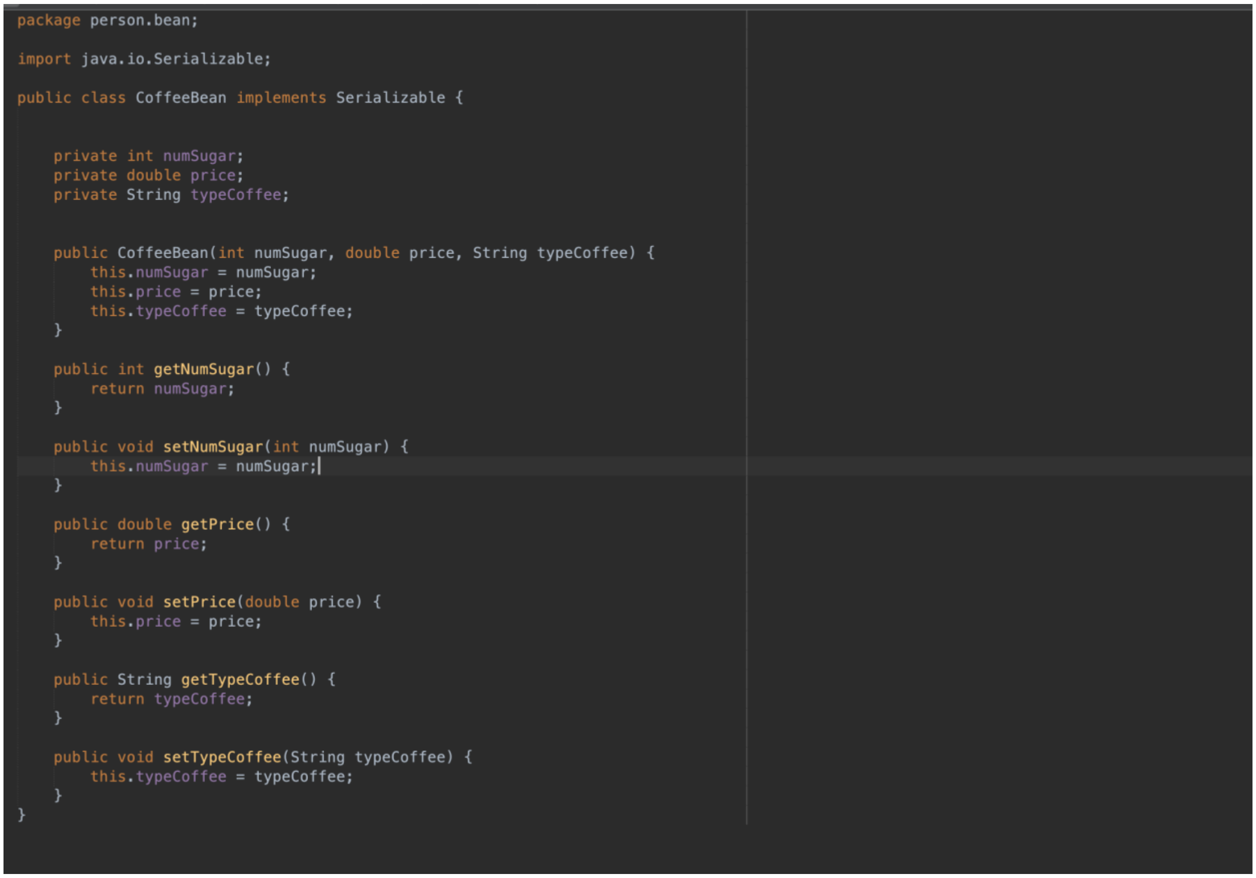
Task 1: Create a JavaBean `CoffeeBean` with the following:

Data members:

- `int numSugar;`
- `double price;`
- `String typeCoffee;`

Methods:

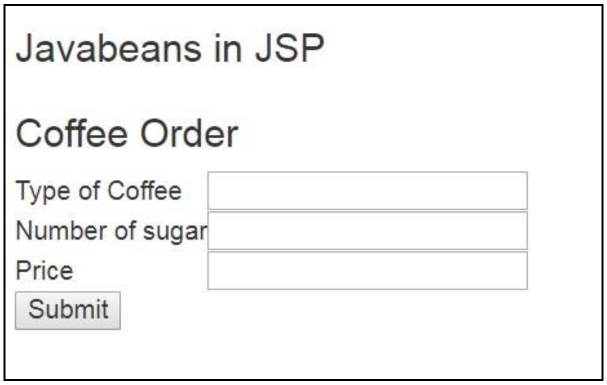
- Constructor
- Accessor
- Mutator



```
package person.bean;

import java.io.Serializable;

public class CoffeeBean implements Serializable {


    private int numSugar;
    private double price;
    private String typeCoffee;


    public CoffeeBean(int numSugar, double price, String typeCoffee) {
        this.numSugar = numSugar;
        this.price = price;
        this.typeCoffee = typeCoffee;
    }

    public int getNumSugar() {
        return numSugar;
    }

    public void setNumSugar(int numSugar) {
        this.numSugar = numSugar;
    }

    public double getPrice() {
        return price;
    }

    public void setPrice(double price) {
        this.price = price;
    }

    public String getTypeCoffee() {
        return typeCoffee;
    }

    public void setTypeCoffee(String typeCoffee) {
        this.typeCoffee = typeCoffee;
    }
}
```

Task 2: Create a HTML `CoffeeOrder.html` **form with the following:**

Submit the CoffeeOrder form to CoffeeProcess.jsp using request scope.



Javabeans in JSP

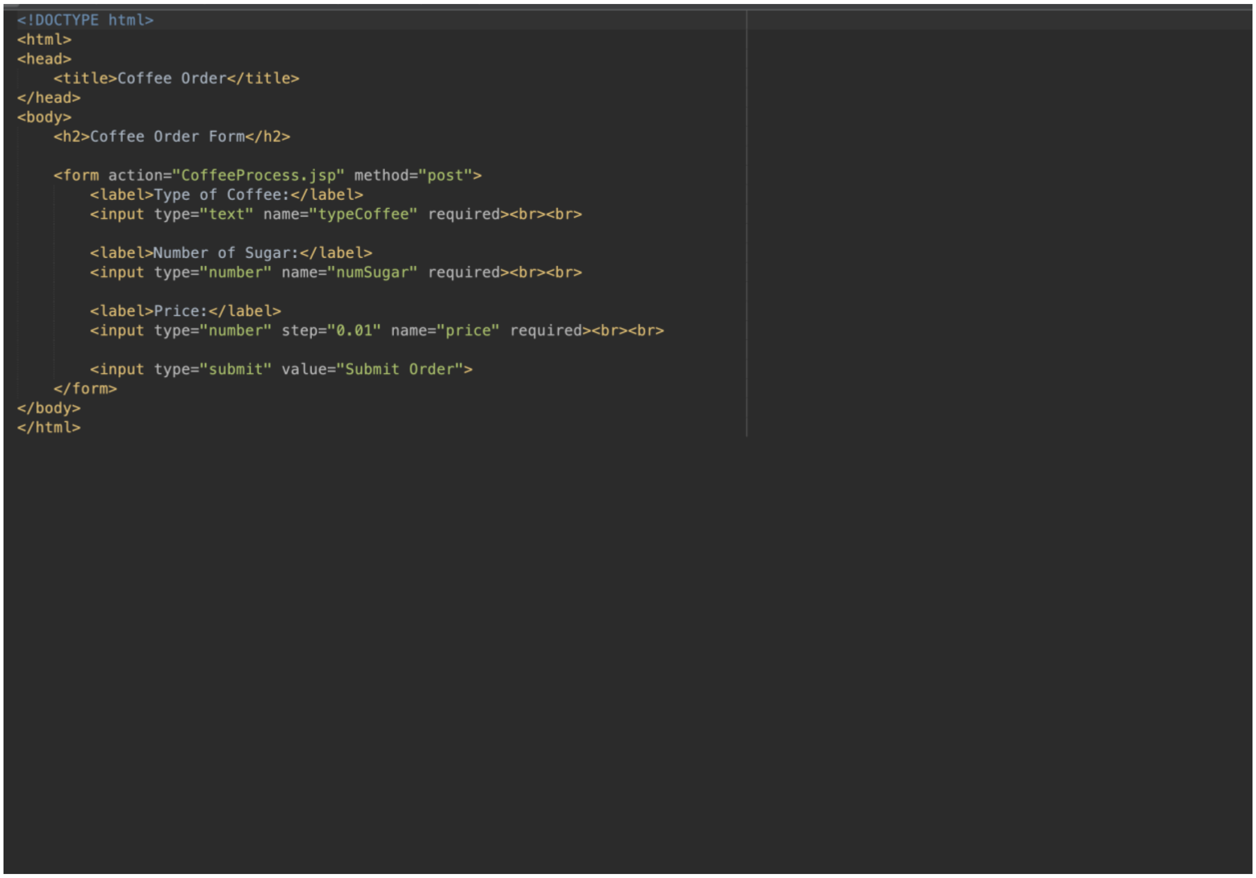
Coffee Order

Type of Coffee

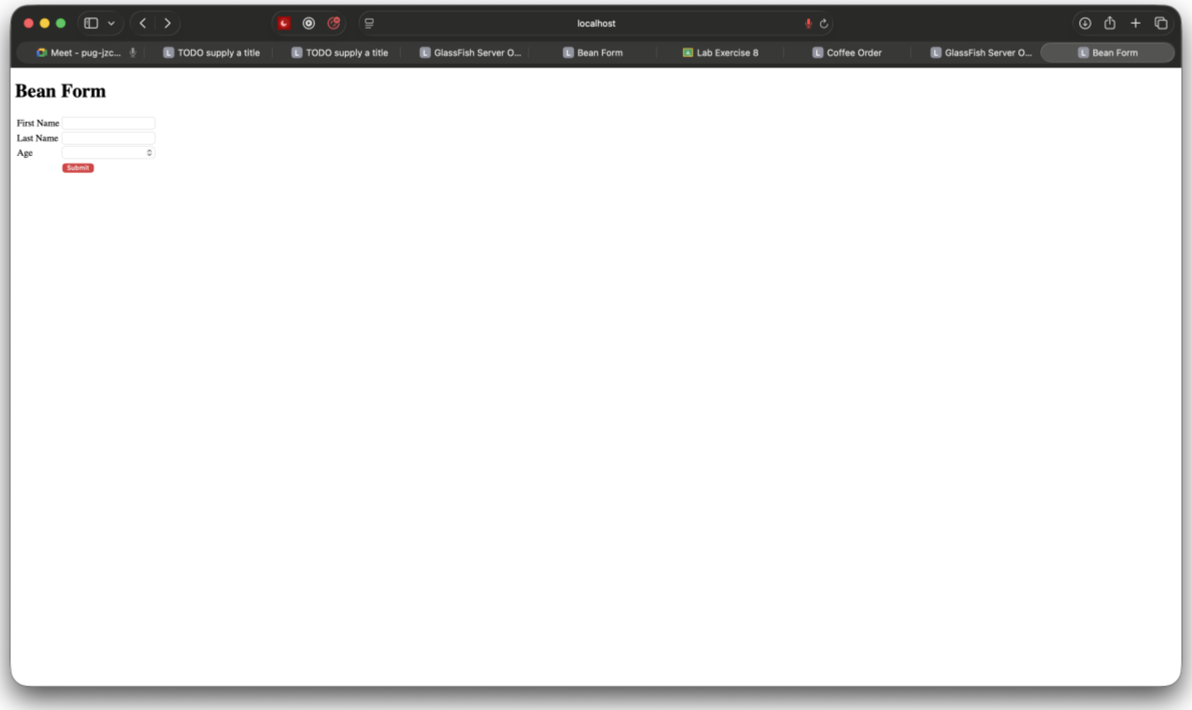
Number of sugar

Price

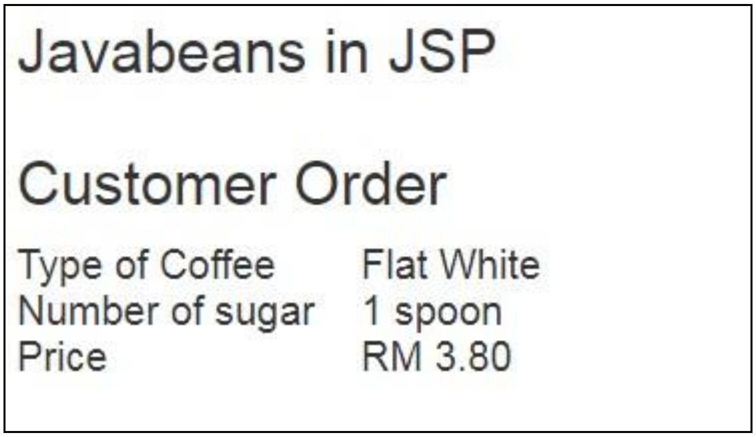
Submit



```
<!DOCTYPE html>
<html>
<head>
    <title>Coffee Order</title>
</head>
<body>
    <h2>Coffee Order Form</h2>

    <form action="CoffeeProcess.jsp" method="post">
        <label>Type of Coffee:</label>
        <input type="text" name="typeCoffee" required><br><br>

        <label>Number of Sugar:</label>
        <input type="number" name="numSugar" required><br><br>

        <label>Price:</label>
        <input type="number" step="0.01" name="price" required><br><br>

        <input type="submit" value="Submit Order">
    </form>
</body>
</html>
```


Bean Form

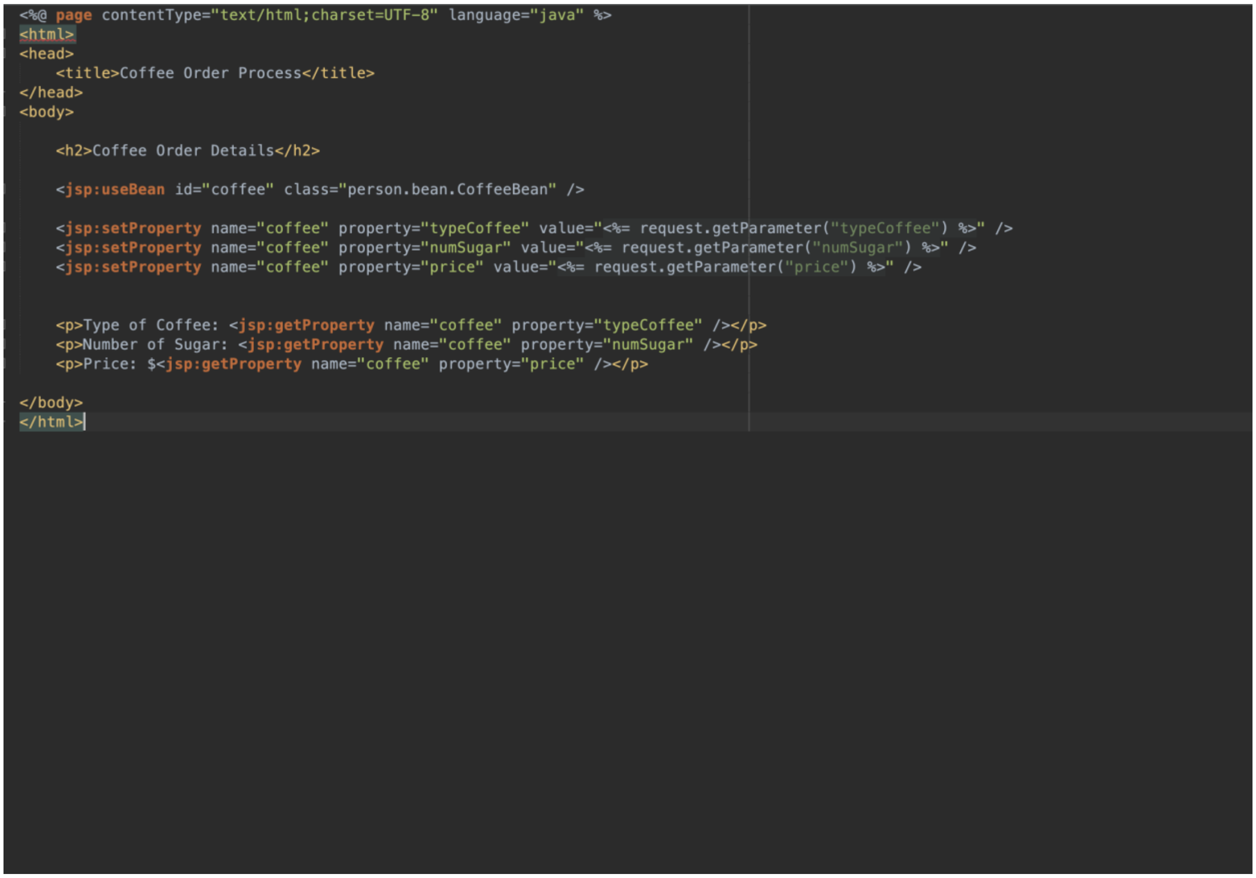
Task 3: Create a JSP CoffeeProcess.jsp and display the submitted values from the HTML form using request scope. The output should be display as follows:



Javabeans in JSP

Customer Order

Type of Coffee	Flat White
Number of sugar	1 spoon
Price	RM 3.80



```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<html>
<head>
    <title>Coffee Order Process</title>
</head>
<body>

    <h2>Coffee Order Details</h2>

    <jsp:useBean id="coffee" class="person.bean.CoffeeBean" />

    <jsp:setProperty name="coffee" property="typeCoffee" value="<%= request.getParameter("typeCoffee") %>" />
    <jsp:setProperty name="coffee" property="numSugar" value="<%= request.getParameter("numSugar") %>" />
    <jsp:setProperty name="coffee" property="price" value="<%= request.getParameter("price") %>" />


    <p>Type of Coffee: <jsp:getProperty name="coffee" property="typeCoffee" /></p>
    <p>Number of Sugar: <jsp:getProperty name="coffee" property="numSugar" /></p>
    <p>Price: $<jsp:getProperty name="coffee" property="price" /></p>

</body>
</html>
```