



**UNIVERSITI MALAYSIA TERENGGANU**

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**CSM3023 -PEMBANGUNAN APLIKASI BERASASKAN WEB  
BANCHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING)  
WITH HONORS**

**LAB 5 – JSP:JavaBeans &JavaStandard TagLibrary  
(JSTL)**

**SEMESTER 2 2023/2024**

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**S66467**

## Task 1: Using Scriptlet to Access a Simple JavaBeans

### Message1.jsp

```
<%--  
    Document   : Message1  
    Created on : 8 May 2024, 2:43:43 pm  
    Author    : Nur Ezreena  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
  
<%@page language="java"%>  
  
<%@page info="Using JSP Standard Action to call JavaBeans"%>  
  
<%@page import="java.util.Date,lab5.com.Message"%>  
  
<!DOCTYPE html>  
  
<html>  
  
    <head>  
  
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">  
  
        <title>Using JSP Scriptlet</title>  
  
    </head>  
  
    <body>  
  
        <h1>Using JSP Scriptlet to call JavaBeans</h1>  
  
        <%  
  
            //create an object  
  
            Message objMsg = new Message();
```

```
//Assign value

objMsg.setMsg("Welcome to CSF3107 course...!");


//Display value

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


//Add date

out.println("<p>Current date is"+new java.util.Date()+"</p>");


%>

</body>

</html>
```

## Message.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 lab5.com;

/**
 *
 * @Nur Ezreena
 */
public class Message {
```

```
private String Msg;

public String getMsg() {

    return Msg;

}

public void setMsg(String Msg) {

    this.Msg = Msg;

}

}
```



## Reflection

1. What you have learnt from this exercise?  
From this exercise, I learned how to utilize JSP Standard Actions such as `<jsp:useBean>`, `<jsp:setProperty>`, and `<jsp:getProperty>` for instantiating JavaBeans, setting their properties, and retrieving values, which promotes a cleaner separation of business logic and presentation and to display the current date and time within a JSP page using Java's Date class, enhancing dynamic content generation.
2. Explain the differences when calling JavaBeans using JSP Standard Action and Java Scriptlet.

## Task 2: Using Scriplet to Access a Simple JavaBeans

### Register.java

```
package lab5.com;

/**
 *
 * @Nur Ezreena
 */
public class Register {

    private String icno;

    private String name;

    private String type;

    private int number;

    private String student;

    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 String getType() {
```

```
    return type;
```

```
}
```

```
public void setType(String type) {
```

```
    this.type = type;
```

```
}
```

```
public int getNumber() {
```

```
    return number;
```

```
}
```

```
public void setNumber(int number) {
```

```
    this.number = number;
```

```
}
```

```
public String getStudent() {
```

```
    return student;
```

```
}
```

```
public void setStudent(String student) {
```

```
    this.student = student;
```

```
}
```

```
}
```

## registerTraining.jsp

```
<%--  
  
    Document   : registerTraining  
  
    Created on : 8 May 2024, 3:12:55 pm  
  
    Author    : Nur Ezreena  
  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
<%@page language="java"%>  
<%@page info="Using JSP Standard Action to call JavaBeans"%>  
<%@page import="java.util.Date,lab5.com.Register"%>  
  
<!DOCTYPE html>  
  
<html>  
  
    <head>  
  
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">  
  
        <title>Task 2</title>  
  
        <style>  
  
            label {  
  
                display: inline-block;  
  
                margin-right: 10px;  
  
                width: 150px;  
  
            }  

```

```
</style>

</head>

<body>

    <h1>Register IT Training</h1>

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

        <fieldset>

            <legend>Training Registration</legend>

            <label for="icno">IC No </label>

            <input type="text" id="icno" name="icno" placeholder="E.g 124578-08-0564"
required>

            <br><br>

            <label for="name">Name </label>

            <input type="text" id="name" name="name" placeholder="Enter your name"
required>

            <br><br>

            <label for="type">Type of Training</label>

            <select id="type" name="type" required>

                <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>
```



```
<br><br>

<label for="number">No of Pax </label>

<input type="number" id="number" name="number" placeholder="No of Pax"
required>

<br><br>

<label for="student">Student</label>

<input type="radio" id="studentYes" name="student" value="1" required>

<label for="studentYes">Yes</label>

<input type="radio" id="studentNo" name="student" value="0" required>

<label for="studentNo">No</label>

<br><br>

<button type="submit">Submit</button>

<button type="reset">Cancel</button>

</fieldset>

</form>

<br><br>

<footer>&copy; 2024-Ezreena</footer>

</body>

</html>
```

**processTraining.jsp**

```
<%--
```

Document : processTraining

Created on : 8 May 2024, 3:53:29 pm

Author : Nur Ezreena

--%>

<%@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 Acknowledgement</title>

</head>

<body>

<h1>Training Registration Acknowledgement</h1>

<%

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

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

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

int number = Integer.parseInt(request.getParameter("number"));

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

double fee = 0.0;

// Define training fees

```
switch (type) {  
  
    case "1":  
  
        fee = 3000;  
  
        type = "C++ training";  
  
        break;  
  
    case "2":  
  
        fee = 3000;  
  
        type = "Java for beginner";  
  
        break;  
  
    case "3":  
  
        fee = 2800;  
  
        type = "HTML5";  
  
        break;  
  
    case "4":  
  
        fee = 5500;  
  
        type = "Java EEE";  
  
        break;  
  
    case "5":  
  
        fee = 3200;  
  
        type = "Android Programming";  
  
        break;  
  
    default:  
  
        out.println("Invalid training type.");  
  
        break;  
}
```

```
}
```

```
// Calculate total amount
```

```
double totalAmount = fee * number;
```

```
// Apply student discount if applicable
```

```
if (student.equals("1")) {
```

```
    totalAmount *= 0.9;
```

```
}
```

```
// Format the output amount
```

```
java.text.DecimalFormat df = new java.text.DecimalFormat("0.00");
```

```
%>
```

```
<p style="color:blue;">IC No: <%= icno %> </p>
```

```
<p style="color:blue;">Name: <%= name %> </p>
```

```
<p style="color:blue;">Type of Training: <%= type %> </p>
```

```
<p style="color:blue;">Number of Pax: <%= number %> </p>
```

```
<p style="color:blue;">Student: <%= (student.equals("1") ? "Yes" : "No") %> </p>
```

```
<p style="color:blue;"><strong>Amount Due: RM <%= df.format(totalAmount) %></strong></p>
```

```
<br><br>
```

```
<footer>&copy; 2024 - EZREENA</footer>
```

</body>

</html>

Task 2

localhost:8080/Lab5/registerTraining.jsp

### Register IT Training

Training Registration

IC No: 012819-10-5416

Name: Ezreena

Type of Training: C++ training

No of Pax: 2

Student: ☒ Yes ☐ No

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Training Registration Acknowledged

localhost:8080/Lab5/processTraining.jsp

### Training Registration Acknowledgement

IC No: 012819-10-5416

Name: Ezreena

Type of Training: C++ training

Number of Pax: 2

Student: Yes

Amount Due: RM 5400.00

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## Reflection

1. What you have learnt from this exercise?




In this exercise, I learned how to design a user input form in both HTML and JSP, how to handle and process JSP form data, how to use JavaBeans to encapsulate and manage application data, how to do calculations and conditional logic in JSP, and how to show dynamic content based on user input.

2. Describe the steps how you construct Register JavaBeans?

1. Create Class: `public class Register {`
2. Define Attributes: `private String icno;`  
`private String name;`  
`private String type;`  
`private int number;`  
`private String student;`

3. For each private attribute, create a public getter method to retrieve the value and a public setter method to set the value. These methods follow the naming convention `getAttributeName` and `setAttributeName`.

### Task 3: Installing JSTL Taglibs

 taglibs-standard-impl-1.2.5	14/5/2024 11:22 PM	Executable Jar File
 taglibs-standard-jstlel-1.2.5	14/5/2024 11:22 PM	Executable Jar File
 taglibs-standard-spec-1.2.5	14/5/2024 11:22 PM	Executable Jar File

### Task 4: Using Java Standard Tag Library (JSTL)

Task 1- Assign value “ Welcome to CSF3107–Web Programming 2 courses” and display the value inside JSP page

#### jstlCore1.jsp

```
<%--  
    Document   : jstlCore1  
    Created on : 14 May 2024, 11:36:54 pm  
    Author    : Nur Ezreena  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>  
  
<!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 !"/>

    <p> <c:out value="${message}"/> </p>

</body>

</html>

```



Task 2-Using JSTL's core to request information from one page and display the information

### **userRegistration.html**

```

<!DOCTYPE html>

<!--

Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change
this license

Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Html.html to edit this
template

-->

<html>

    <head>

        <title>TODO supply a title</title>

```

```
<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<style>

    label {

        display: inline-block;

        margin-right: 10px;

        width: 150px;

    }

</style>

</head>

<body>

    <h1>Registration</h1>

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

        <fieldset>

            <legend>User Detail</legend>

            <label for="name">Name </label>

            <input type="text" id="name" name="name" placeholder="Enter your name"
required>

            <br><br>

            <label for="surname">Surname </label>

            <input type="text" id="surname" name="surname" placeholder="Enter your
surname" required>

            <br><br>
```



```
<label for="pass">Password </label>
```

```
<input type="password" id="pass" name="pass" placeholder="Enter your  
password" required>
```

```
<br><br>
```

```
<label>Gender</label>
```

```
<input type="radio" id="male" name="gender" value="Male" required>
```

```
<label for="male">Male</label>
```

```
<input type="radio" id="female" name="gender" value="Female" required>
```

```
<label for="female">Female</label>
```

```
<br><br><!-- comment -->
```

```
<label for="type">Type of User</label>
```

```
<select id="type" name="type" required>
```

```
  <option value="Beginner">Beginner</option>
```

```
  <option value="Intermediate">Intermediate</option>
```

```
  <option value="Advanced">Advanced</option>
```

```
</select>
```

```
<br><br>
```

```
<label>Prefer Language</label>
```

```
<input type="checkbox" id="lang1" name="language" value="Malay">
```

```
<label for="lang1"> Malay</label>
```

```
<input type="checkbox" id="lang2" name="language" value="English">

<label for="lang2"> English</label>

<input type="checkbox" id="lang3" name="language" value="Mandarin">

<label for="lang3"> Mandarin</label>

<input type="checkbox" id="lang4" name="language" value="Tamil">

<label for="lang4"> Tamil</label>
```

```
<br><br>
```

```
<button type="submit">Submit</button>
```

```
<button type="reset">Cancel</button>
```

```
</fieldset>
```

```
</form>
```

```
<script>
```

```
function myFunction() {

    var x = document.getElementById("pass");

    if (x.type === "password") {

        x.type = "text";

    } else {

        x.type = "password";

    }

}
```

```
</script>
```

```
</body>
```

```
<br><br>
```

```
<footer>&copy; 2024-Ezreena</footer>
```

```
</html>
```

## processUser.jsp

```
<%--
```

```
Document : processUser
```

```
Created on : 15 May 2024, 2:41:50 pm
```

```
Author : Nur Ezreena
```

```
--%>
```

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
```

```
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
<title>Task 4</title>
```

```
</head>
```

```
<body>
```

```
<h1>Retrieve info using c:param & display it using c:out</h1>
```

```
<c:set var="Name" value="${param.name}"/>
```

```
<c:set var="Surname" value="${param.surname}"/>
```

```
<c:set var="Gender" value="${param.gender}"/>

<c:set var="userType" value="${param.type}"/>

<c:set var="userLanguage" value="${param.language}"/>
```

```
<!--c:param -->
```

```
<c:url var="processUrl" value="processUser.jsp">

    <c:param name="name" value="${Name}" />

    <c:param name="surname" value="${Surname}" />

    <c:param name="gender" value="${Gender}" />

    <c:param name="type" value="${userType}" />

    <c:param name="language" value="${userLanguage}" />

</c:url>
```

```
<p>First Name : <c:out value="${param.name}"/></p>

<p>Surname : <c:out value="${param.surname}"/></p>

<p>Gender : <c:out value="${param.gender}" /></p>

<p>Type of User : <c:out value="${param.type}"/></p>

<p>Prefer Language : <c:out value="${param.language}"/></p>
```

```
</body>
```

```
</html>
```

**Registration**

User Detail

Name

Surname

Password

Gender ☐ Male ☒ Female

Type of User

Prefer Language ☒ Malay ☐ English ☐ Mandarin ☐ Tamil

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**Retrieve info using c:param & display it using c:out**

First Name : Ezreena

Surname : Ezz

Gender : Female

Type of User : Beginner

Prefer Language : Malay

Task 3 - Using JSTL's fmt to format number and currency

### jstlFormat1.jsp

```
<%--
    Document : jstlFormat1
    Created on : 11 May 2024, 9:39:10 am
    Author : Nur Ezreena
--%>

<%@ page contentType="text/html; charset=UTF-8" %>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>

<!DOCTYPE html>

<html>
```

```

<head>

    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

    <title>jstlFormat1</title>

</head>

<body>

    <h1>Using JSTL formatting tag for formatting</h1>


    <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 digits: <fmt:formatNumber
type="number" maxIntegerDigits="2" value="\${total}"/></p>

    <p>Formatting number by grouping: <fmt:formatNumber type="number"
groupingUsed="true" value="\${total}"/></p>

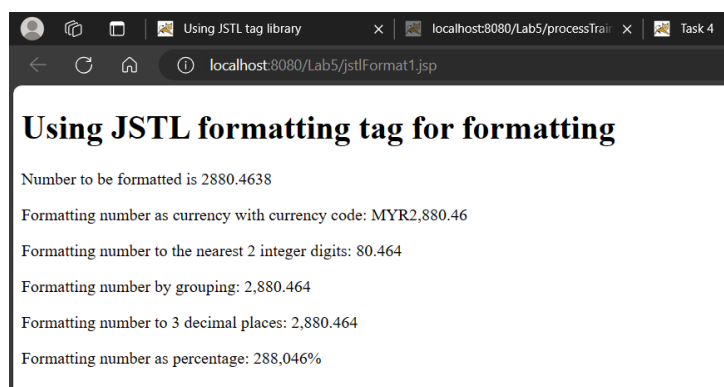
    <p>Formatting number to 3 decimal places: <fmt:formatNumber type="number"
minFractionDigits="3" maxFractionDigits="3" value="\${total}"/></p>

    <p>Formatting number as percentage: <fmt:formatNumber type="percent"
value="\${total}"/></p>

</body>

</html>

```



## Reflection

### 1. What the purpose of using JSTL's tag library?

JSTL, or JavaServer Pages Standard Tag Library, makes it easier to construct JSPs by eliminating the requirement for integrated Java code and offering pre-made tags for common tasks. This improves readability and maintainability of JSP files. Developers may execute these capabilities without writing unique Java code thanks to the tags for control flow, XML manipulation, internationalization, and other features included in JSTL.

### 2. List **FIVE(5)** categories of JSTL library.

- Core Tags : These tags provide basic functionalities such as iteration, conditionals, and variable support. Example `<c:forEach>`, `<c:if>`, and `<c:set>`
- Formatting Tags: These tags support internationalization and formatting, such as dates, numbers, and messages. Examples include `<fmt:formatDate>`, `<fmt:formatNumber>`, and `<fmt:message>`.
- SQL Tags: These tags allow for interaction with SQL databases, enabling database queries and updates directly from JSP pages. Examples include `<sql:query>`, `<sql:update>`, and `<sql:param>`
- XML Tags: These tags provide support for working with XML data, including parsing, transforming, and navigating XML documents. Examples include `<x:parse>`, `<x:transform>`, and `<x:out>`.
- Function Tags: These tags provide common functions that can be used in JSP expressions, such as string manipulation functions. Examples include functions from the `fn` namespace like `fn:contains()`, `fn:substring()`, and `fn:join()`.

## Task 5 :Using JSP Standard Tag Library

### fmt\_formatDate.jsp

```
<%--  
  
    Document   : fmt_formatDate  
  
    Created on : 15 May 2024, 4:11:57 pm  
  
    Author    : Nur Ezreena  
  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
  
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>  
  
<%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
    <title>fmt:parseDate feature</title>
```

```
  </head>
```

```
  <body>
```

```
    <h2>fmt:parseDate feature</h2>
```

```
    <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"):

    <strong>

        <fmt:formatDate type="both" dateStyle="short" timeStyle="short" value="{now}"
/>

    </strong>

</p>

<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>

<fmt:formatDate pattern="dd-MM-yyyy HH:mm:ss" value="\${now}" var="nowString"
/>

<p>

    Now String(dd-MM-yyyy HH:mm:ss):

    <strong>

        <c:out value="\${nowString}" />

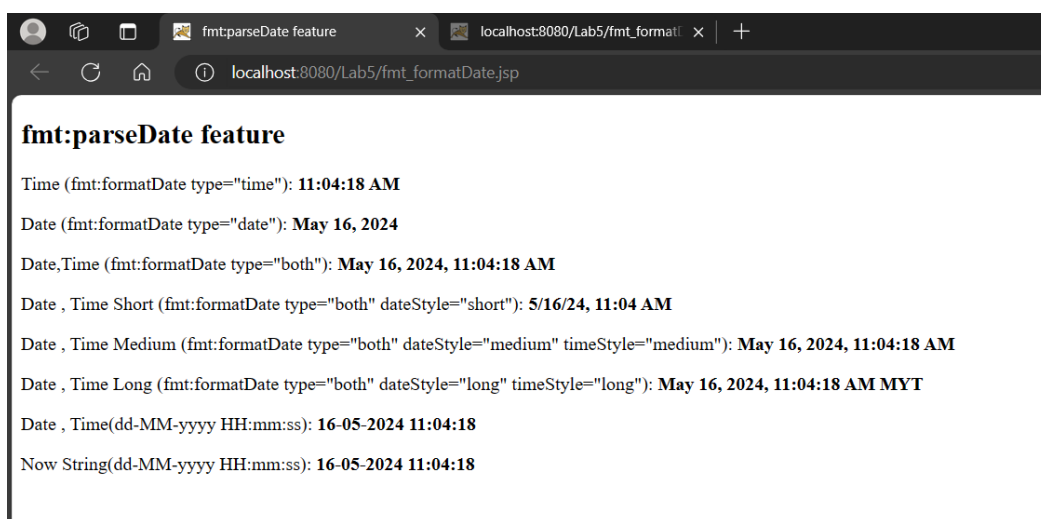
    </strong>

</p>

</body>

</html>

```



## fmt\_parseDate.jsp

```
<%--  
  
    Document   : fmt_parseDate  
  
    Created on : 15 May 2024, 4:32:30 pm  
  
    Author    : Nur Ezreena  
  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>  
<%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>  
  
<!DOCTYPE html>  
  
<html>  
  
    <head>  
  
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">  
  
        <title>fmt-parseDate</title>  
  
    </head>  
  
    <body>  
  
        <h1>fmt:parseDate Example</h1>  
  
  
        <c:set var="dateTimeString" value="15-05-2024 16:35"/>  
  
        <h4>  
  
            dateTimeString:  
  
            <c:out value="${dateTimeString}"/>  
  
        </h4>
```

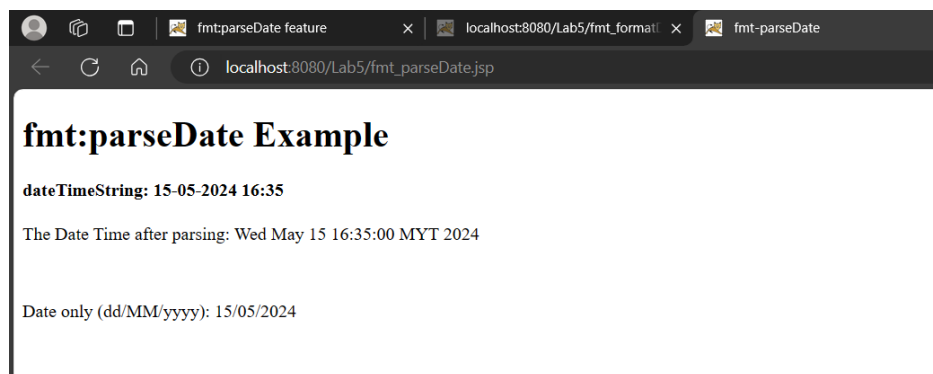
```
<fmt:parseDate value="${dateTimeString}"
               type="both" var="parsedDateTime" pattern="dd-MM-yyyy HH:mm"/>

<p>
    The Date Time 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>
```



## Reflection

### 1. What you have learnt from this exercise?

From this exercise, I have learned how to use the JavaServer Pages Standard Tag Library (JSTL) to parse and format dates within a JSP page. Specifically, I learned how to use the `` tag to set a string variable, the `` tag to convert a date string into a date object, and the `` tag to format a date object into a specific date format for display. This exercise demonstrated the power and convenience of JSTL in handling common tasks, such as date manipulation, without needing to write custom Java code, thereby making JSP pages more readable and maintainable.

## Exercise

### 1. 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.

### Circle.jsp

```
<%--  
  
    Document    : circle  
  
    Created on : 16 May 2024, 12:49:24 am  
  
    Author     : Nur Ezreena  
  
--%>  
  
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>  
  
<%@ page language="java" contentType="text/html; charset=UTF-8"  
    pageEncoding="UTF-8"%>  
  
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
    <title>Circle Calculator</title>
```

```
</head>

<body>

  <h1>Circle Calculator</h1>

  <fieldset>

    <legend>Find the radius</legend>

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

      <label for="radius">Enter the radius of the circle:</label>

      <input type="text" id="radius" name="radius" placeholder="Enter in cm" required>

      <button type="submit">Calculate</button>

    </form>

  </fieldset>

</body>

</html>
```

### calculateCircle.jsp

```
<%--

  Document   : calculateCircle

  Created on : 16 May 2024, 12:50:03 am

  Author    : Nur Ezreena

--%>

<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>

<%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>

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

    pageEncoding="UTF-8"%>
```

```
<%@ page import="java.lang.Math" %>

<!DOCTYPE html>

<html>

<head>

    <title>Circle Calculation Result</title>

</head>

<body>

    <h1>Circle Calculation Result</h1>

    <%

        String radiusStr = request.getParameter("radius");

        double radius = 0;

        boolean valid = true;

        try {

            radius = Double.parseDouble(radiusStr);

        } catch (NumberFormatException e) {

            valid = false;

        }

        if (valid) {

            double area = Math.PI * radius * radius;

            double perimeter = 2 * Math.PI * radius;
```

```
        request.setAttribute("radius", radius);

        request.setAttribute("area", area);

        request.setAttribute("perimeter", perimeter);

    } else {

        request.setAttribute("error", "Invalid radius value. Please enter a valid number.");

    }

%>

<c:choose>

    <c:when test="${not empty error}">

        <p style="color:red;">${error}</p>

        <a href="circle.jsp">Go back and enter a valid radius</a>

    </c:when>

    <c:otherwise>

        <p>Radius: <fmt:formatNumber value="${radius}" maxFractionDigits="3" /></p>

        <p>Area: <fmt:formatNumber value="${area}" maxFractionDigits="3" /></p>

        <p>Perimeter: <fmt:formatNumber value="${perimeter}" maxFractionDigits="3" /></p>

        <a href="circle.jsp">Calculate another circle</a>

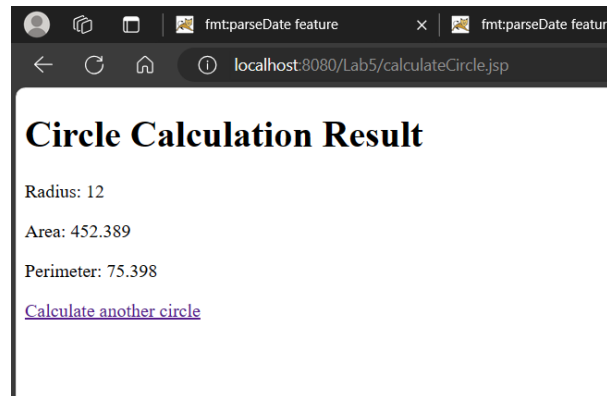
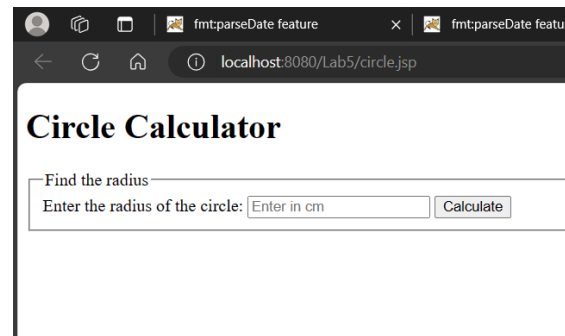
    </c:otherwise>

</c:choose>

</body>

</html>
```





2. Rahim bought 800 shares of stock at a price of RM10.50 per share. He must pay her stock broker a 5 percent commission for the transaction.

Write a web based program that calculates and displays the following:

- 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).

You should use JavaBeans to implement business logic and JSTL for display purposes.

### **stokTransaction.java**

```
package lab5.com;

/*

 * 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

 */
```

```
/**
```

```
*
```

```
* @Nur Ezreena
```

```
*/
```

```
import java.io.Serializable;
```

```
public class stockTransaction implements Serializable {
```

```
    private int numberOfShares;
```

```
    private double pricePerShare;
```

```
    private double commissionRate;
```

```
    public stockTransaction() {
```

```
    }
```

```
    public int getNumberOfShares() {
```

```
        return numberOfShares;
```

```
    }
```

```
    public void setNumberOfShares(int numberOfShares) {
```

```
        this.numberOfShares = numberOfShares;
```

```
    }
```

```
public double getPricePerShare() {  
    return pricePerShare;  
}
```

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

```
public double getCommissionRate() {  
    return commissionRate;  
}
```

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

```
public double getAmountPaidForStock() {  
    return numberOfShares * pricePerShare;  
}
```

```
public double getCommissionAmount() {  
    return getAmountPaidForStock() * commissionRate / 100;  
}
```

```
public double getTotalAmountPaid() {  
    return getAmountPaidForStock() + getCommissionAmount();  
}  
}
```

## stockForm.jsp

```
<%--
    Document    : stockForm

    Created on : 16 May 2024, 1:02:08 am

    Author     : Nur Ezreena
--%>

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

<!DOCTYPE html>

<html>

<head>

    <title>Stock Transaction Calculator</title>

    <style>

        label {

            display: inline-block;

            margin-right: 10px;

            width: 150px;

        }

    </style>

</head>
```

```
<body>

  <h1>Stock Transaction Calculator</h1>

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

    <label for="numberOfShares">Number of Shares:</label>

    <input type="text" id="numberOfShares" name="numberOfShares"
required><br><br>

    <label for="pricePerShare">Price per Share:</label>

    <input type="text" id="pricePerShare" name="pricePerShare" required><br><br>

    <label for="commissionRate">Commission Rate (%):</label>

    <input type="text" id="commissionRate" name="commissionRate" required><br><br>

    <button type="submit">Calculate</button>

  </form>

</body>

</html>
```

### **calculateStock.jsp**

```
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>

<%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>

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

<%@ page import="lab5.com.stockTransaction" %>

<!DOCTYPE html>
```

```
<html>

<head>

  <title>Stock Transaction Result</title>

</head>

<body>

  <h1>Stock Transaction Result</h1>


  <%

    String numberOfSharesStr = request.getParameter("numberOfShares");

    String pricePerShareStr = request.getParameter("pricePerShare");

    String commissionRateStr = request.getParameter("commissionRate");


    int numberOfShares = Integer.parseInt(numberOfSharesStr);

    double pricePerShare = Double.parseDouble(pricePerShareStr);

    double commissionRate = Double.parseDouble(commissionRateStr);


    stockTransaction transactions = new stockTransaction();

    transactions.setNumberOfShares(numberOfShares);

    transactions.setPricePerShare(pricePerShare);

    transactions.setCommissionRate(commissionRate);


    request.setAttribute("transaction", transactions);

  %>
```

```

<jsp:useBean id="transaction" scope="request" type="lab5.com.stockTransaction" />

<p>Amount paid for the stock alone (without commission):

    <fmt:formatNumber value="\${transaction.amountPaidForStock}" type="currency"
maxFractionDigits="2" />

</p>

<p>Commission amount:

    <fmt:formatNumber value="\${transaction.commissionAmount}" type="currency"
maxFractionDigits="2" />

</p>

<p>Total amount paid (for stock plus commission):

    <fmt:formatNumber value="\${transaction.totalAmountPaid}" type="currency"
maxFractionDigits="2" />

</p>

<a href="stockForm.jsp">Calculate another transaction</a>

</body>

</html>

```

The screenshot shows a web browser window with the address bar displaying 'localhost:8080/Lab5/stockForm.jsp'. The page title is 'Stock Transaction Calculator'. It features three input fields: 'Number of Shares' with the value '2', 'Price per Share' with the value '9.90', and 'Commission Rate (%)' with the value '5'. Below these fields is a 'Calculate' button.

The screenshot shows a web browser window with the address bar displaying 'localhost:8080/Lab5/calculateStock.jsp'. The page title is 'Stock Transaction Result'. It displays the calculated results: 'Amount paid for the stock alone (without commission): \$19.80', 'Commission amount: \$0.99', and 'Total amount paid (for stock plus commission): \$20.79'. At the bottom, there is a link labeled 'Calculate another transaction'.