Universiti Malaysia Terengganu

Faculty of Computer Sciences and Mathematics

Web Based Application Development
CSM3023

Lab Report 5

Prepared for:

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Task 1 : Using Scriptlet to Access a Simple JavaBeans

- Objective: Use Java Scriptlet to access JavaBeans.

- Code:

  - Message.java

```java
package com.mycompany.lab5;

/**
 *
 * @author Ahmad Afif Syahmi bin Ahmad Rozali
 */
public class Message {

    private String msg;

    public Message() {
    }

    public Message(String msg) {
        this.msg = msg;
    }

    public String getMsg() {
        return msg;
    }

    public void setMsg(String msg) {
        this.msg = msg;
    }

}
```

  - Message1.jsp

```jsp
<%--
    Document    : Message1
    Created on  : 8 May 2024, 2:36:49 pm
    Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page info="Using JSP Standard Action to call JavaBeans" %>
<%@page import="java.util.Date, com.mycompany.lab5.Message" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Using JSP Scriptlet</title>
```

```
        <style>
            p {
                font-size: 2rem;
                color: purple;
            }
        </style>
    </head>
    <body>
        <h1>Using JSP Scriplet to call JavaBeans</h1>

        <%
            //Create an object
            Message objMsg = new Message();

            //Assign value
            objMsg.setMsg("Welcome to CSM3023 course!");

            //Display value
            out.println("<p>" + objMsg.getMsg() + "</p>");

            //Add date
            out.println("<p>Current date is " + new Date() +
"</p>");
        %>
    </body>
</html>
```
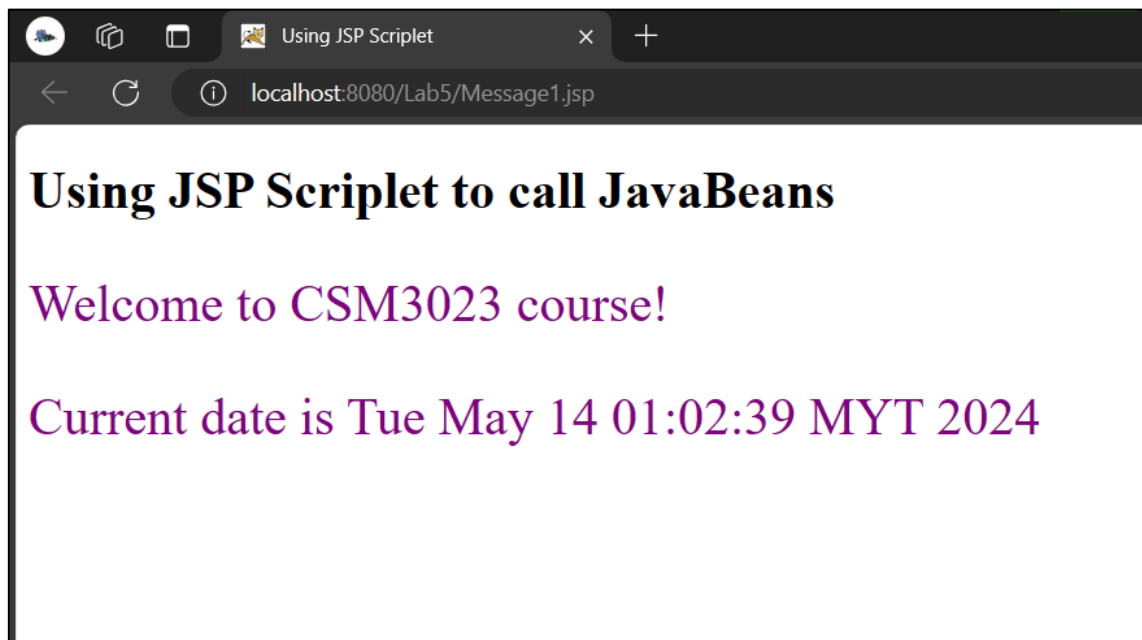
- Output:

- Reflection:

  o What you have learnt from this exercise?

From this exercise, I have learned how to use JavaBeans in JSP (JavaServer Pages) and how to call them using JSP scriplets.

○ Explain the differences when calling JavaBeans using JSP Standard Action and Java Scriptlet.

JSTL (JavaServer Pages Standard Tag Library) provides a set of tags that encapsulate core functionality common to many JSP applications. When using JSTL, JavaBeans can be included using tags like <jsp:useBean> to instantiate and manage beans, and <jsp:setProperty> to set properties on those beans. This approach promotes separation of concerns by keeping Java code out of the JSP file, making the code easier to read and maintain.

JSP scriplets allow to directly embed Java code within JSP page using <% %> tag. While convenient for quick prototyping and small projects, scriplets can lead to code that's harder to maintain and debug, as it mixes presentation logic with business logic. Scriplets can make the JSP page cluttered and less readable, especially as the page grows in complexity.

Task 2 : Problem Solving using JavaBeans

- Objective: Use JavaBeans in Java Scriptlet.

- Code:

  o Register.java

```java
package com.mycompany.lab5;

/**
 *
 * @author Ahmad Afif Syahmi bin Ahmad Rozali
 */
public class Register {

    private String icNo, name;
    private int trainingType, paxNo, isStudent;

    public Register() {
    }

    public Register(String icNo, String name, int trainingType,
int paxNo, int isStudent) {
        this.icNo = icNo;
        this.name = name;
        this.trainingType = trainingType;
        this.paxNo = paxNo;
        this.isStudent = isStudent;
    }

    public String getIcNo() {
        return icNo;
    }

    public void setIcNo(String icNo) {
        this.icNo = icNo;
    }

    public String getName() {
        return name;
    }

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

    public int getTrainingType() {
        return trainingType;
    }

    public void setTrainingType(int trainingType) {
        this.trainingType = trainingType;
    }
```

```java
    public int getPaxNo() {
        return paxNo;
    }

    public void setPaxNo(int paxNo) {
        this.paxNo = paxNo;
    }

    public int getIsStudent() {
        return isStudent;
    }

    public void setIsStudent(int isStudent) {
        this.isStudent = isStudent;
    }

    public String getTrainingTypeStr() {
        switch (getTrainingType()) {
            case 1:
                return "C++ Training";

            case 2:
                return "Java for Beginner";

            case 3:
                return "HTML5";

            case 4:
                return "Java EEE";

            case 5:
                return "Android Programming";

            default:
                return "";
        }
    }

    public String getIsStudentStr() {
        if (getIsStudent() == 1) {
            return "Yes";
        }
        else {
            return "No";
        }
    }

    public double getAmount() {
        double amount;

        switch (getTrainingType()) {
            case 1:
                amount = 3000 * getPaxNo();
                break;

            case 2:
                amount = 3000 * getPaxNo();
                break;
```

```
                case 3:
                    amount = 2800 * getPaxNo();
                    break;

                case 4:
                    amount = 5500 * getPaxNo();
                    break;

                case 5:
                    amount = 3200 * getPaxNo();
                    break;

                default:
                    amount = 0;
        }

        if (getIsStudent() == 1) {
            amount *= 0.9;
        }

        return amount;
    }

}
```

o   registerTraining.jsp

```
<%--
    Document    : registerTraining
    Created on : 8 May 2024, 3:09:37 pm
    Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Training Registration</title>
    </head>
    <body>
        <h1>Register IT Training</h1>

        <form action="processTraining.jsp">
            <fieldset>
                <legend><b>Training Registration</b></legend>
                <table>
                    <tbody>
                        <tr>
                            <td><label for="icNo">IC
No</label></td>
                            <td><input type="text" name="icNo"
id="icNo" placeholder="E.g. 911210-05-1234"></td>
                        </tr>
                        <tr>
```

```html
                                       <td><label
for="name">Name</label></td>
                                       <td><input type="text" name="name"
id="name" placeholder="Enter your name"></td>
                                   </tr>
                                   <tr>
                                       <td><label for="trainingType">Type
of Training</label></td>
                                       <td>
                                           <select name="trainingType"
id="trainingType">
                                               <option value="1">C++
Training</option>
                                               <option value="2">Java for
Beginner</option>
                                               <option
value="3">HTML5</option>
                                               <option value="4">Java
EEE</option>
                                               <option value="5">Android
Programming</option>
                                           </select>
                                       </td>
                                   </tr>
                                   <tr>
                                       <td><label for="paxNo">No of
Pax</label></td>
                                       <td><input type="number"
name="paxNo" id="paxNo" placeholder="No of pax" min="0"></td>
                                   </tr>
                                   <tr>
                                       <td><label>Student</label></td>
                                       <td>
                                           <input type="radio"
name="isStudent" id="yes" value="1">
                                           <label for="yes">Yes</label>
                                           <input type="radio"
name="isStudent" id="no" value="0" checked="checked">
                                           <label for="no">No</label>
                                       </td>
                                   </tr>
                                   <tr>
                                       <td>
                                           <br>
                                           <button
type="submit">Submit</button>
                                           <button
type="reset">Cancel</button>
                                       </td>
                                   </tr>
                               </tbody>
                           </table>
                       </fieldset>
               </form>
           </body>
</html>
```
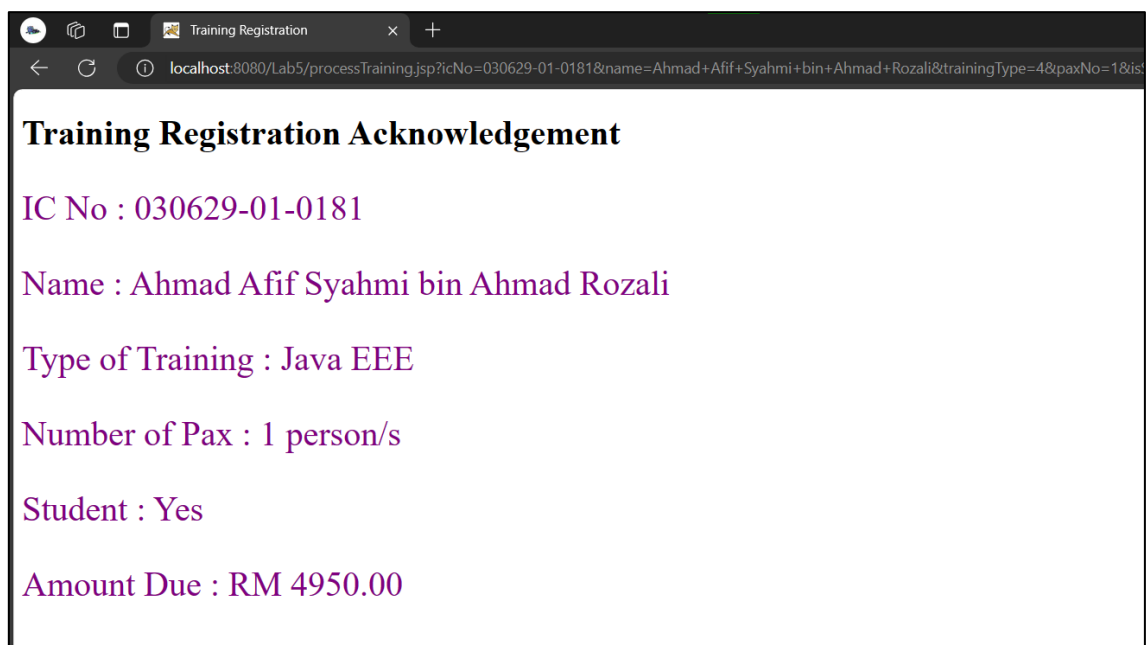
- processTraining.jsp

```jsp
<%--
    Document    : processTraining
    Created on : 8 May 2024, 3:27:45 pm
    Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="com.mycompany.lab5.Register" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Training Registration</title>
        <style>
            p {
                font-size: 2rem;
                color: purple;
            }
        </style>
    </head>
    <body>
        <h1>Training Registration Acknowledgement</h1>

        <%
            String icNo, name;
            int trainingType, paxNo, isStudent;

            String trainingTypeStr, isStudentStr;
            int fees;

            icNo = request.getParameter("icNo");
            name = request.getParameter("name");
            trainingType =
Integer.parseInt(request.getParameter("trainingType"));
            paxNo =
Integer.parseInt(request.getParameter("paxNo"));
            isStudent =
Integer.parseInt(request.getParameter("isStudent"));

            Register register = new Register(icNo, name,
trainingType, paxNo, isStudent);
        %>

        <p>IC No : <%= register.getIcNo() %></p>
        <p>Name : <%= register.getName() %></p>
        <p>Type of Training : <%= register.getTrainingTypeStr()
%></p>
        <p>Number of Pax : <%= register.getPaxNo() %>
person/s</p>
        <p>Student : <%= register.getIsStudentStr() %></p>
        <p>Amount Due : RM <%= String.format("%.2f",
register.getAmount()) %></p>
    </body>
</html>
```

- Output:

- Reflection:

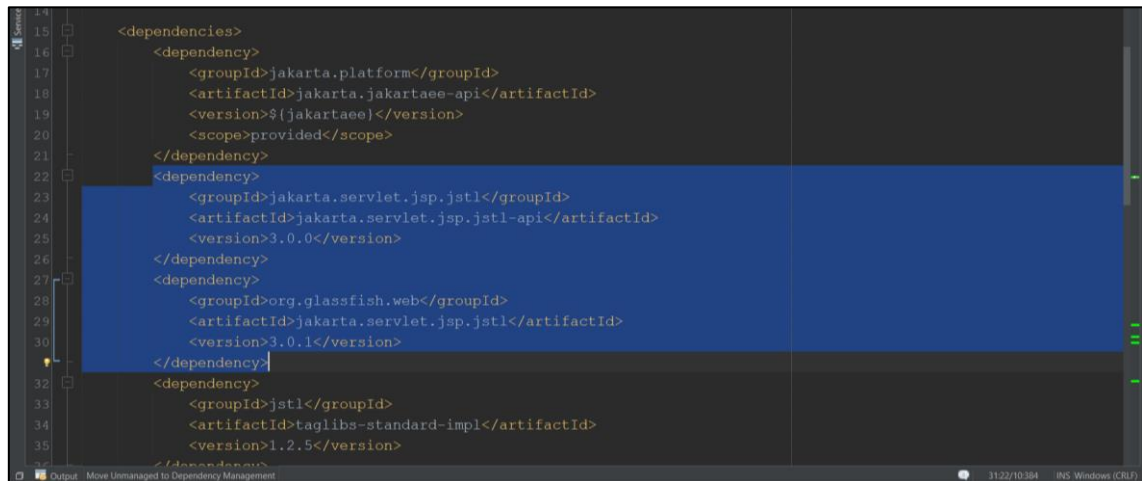 o What have you learned from this exercise?

  From this exercise, I have learned how to create a JavaBean named Register to handle registration details for IT training.

  o Describe the steps how you construct Register JavaBeans?

- Determine the properties needed for registration, such as IC number, name, training type, number of participants, and student status. Declare private variables for each property in the Java class.

- Implement a no-argument constructor and another constructor that accepts parameters for initializing the properties.

- Generate getter and setter methods for each property to provide access to and modification of the class's private variables.

- Implement additional methods as needed for functionality like converting integer values to descriptive strings (getTrainingTypeStr() and getIsStudentStr()), and calculating registration fees (getAmount()).

Task 3 : Installing JSTL Taglibs

- Objective: Installation of Apache Taglibs.

- Output:

- Reflection:

  o What you have learnt from this exercise?

    From this exercise I have learned how to install JSTL Taglibs in a web application
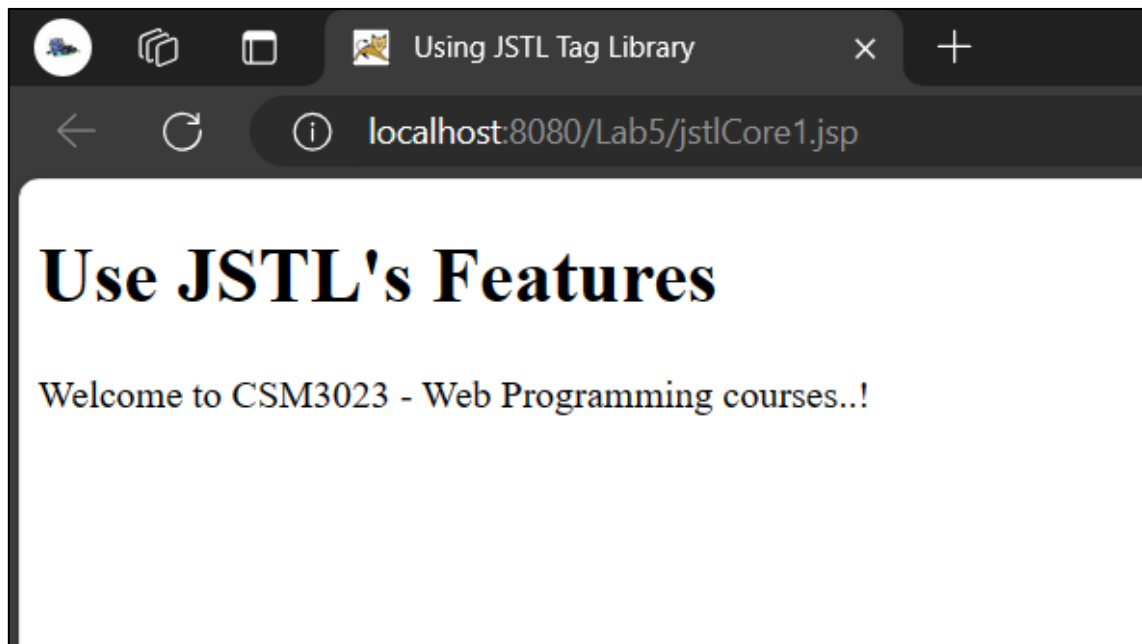
    project.

Task 4 : Using Java Standard Tag Library (JSTL)

- Objective: Using JSTL core tags directive to retrieve information from one page and display it in another JSP page and format number, currency.

- Code (Task 1):

  - jstlCore1.jsp

```
<%--
    Document   : jstlCore1
    Created on : 11 May 2024, 1:16:49 pm
    Author     : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="jakarta.tags.core" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Using JSTL Tag Library</title>
    </head>
    <body>
        <h1>Use JSTL's Features</h1>
        <c:set var="message" value="Welcome to CSM3023 - Web
Programming courses..!" />
        <p><c:out value="${message}" /></p>
    </body>
</html>
```

- Output (Task 1):

- Code (Task 2):

  ○ userRegistration.html

```
<!DOCTYPE html>
<html>
    <head>
        <title>User Registration</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    </head>
    <body>
        <h1>User Registration</h1>

        <form action="processUser.jsp">
            <fieldset>
                <legend><b>User Details</b></legend>
                <table>
                    <tbody>
                        <tr>
                            <td><label
for="userName">Name</label></td>
                            <td><input type="text"
name="userName" id="userName" placeholder="Enter name"></td>
                        </tr>
                        <tr>
                            <td><label
for="userSurname">Surname</label></td>
```

```html
                    <td><input type="text"
name="userSurname" id="userSurname" placeholder="Enter
surname"></td>
                </tr>
                <tr>
                    <td><label
for="userPassword">Password</label></td>
                    <td><input type="password"
name="userPassword" id="userPassword" placeholder="Max 10
characters" maxlength="10"></td>
                </tr>
                <tr>
                    <td>Gender</td>
                    <td>
                        <input type="radio"
name="userGender" id="male" value="1">
                            <label for="male">Male</label>
                        <input type="radio"
name="userGender" id="female" value="2">
                            <label
for="female">Female</label>
                    </td>
                </tr>
                <tr>
                    <td>Type of User</td>
                    <td>
                        <select name="userType"
id="userType">
                            <option
value="1">Beginner</option>
                            <option
value="2">Intermediate</option>
                            <option
value="3">Advanced</option>
                        </select>
                    </td>
                </tr>
                <tr>
                    <td>Prefer Language</td>
                    <td>
                        <input type="checkbox"
name="userLanguage" id="malay" value="1">
                            <label for="malay">Malay</label>
                        <input type="checkbox"
name="userLanguage" id="english" value="2">
                            <label
for="english">English</label>
                        <input type="checkbox"
name="userLanguage" id="mandarin" value="3">
                            <label
for="mandarin">Mandarin</label>
                        <input type="checkbox"
name="userLanguage" id="tamil" value="4">
                            <label for="tamil">Tamil</label>
                    </td>
                </tr>
                <tr>
                    <td>
                        <br>
```

```
                                        <button
type="reset">Cancel</button>
                                        <button
type="submit">Submit</button>
                                </td>
                            </tr>
                        </tbody>
                    </table>
                </fieldset>
            </form>
        </body>
</html>
```

○ processUser.jsp

```
<%--
    Document   : processUser
    Created on : 12 May 2024, 12:15:14 am
    Author     : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="jakarta.tags.core" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>User Registration</title>
    </head>
    <body>
        <h1>Retrieve info using c:param & display it using
c:out</h1>

        <p>Name: <c:out value="${param.userName}" /></p>
        <p>Surname: <c:out value="${param.userSurname}" /></p>
        <p>
            Gender:
            <c:choose>
                <c:when test="${param.userGender ==
1}">Male</c:when>
                <c:when test="${param.userGender ==
2}">Female</c:when>
            </c:choose>
        </p>
        <p>
            Type of user:
            <c:choose>
                <c:when test="${param.userType ==
1}">Beginner</c:when>
                <c:when test="${param.userType ==
2}">Intermediate</c:when>
                <c:when test="${param.userType ==
3}">Advanced</c:when>
            </c:choose>
```

```
            </p>
            <p>
                Prefer Language(s):
                <c:choose>
                    <c:when test="${paramValues.userLanguage !=
null}">
                        <c:forEach
items="${paramValues.userLanguage}" var="lang">
                            <c:choose>
                                <c:when test="${lang ==
1}">Malay</c:when>
                                <c:when test="${lang ==
2}">English</c:when>
                                <c:when test="${lang ==
3}">Mandarin</c:when>
                                <c:when test="${lang ==
4}">Tamil</c:when>
                            </c:choose>
                        </c:forEach>
                    </c:when>
                    <c:otherwise>None Selected</c:otherwise>
                </c:choose>
            </p>
        </body>
</html>
```

- Output (Task 2):

- Code (Task 3):

  o jstlFormat1.jsp

```jsp
<%--
    Document    : jstlFormat1
    Created on  : 12 May 2024, 1:47:18 am
    Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="jakarta.tags.core" %>
<%@taglib prefix="fmt" uri="jakarta.tags.fmt" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>JSTL Formatting Tag</title>
    </head>
    <body>
        <h1>Using JSTL Formatting Tag for Formatting</h1>

        <!<!-- Assign specific number to variable -->
        <c:set var="total" value="2880.4638" />
        <p>Number to be formatted is <c:out value="${total}"
/></p>
        <p>Formatting number as currency with currency code:
<fmt:formatNumber type="currency" currencyCode="MYR"
value="${total}" /></p>
        <p>Formatting number to the nearest 2 integer digit:
<fmt:formatNumber type="number" maxIntegerDigits="2"
value="${total}" /></p>
```
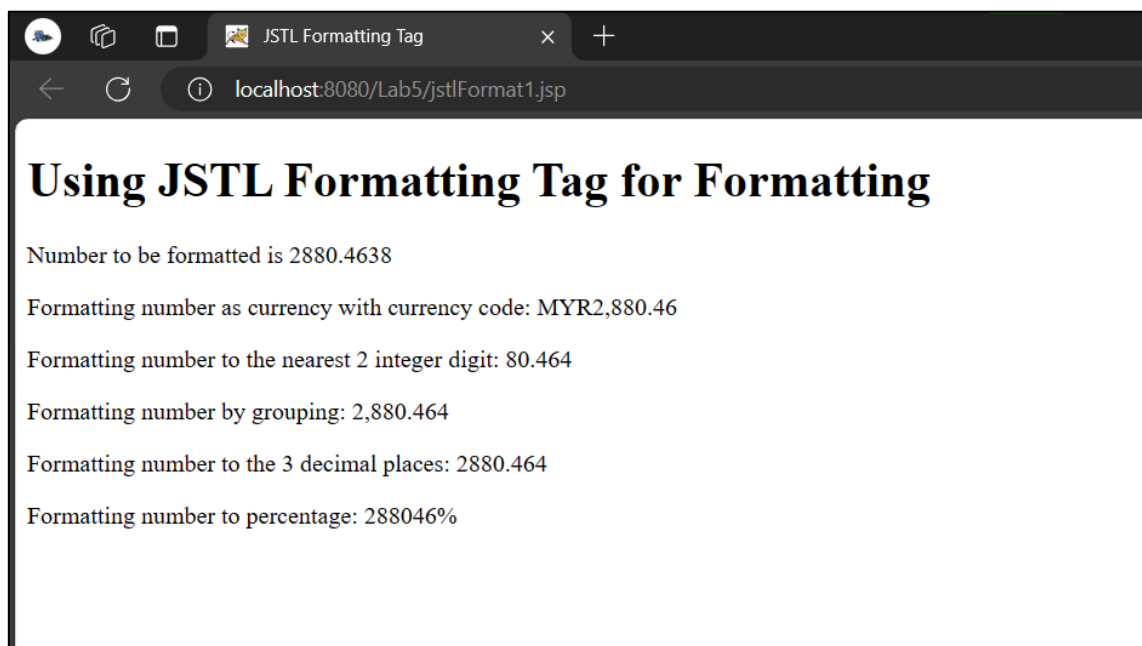
```
        <p>Formatting number by grouping: <fmt:formatNumber
type="number" groupingUsed="true" value="${total}" /></p>
        <p>Formatting number to the 3 decimal places:
<fmt:formatNumber type="number" groupingUsed="false"
maxFractionDigits="3" value="${total}" /></p>
        <p>Formatting number to percentage: <fmt:formatNumber
type="percent" groupingUsed="false" value="${total}" /></p>
    </body>
</html>
```

- Output (Task 3):

- Reflection:

  o What the purpose of using JSTL's tag library?

    The purpose of using JSTL's tag library is to provide a standardized set of tags that facilitate common tasks in JavaServer Pages (JSP) development. These tags encapsulate commonly needed functionality, reducing the need for embedded Java code (scriplets) within JSP pages. This promotes cleaner, more maintainable code by separating presentation logic from business logic.

- List FIVE(5) categories of JSTL library.
  - Core
  - Formatting
  - XML
  - SQL
  - Functions

Task 5 : Using JSP Standard Tag Library

- Objective: Using JSTL tags for parsing and formatting the dates.

- Code (Task 1):

  - fmt_formatDate.jsp

```jsp
<%--
    Document   : fmt_formatDate
    Created on : 13 May 2024, 8:12:38 pm
    Author     : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="jakarta.tags.core" %>
<%@taglib prefix="fmt" uri="jakarta.tags.fmt" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>fmt:formatDate Example</title>
    </head>
    <body>
        <h2>fmt:formatDate Examples</h2>

        <!-- a Date time string -->
        <c:set var="now" value="<%= new java.util.Date() %>" />
        <p>
            Time (fmt:formatDate type="time"):
            <strong>
                <fmt:formatDate type="time" value="${now}" />
            </strong>
        </p>
        <p>
            Date (fmt:formatDate type="date"):
            <strong>
                <fmt:formatDate type="date" value="${now}" />
            </strong>
        </p>
        <p>
            Date, Time (fmt:formatDate type="both"):
            <strong>
                <fmt:formatDate type="both" value="${now}" />
            </strong>
        </p>
        <p>
            Date, Time Short (fmt:formatDate type="both"
dateStyle="short" timeStyle="short"):
            <strong>
                <fmt:formatDate type="both" dateStyle="short"
timeStyle="short" value="${now}" />
            </strong>
        </p>
```
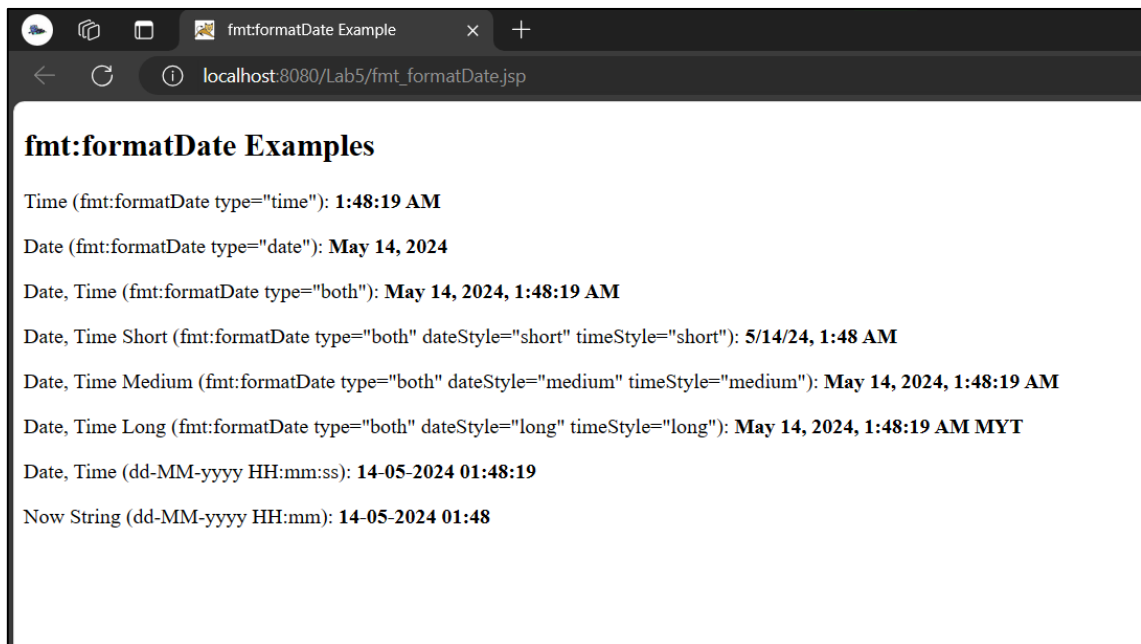
```html
        <p>
            Date, Time Medium (fmt:formatDate type="both"
dateStyle="medium" timeStyle="medium"):
            <strong>
                <fmt:formatDate type="both" dateStyle="medium"
timeStyle="medium" value="${now}" />
            </strong>
        </p>
        <p>
            Date, Time Long (fmt:formatDate type="both"
dateStyle="long" timeStyle="long"):
            <strong>
                <fmt:formatDate type="both" dateStyle="long"
timeStyle="long" value="${now}" />
            </strong>
        </p>
        <p>
            Date, Time (dd-MM-yyyy HH:mm:ss):
            <strong>
                <fmt:formatDate pattern="dd-MM-yyyy HH:mm:ss"
value="${now}" />
            </strong>
        </p>
        <!<!-- Store in variable -->
        <fmt:formatDate pattern="dd-MM-yyyy HH:mm"
value="${now}" var="nowString" />
        <p>
            Now String (dd-MM-yyyy HH:mm):
            <strong>
                <c:out value="${nowString}" />
            </strong>
        </p>
    </body>
</html>
```

- Output (Task 1):

- Code (Task 2):

  o fmt_parseDate.jsp

```
<%--
    Document    : fmt_parseDate
    Created on  : 13 May 2024, 8:31:12 pm
    Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="jakarta.tags.core" %>
<%@taglib prefix="fmt" uri="jakarta.tags.fmt" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>fmt:parseDate Examples</title>
    </head>
    <body>
        <h2>fmt:parseDate Examples</h2>

        <c:set var="dateTimeString" value="17-11-2015 11:49" />
        <h4>
            dateTimeString:
            <c:out value="${dateTimeString}" />
        </h4>
```
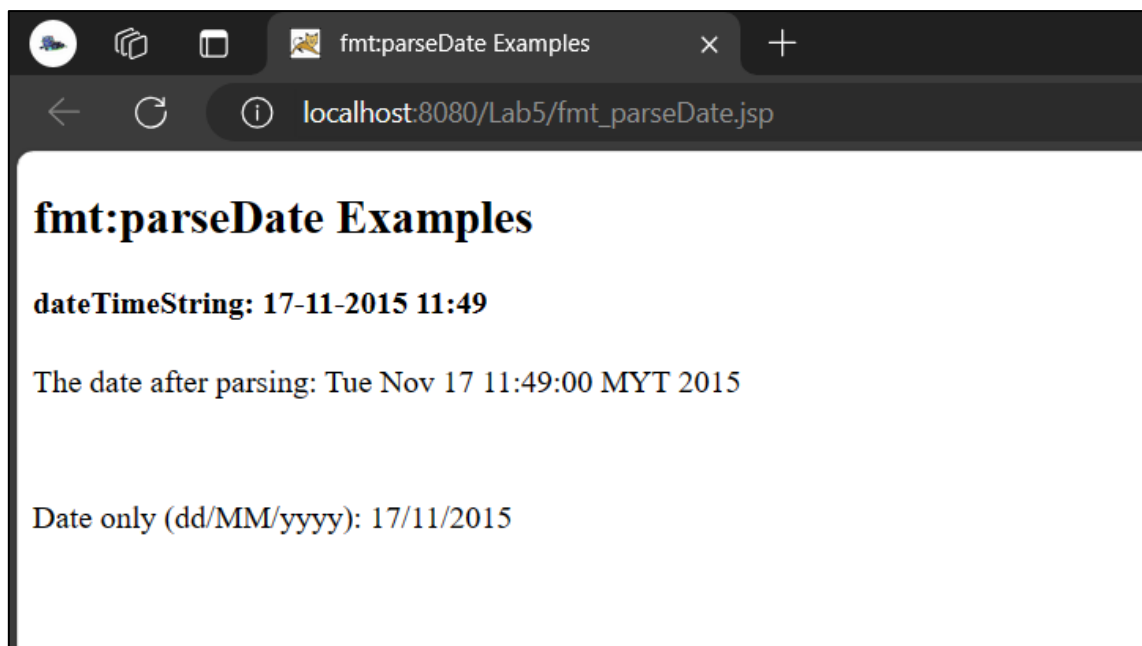
```
            <!-- Parsing a date time string, and store in a variable
type of java -->
            <fmt:parseDate value="${dateTimeString}" type="both"
var="parsedDateTime" pattern="dd-MM-yyyy HH:mm" />
            <p>
                The date after parsing:
                <c:out value="${parsedDateTime}" />
            </p>
            <br>
            <p>
                Date only (dd/MM/yyyy):
                <fmt:formatDate value="${parsedDateTime}"
pattern="dd/MM/yyyy" />
            </p>
    </body>
</html>
```

- Output (Task 2):

- Reflection:

  o What you have learnt from this exercise?

    From this exercise I have learned how to format dates, parse dates, and combine

    formatting with core tags.

Exercise 1

- Objective: Write a JSP's form that asks the user to key-in the radius of circle. The program should calculate the area of circle and the perimeter of circle. Finally, use JSTL library to format your result into 3 decimal places.

- Code:

  o circle.jsp

```
<%--
    Document    : circle
    Created on : 13 May 2024, 8:50:57 pm
    Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="jakarta.tags.core" %>
<%@taglib prefix="fmt" uri="jakarta.tags.fmt" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Find area of a circle</title>
    </head>
    <body>
        <h1>Find area of a circle</h1>

        <form>
            <table>
                <tr>
                    <td><label>Radius</label></td>
                    <td><input type="number" name="radius"
required></td>
                    <td><button
type="submit">Calculate</button></td>
                </tr>
            </table>
        </form>

        <c:if test="${param.radius != null}" >
            <c:set var="radius" value="${param.radius}" />
            <c:set var="area" value="${Math.PI * radius *
radius}" />
            <c:set var="perimeter" value="${2 * Math.PI *
radius}" />

            <p>Radius: <c:out value="${radius}" /></p>
            <p>Area: <fmt:formatNumber type="number"
groupingUsed="false" maxFractionDigits="3" value="${area}"
/></p>
```
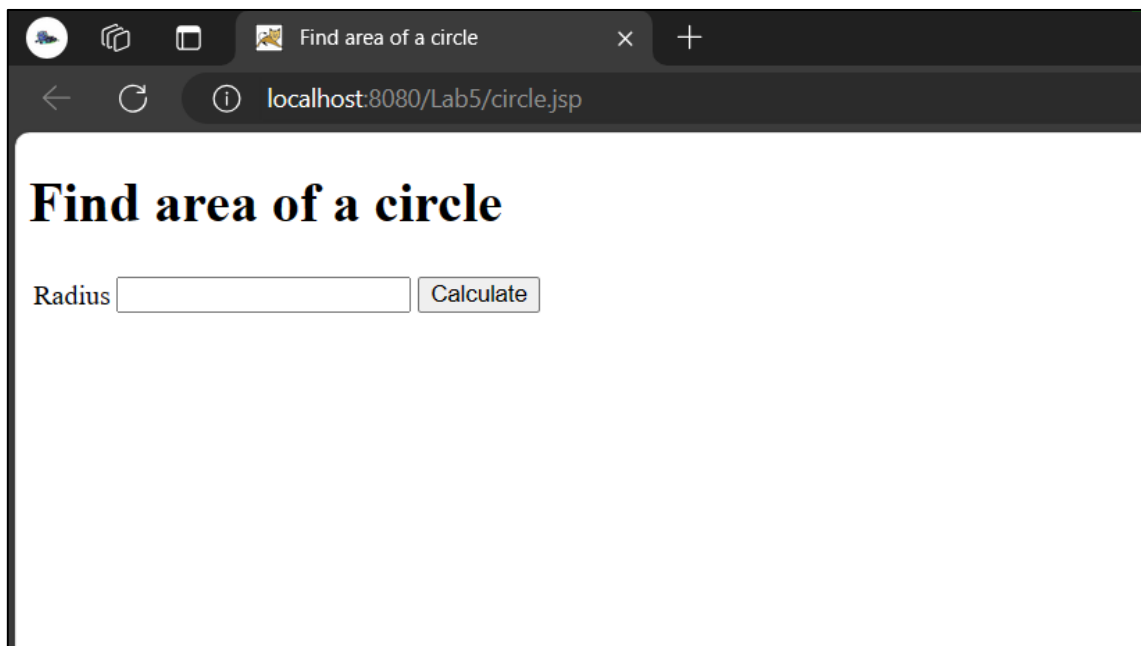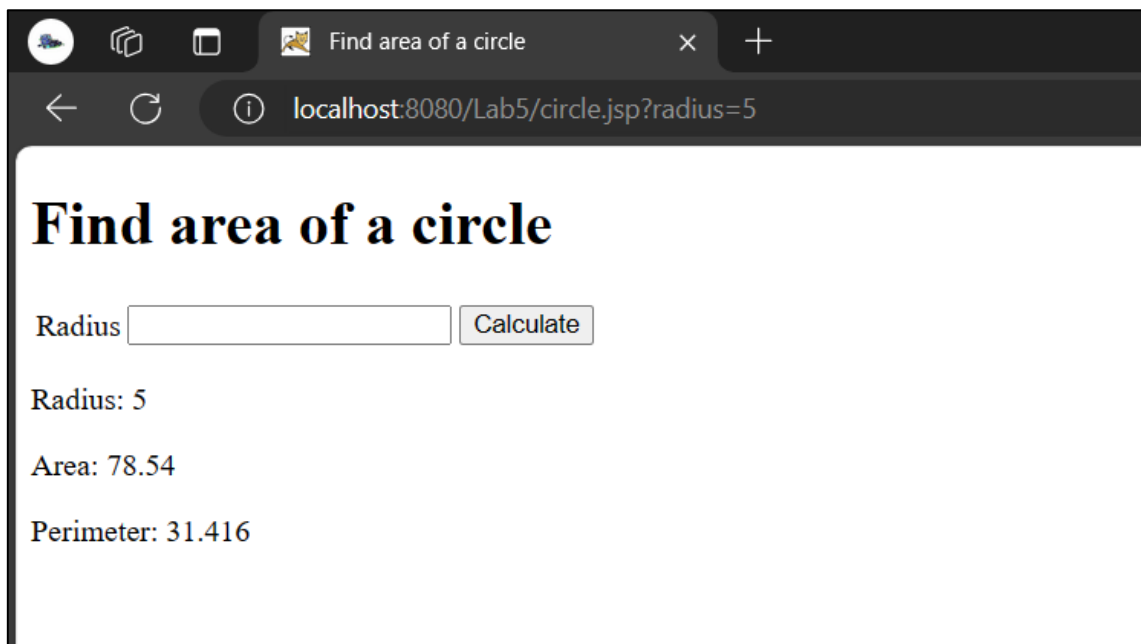
```
            <p>Perimeter: <fmt:formatNumber type="number"
groupingUsed="false" maxFractionDigits="3" value="${perimeter}"
/></p>
        </c:if>
    </body>
</html>
```

- Output:

Exercise 2

- Objective: Write a web-based program that calculates and displays the amount paid for the stock alone without the commission, the amount of the commission, the total amount paid (for the stock plus the commission).

- Code:

  - StockPurchase.java

```java
package com.mycompany.lab5;

/**
 *
 * @author Ahmad Afif Syahmi bin Ahmad Rozali
 */
public class StockPurchase {

    private int numShares;
    private double pricePerShare;
    private double commissionRate;

    public StockPurchase() {
    }

    public StockPurchase(int numShares, double pricePerShare,
double commissionRate) {
        this.numShares = numShares;
        this.pricePerShare = pricePerShare;
        this.commissionRate = commissionRate;
    }

    public int getNumShares() {
        return numShares;
    }

    public void setNumShares(int numShares) {
        this.numShares = numShares;
    }

    public double getPricePerShare() {
        return pricePerShare;
    }

    public void setPricePerShare(double pricePerShare) {
        this.pricePerShare = pricePerShare;
    }

    public double getCommissionRate() {
```

```java
            return commissionRate;
    }

    public void setCommissionRate(double commissionRate) {
        this.commissionRate = commissionRate;
    }

    public double getCommissionRateAsPercentage() {
        if (commissionRate <= 1)
            return commissionRate * 100;
        else
            return commissionRate;
    }

    public double calculateStockCost() {
        return getNumShares() * getPricePerShare();
    }

    public double calculateCommission() {
      return calculateStockCost() * getCommissionRate();
    }

    public double calculateTotalCost() {
      return calculateStockCost() + calculateCommission();
    }

}
```

o stock_purchase.html

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Stock Purchase</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    </head>
    <body>
        <h1>Stock Purchase</h1>

        <form action="stock_purchase_process.jsp">
            <table>
                <tr>
                    <td><label for="shareNum">Number of
Shares:</label></td>
                    <td><input type="number" name="shareNum"
id="shareNum" min="0" required></td>
                </tr>
                <tr>
                    <td><label for="sharePrice">Price per
Share:</label></td>
                    <td><input type="number" name="sharePrice"
id="sharePrice" min="0" step="0.01" required></td>
                </tr>
                <tr>
```

```
                    <td><label for="comRate">Commission Rate
(%):</label></td>
                    <td><input type="number" name="comRate"
id="comRate" min="0" max="100" required></td>
            </tr>
            <tr>
                <td>
                    <br>
                    <button type="submit">Calculate</button>
                </td>
            </tr>
        </table>
    </form>
</body>
</html>
```

o   stock_purchase_process.jsp

```
<%--
    Document   : stock_purchase_process
    Created on : 13 May 2024, 11:35:09 pm
    Author     : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="jakarta.tags.core" %>
<%@taglib prefix="fmt" uri="jakarta.tags.fmt" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Stock Purchase Results</title>
    </head>
    <body>
        <c:set var="shareNum" value="${param.shareNum}" />
        <c:set var="sharePrice" value="${param.sharePrice}" />
        <c:set var="comRate" value="${param.comRate}" />

        <jsp:useBean id="purchase"
class="com.mycompany.lab5.StockPurchase">
            <jsp:setProperty name="purchase"
property="numShares" value="${shareNum}" />
            <jsp:setProperty name="purchase"
property="pricePerShare" value="${sharePrice}" />
            <jsp:setProperty name="purchase"
property="commissionRate" value="${comRate / 100}" />
        </jsp:useBean>

        <h2>Stock Purchase Details</h2>
        <p>Number of Share: <c:out
value="${purchase.getNumShares()}" /></p>
        <p>Price per Share: <fmt:formatNumber type="currency"
currencySymbol="RM" groupingUsed="false" maxFractionDigits="2"
value="${purchase.getPricePerShare()}" /></p>
```
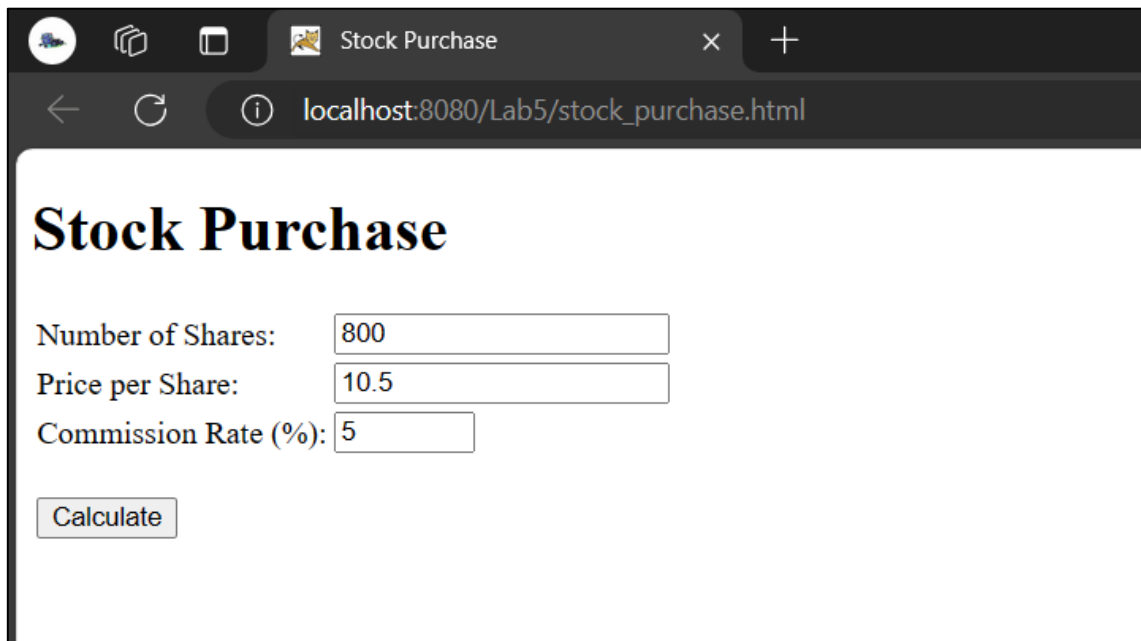
```
        <p>Commission Rate: <fmt:formatNumber type="number"
groupingUsed="false" maxFractionDigits="0"
value="${purchase.getCommissionRateAsPercentage()}" />%</p>
        <br>

        <h2>Stock Purchase Results</h2>
        <p>Stock Cost: <fmt:formatNumber type="currency"
currencySymbol="RM" groupingUsed="false" maxFractionDigits="2"
value="${purchase.calculateStockCost()}" /></p>
        <p>Commission: <fmt:formatNumber type="currency"
currencySymbol="RM" groupingUsed="false" maxFractionDigits="2"
value="${purchase.calculateCommission()}" /></p>
        <p>Total Cost: <fmt:formatNumber type="currency"
currencySymbol="RM" groupingUsed="false" maxFractionDigits="2"
value="${purchase.calculateTotalCost()}" /></p>
    </body>
</html>
```

- Output:

Stock Purchase Details

Number of Share: 800

Price per Share: RM10.50

Commission Rate: 5%

Stock Purchase Results

Stock Cost: RM8400.00

Commission: RM420.00

Total Cost: RM8820.00