



Week 5

# JSP: JavaBeans & Java Standard Tag Library (JSTL)

Web Programming 2

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

Code:

//lab5.com.Message.java

```
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package lab5.com;
6
7   /**
8    *
9    * @author User
10   */
11   public class Message {
12       private String msg;
13
14       public Message() {
15
16       }
17
18       /**
19        * @return the msg
20        */
21       public String getMsg() {
22           return msg;
23       }
24
25       /**
26        * @param msg the msg to set
27        */
28       public void setMsg(String msg) {
29           this.msg = msg;
30       }
31   }
```

//Message1.jsp

```
6
7   <%page contentType="text/html" pageEncoding="UTF-8"%>
8   <%page language="java" %>
9   <%page info="Using JSP Standard Action to call JavaBeans" %>
10  <%page import="java.util.Date, lab5.com.Message" %>
11  <DOCTYPE html>
12  <html>
13      <head>
14          <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
15          <title>Using JSP Scriptlet</title>
16          <style>
17              p{
18                  color: blueviolet
19              }
20          </style>
21      </head>
22      <body>
23          <h1>Using JSP Scriptlet to call JavaBeans</h1>
24
25          <%
26              Message objMsg = new Message();
27
28              objMsg.setMsg("Welcome to CSF3107 couese");
29
30              out.println("<p>" + objMsg.getMsg() + "</p>");
31
32              out.println("<p>Current date is " + new java.util.Date() + "</p>");
33          %>
34      </body>
```

## Outputs:

### Using JSP Scriptlet to call JavaBeans

Welcome to CSF3107 course

Current date is Wed May 15 11:23:52 MYT 2024

## Reflections:

### What have you learnt from this exercise?

How to call JavaBeans with Scriptlet, access data in java class I defined by using OOP approach (Setters Getters)

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

The main difference is that JSP Standard Actions use declarative XML-like tags to interact with JavaBeans, promoting separation of concerns, while Java Scriptlets embed Java code directly into the JSP page, leading to tighter coupling and reduced maintainability.

## Task 2: Problem Solving using JavaBeans

Code:

//lab5.com.Register.java

```
1  /*
2   * Click https://nhost/systemFileSystem/Templates/licenses/license-default.txt to change this license
3   * Click https://nhost/systemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package lab5.com;
6
7   /**
8    *
9    * @s65505 Yong
10   */
11   public class Register {
12
13       private String icNo, name, typeOfTraining, isStudent;
14       private int noOfPax;
15       private double amountDue;
16
17       public Register() {
18
19       }
20
21       /**
22        * @return the icNo
23        */
24       public String getIcNo() {
25           return icNo;
26       }
27
28       /**
29        * @param icNo the icNo to set
30        */
31       public void setIcNo(String icNo) {
32           this.icNo = icNo;
33       }
34
35       /**
36        * @return the name
37        */
38       public String getName() {
39           return name;
40       }
41
42       /**
43        * @param name the name to set
44        */
45       public void setName(String name) {
46           this.name = name;
47       }
48
49       /**
50        * @return the typeOfTraining
51        */
52       public String getTypeOfTraining() {
53           return typeOfTraining;
54       }
55
56       /**
57        * @param typeOfTraining the typeOfTraining to set
58        */
59       public void setTypeOfTraining(String typeOfTraining) {
60           this.typeOfTraining = typeOfTraining;
61       }
62
63       /**
64        * @return the noOfPax
65        */
66       public int getNoOfPax() {
67           return noOfPax;
68       }
69
70       /**
71        * @param noOfPax the noOfPax to set
72        */
73       public void setNoOfPax(int noOfPax) {
74           this.noOfPax = noOfPax;
75       }
76
77       /**
78        * @return the isStudent
79        */
80       public String getIsStudent() {
81           return isStudent;
82       }
83
84       /**
85        * @param isStudent the isStudent to set
86        */
87       public void setIsStudent(String isStudent) {
88           this.isStudent = isStudent;
89       }
90
91       /**
92        * @return the amountDue
93        */
94       public double getAmountDue() {
95           return amountDue;
96       }
97
98       /**
99        * @param amountDue the amountDue to set
100      */
101       public void setAmountDue(double amountDue) {
102           this.amountDue = amountDue;
103       }
104   }
105 }
```

## //registerTraining.jsp

```
6 <%@page contentType="text/html" pageEncoding="UTF-8"%>
7 <!DOCTYPE html>
8 <html>
9 <head>
10 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
11 <title>JSP Page</title>
12 <style>
13     input{
14         display: flex;
15         width: auto;
16     }
17
18     .label-container{
19         display: inline-flex;
20         width: 30%;
21     }
22
23     .normal-label{
24         display: inline;
25     }
26 </style>
27 </head>
28 <body>
29 <p style="font-style: italic">Hello World!</p>
30 <form action="processTraining.jsp">
31     <fieldset>
32         <legend>
33             Training Registration
34         </legend>
35         <div style="display: flex; gap: 10px; flex-direction: column">
36             <div style="display: flex">
37                 <label class="label-container" for="icNo">IC No</label>
38                 <input id="icNo" name="icNo" placeholder="E.g: 911210-05-1234"/>
39             </div>
40
41             <div style="display: flex">
42                 <label class="label-container" for="name">Name</label>
43                 <input id="name" name="name" placeholder="Enter your name" />
44             </div>
45
46             <div style="display: flex">
47                 <label class="label-container" for="trainingType">Type of Training</label>
48                 <select id="trainingType" name="trainingType">
49                     <option value="1">C++ Training</option>
50                     <option value="2">Java for Beginner</option>
51                     <option value="3">HTML5</option>
52                     <option value="4">Java JEE</option>
53                     <option value="5">Android Programming</option>
54                 </select>
55             </div>
56
57             <div style="display: flex">
58                 <label class="label-container" for="noOfPax">No of Pax</label>
59                 <input id="noOfPax" name="noOfPax" placeholder="No of Pax"/>
60             </div>
61
62             <div style="display: flex">
63                 <label class="label-container" for="studentType">Student</label>
64                 <input type="radio" id="isStudent" value="1" name="studentType" />
65                 <label for="isStudent">Yes</label>
66                 <input type="radio" id="isNotStudent" value="0" name="studentType" />
67                 <label for="isNotStudent">No</label>
68             </div>
69
70             <div>
71                 <button type="submit">Submit</button>
72                 <button type="reset">Cancel</button>
73             </div>
74         </div>
75     </fieldset>
76     <p style="margin-top: 10px">
77         &copy;2024-Yong
78     </p>
79 </form>
80 </body>
81 </html>
```

## //processTraining.jsp

```
7 <%page import="java.text.DecimalFormat"%>
8 <%page contentType="text/html" pageEncoding="UTF-8"%>
9 <%page import="lab5.com.Register" %>
10 <!DOCTYPE html>
11 <html>
12 <head>
13 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
14 <title>Training Registration</title>
15 <style>
16 {
17     color: blue;
18     font-family: Cursive;
19 }
20 </style>
21 </head>
22 <body>
23 <h1>Training Registration Acknowledgement</h1>
24
25 <%
26     DecimalFormat df = new DecimalFormat("#.00");
27     String icNo = request.getParameter("icNo");
28     String name = request.getParameter("name");
29     int intTrainingType = Integer.parseInt(request.getParameter("trainingType"));
30     int noOfPax = Integer.parseInt(request.getParameter("noOfPax"));
31     int intStudentType = Integer.parseInt(request.getParameter("studentType"));
32
33     String trainingType = "";
34     String isStudent;
35     double initialPrice = 0;
36     double amountDue;
37
38     switch (intTrainingType) {
39         case 1:
40             trainingType = "C++ Training";
41             initialPrice = 3000;
42             break;
43         case 2:
44             trainingType = "Java for Beginner";
45             initialPrice = 3000;
46             break;
47         case 3:
48             trainingType = "HTML5";
49             initialPrice = 2800;
50             break;
51         case 4:
52             trainingType = "Java EE";
53             initialPrice = 5500;
54             break;
55         case 5:
56             trainingType = "Android Programming";
57             initialPrice = 3200;
58             break;
59     }
60
61     isStudent = (intStudentType == 1) ? "Yes" : "No";
62     amountDue = (intStudentType == 1) ? initialPrice * 0.9 : initialPrice;
63 %>
64
65 <%
66     Register registerObj = new Register();
67     registerObj.setIcNo(icNo);
68     registerObj.setName(name);
69     registerObj.setTypeOfTraining(trainingType);
70     registerObj.setNoOfPax(noOfPax);
71     registerObj.setIsStudent(isStudent);
72     registerObj.setAmountDue(amountDue);
73
74     out.println("<p>IC No : " + registerObj.getIcNo() + "</p>");
75     out.println("<p>Name : " + registerObj.getName() + "</p>");
76     out.println("<p>Type Of Training : " + registerObj.getTypeOfTraining() + "</p>");
77     out.println("<p>Number of Pax : " + registerObj.getNoOfPax() + " person/s</p>");
78     out.println("<p>Student : " + registerObj.getIsStudent() + "</p>");
79     out.println("<p>Amount Due : RM " + df.format(registerObj.getAmountDue()) + "</p>");
80
81     out.println("<span> <copy>2024-Yong </span>");
82 %>
83 </body>
84 </html>
```

## Outputs:

### *Training IT Registration*

Training Registration	
IC No	<input type="text" value="910710-11-2416"/>
Name	<input type="text" value="Mohamad Nor Hassan"/>
Type of Training	<input type="text" value="Java EEE"/> ▼
No of Pax	<input type="text" value="1"/>
Student	<input checked="" type="radio"/> Yes <input type="radio"/> No
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	

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### **Training Registration Acknowledgement**

IC No : 910710-11-2416

Name : Mohamad Nor Hassan

Type Of Training : Java EEE

Number pf Pax : 1 person/s

Student : Yes

Amount Due : RM 4950.00

©2024-Yong

## Reflections:

### What have you learned from this exercise?

How to call JavaBeans with Scriptlet, access data in java class I defined by using OOP approach (Setters Getters)

### Describe the steps how you construct Register JavaBeans?

1. Make a constructor with no params
2. Declare variables like icNo, name, trainingType, noOfPax, isStudent and amountDue
3. Declare the setter and getter methods for those variables

## Task 3: Installing JSTL Taglibs

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

Code:

//userRegistration.html

```
1 <!DOCTYPE html>
2 <!--
3 Click nbfs://nbhost/SystemFileSystem/Templates/licenses/license-default.txt to change this license
4 Click nbfs://nbhost/SystemFileSystem/Templates/JSP\_Servlet/Html.html to edit this template
5 -->
6 <html>
7   <head>
8     <title>Using JSTL</title>
9     <meta charset="UTF-8">
10    <meta name="viewport" content="width=device-width, initial-scale=1.0">
11    <style>
12      input{
13        display: flex;
14        width: auto;
15      }
16
17      .label-container{
18        display: inline-flex;
19        width: 200px;
20      }
21
22      .normal-label{
23        display: inline;
24      }
25    </style>
26  </head>
27  <body>
28    <form action="processUser.jsp" method="post">
29      <fieldset style="display: flex; width: 600px">
30        <legend>
31          Training Registration
32        </legend>
33        <div style="display: flex; gap: 10px; flex-direction: column">
34          <div style="display: flex">
35            <label class="label-container" for="name">Name</label>
36            <input id="name" name="name" style="width: 500px" placeholder="Enter first name"/>
37          </div>
38
39          <div style="display: flex">
40            <label class="label-container" for="surname">Surname</label>
41            <input id="surname" name="surname" style="width: 500px" placeholder="Enter surname" />
42          </div>
43
44          <div style="display: flex">
45            <label class="label-container" for="password">Password</label>
46            <input id="password" name="password" placeholder="Max 10 characters" type="password" />
47          </div>
48
49          <div style="display: flex">
50            <label class="label-container">Gender</label>
51            <label for="male">Male</label>
52            <input type="radio" id="male" value="Male" name="gender" />
53            <label for="female">Female</label>
54            <input type="radio" id="female" value="Female" name="gender" />
55          </div>
56
57          <div style="display: flex">
58            <label class="label-container" for="userType">Type of User</label>
59            <select id="userType" name="userType">
60              <option value="Beginner">Beginner</option>
61              <option value="Advanced">Advanced</option>
62            </select>
63          </div>
64
65          <div style="display: flex">
66            <label class="label-container">Prefer Language</label>
67            <input type="checkbox" id="malay" value="Malay" name="preferLang" />
68            <label for="malay">Malay</label>
69            <input type="checkbox" id="english" value="English" name="preferLang" />
70            <label for="english">English</label>
71            <input type="checkbox" id="mandarin" value="Madarin" name="preferLang" />
72            <label for="mandarin">Mandarin</label>
73            <input type="checkbox" id="tamil" value="Tamil" name="preferLang" />
74            <label for="tamil">Tamil</label>
75          </div>
76
77          <div>
78            <button type="submit">Submit</button>
79            <button type="reset">Cancel</button>
80          </div>
81        </div>
82      </fieldset>
83      <p style="margin-top: 10px">
84        &copy;2024-Yong
85      </p>
86    </form>
87  </body>
88 </html>
```



## //processUser.jsp

```
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
9 <!DOCTYPE html>
10 <html>
11 <head>
12 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
13 <title>JSTL Core Tag</title>
14 <style>
15 {
16     color: magenta;
17 }
18 </style>
19 </head>
20 <body>
21 <c:url var="myURL" value="/userRegistration.html" scope="request" >
22 <c:param name="name" />
23 <c:param name="surname" />
24 <c:param name="password" />
25 <c:param name="gender" />
26 <c:param name="userType" />
27 <c:param name="preferLang" />
28 </c:url>
29
30 <h1>Retrieve info using c:param & display it using c:out</h1>
31 <p>First Name : <c:out value="${param.name}" /></p>
32 <p>Surname : <c:out value="${param.surname}" /></p>
33 <p>Gender : <c:out value="${param.gender}" /></p>
34 <p>Type of User : <c:out value="${param.userType}" /></p>
35 <c:forEach var="language" items="${paramValues.preferLang}">
36 <p>Prefer Language : <c:out value="${language}" /></p>
37 </c:forEach>
38 </body>
39 </html>
```

## //jstlFormat1.jsp

```
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
9 <%@taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>
10 <!DOCTYPE html>
11 <html>
12 <head>
13 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
14 <title>JSTL fmt tag</title>
15 <style>
16 {
17     color: crimson;
18 }
19 </style>
20 </head>
21 <body>
22 <h1>Using JSTL tag for formatting</h1>
23
24 <c:set var="total" value="2880.4638" />
25 <p>Number to be formatted is <c:out value="${total}" /></p>
26 <p>Formatting number as currency with currency code : <fmt:formatNumber type="currency" currencyCode="MYR" value="${total}" /></p>
27 <p>Formatting number to the nearest 2 integer digit : <fmt:formatNumber type="number" maxIntegerDigits="2" value="${total}" /></p>
28 <p>Formatting number by grouping : <fmt:formatNumber type="number" groupingUsed="true" value="${total}" /></p>
29 <p>Formatting number by 3 decimal places : <fmt:formatNumber maxFractionDigits="3" value="${total}" /></p>
30 <p>Formatting number by % : <fmt:formatNumber value="${total}" type="percent" /> </p>
31 </body>
32 </html>
```

## Outputs:

**Use JSTL's features**

Welcome to CSF3107 - Web Programming courses..!

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---

Training Registration	
Name	<input type="text" value="Chun Hao"/>
Surname	<input type="text" value="Yong"/>
Password	<input type="password" value="***"/>
Gender	Male <input checked="" type="radio"/> Female <input type="radio"/>
Type of User	<input type="text" value="Advanced"/>
Prefer Language	<input type="checkbox"/> Malay <input type="checkbox"/> English <input checked="" type="checkbox"/> Mandarin <input type="checkbox"/> Tamil
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	

## Using JSTL tag for formatting

Number to be formatted is 2880.4638

Formatting number as currency with currency code : MYR2,880.46

Formatting number to the nearest 2 integer digit : 80.464

Formatting number by grouping : 2,880.464

Formatting number by 3 decimal places : 2,880.464

Formatting number by % : 288,046%

## Reflection

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

To simplify JSP development by providing reusable tags for common tasks like iteration, conditional logic, and internationalization, promoting cleaner and more maintainable code.

List FIVE(5) categories of JSTL library

1. Core tags
2. Formatting tags
3. XML tags
4. SQL tags
5. Function tags

# Task 5: Using JSP Standard Tag Library

Code:

//fmt\_formatDate.jsp

```
6
7
8
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51
52
53
54
55
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58
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60
61
62
63
64
65
66
67
68
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73
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76
77
78

<%@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:formatDate feature</title>
  </head>
  <body>
    <h1>fmt:formatDate example</h1>
    <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>
      Time (fmt:formatDate type="date"):
      <strong>
        <fmt:formatDate type="date" value="{now}" />
      </strong>
    </p>

    <p>
      Date, Time Long (fmt:formatDate type="both"):
      <strong>
        <fmt:formatDate type="both" value="{now}" />
      </strong>
    </p>

    <p>
      Date, Time Long (fmt:formatDate type="both" dateStyle="short" timeStyle="short"):
      <strong>
        <fmt:formatDate type="both" dateStyle="short" timeStyle="short" value="{now}" />
      </strong>
    </p>

    <p>
      Date, Time Long (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>

    <p>
      <fmt:formatDate pattern="dd-MM-yyyy HH:mm:ss" value="{now}" var="nowString" />
      Now String (dd-MM-yyyy HH:mm:ss) :
      <strong>
        <c:out value="{nowString}" />
      </strong>
    </p>
  </body>
</html>
```

## //fmt\_parseDate.jsp

```
6
7 <%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
8 <%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>
9 <%@page contentType="text/html" pageEncoding="UTF-8"%>
10 <!DOCTYPE html>
11 <html>
12 <head>
13 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
14 <title>fmt:parseDate feature</title>
15 </head>
16 <body>
17 <h1>fmt:parseDate example</h1>
18
19 <c:set var="dateTimeString" value="17-11-2015 11:49" />
20
21 <h4>
22     dateTimeString:
23     <c:out value="${dateTimeString}" />
24 </h4>
25
26 <fmt:parseDate value="${dateTimeString}" type="both" var="parsedDateTime" pattern="dd-MM-yyyy HH:mm" />
27
28 <p>
29     The date time after parsing:
30     <c:out value="${parsedDateTime}" />
31 </p>
32 <br />
33 <p>
34     Date only (dd/Mm/yyyy) :
35     <fmt:formatDate value="${parsedDateTime}" pattern="dd/MM/yyyy" />
36 </p>
37 </body>
38 </html>
```

## Outputs:

### fmt:formatDate example

Time (fmt:formatDate type="time"): 9:08:48 AM

Time (fmt:formatDate type="date"): May 16, 2024

Date, Time Long (fmt:formatDate type="both"): May 16, 2024, 9:08:48 AM

Date, Time Long (fmt:formatDate type="both" dateStyle="short" timeStyle="short"): 5/16/24, 9:08 AM

Date, Time Long (fmt:formatDate type="both" dateStyle="medium" timeStyle="medium"): May 16, 2024, 9:08:48 AM

Date, Time Long (fmt:formatDate type="both" dateStyle="long" timeStyle="long"): May 16, 2024, 9:08:48 AM MYT

Date, Time (dd-MM-yyyy HH:mm:ss): 16-05-2024 09:08:48

Now String (Dd-MM-yyyy HH:mm:ss) : 16-05-2024 09:08:48

## **fmt:parseDate example**

**dateTimeString:** 17-11-2015 11:49

The date time after parsing: Tue Nov 17 11:49:00 MYT 2015

Date only(dd/Mm/yyyy): 17/11/2015

---

## Reflections:

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

how to use `fmt:formaatDate` and `fmt:parseDate` features

# Exercise 1

## Code:

### //circleAreaCalculator.jsp

```
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10 <head>
11 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12 <title>Circle Area Calculator</title>
13 </head>
14 <body>
15 <h1>Circle Area & Parameter Calculator</h1>
16 <form action="processCircleArea.jsp">
17 <fieldset>
18 <div style="margin-bottom: 2rem">
19 <label for="radius">
20 Radius :
21 </label>
22 <input name="radius" id="radius" type="number" placeholder="Enter the radius in m" />
23 </div>
24 <button type="submit">Submit</button>
25 <button type="reset">Cancel</button>
26 </fieldset>
27 </form>
28 </body>
29 </html>
```

### //processCircleArea.jsp

```
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <%taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
9 <%taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>
10 <!DOCTYPE html>
11 <html>
12 <head>
13 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
14 <title>Circle Area & Parameter Calculator</title>
15 </head>
16 <body>
17 <h1>Circle Area & Parameter Calculator</h1>
18
19 <c:url var="myURL" value="/circleAreaCalculator.jsp" scope="request">
20 <c:param name="radius" />
21 </c:url>
22
23 <c:set var="circleArea" value="${Math.pow(param.radius,2) * Math.PI}" />
24 <c:set var="circleParameter" value="${2 * Math.PI * param.radius}" />
25
26 <p>Radius of the circle : <span style="font-weight: bold"><fmt:formatNumber maxFractionDigits="2" value="${param.radius}" />m</span></p>
27 <p>Area of the circle : <span style="font-weight: bold"><fmt:formatNumber maxFractionDigits="2" value="${circleArea}" />m</span></p>
28 <p>Parameter of the circle : <span style="font-weight: bold"><fmt:formatNumber maxFractionDigits="2" value="${circleParameter}" />m</span></p>
29 </body>
30 </html>
```

# Outputs:

## Circle Area & Parameter Calculator

Radius :

Submit

Cancel

---

## Circle Area & Parameter Calculator

Radius of the circle : **5m**  
Area of the circle : **78.54m**  
Parameter of the circle : **31.42m**

---



## Exercise 2

### Code:

#### //Stock.java

```
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package lab5.com;
6
7   public class Stock {
8       private int shareAmount;
9       private double price;
10      private double commission;
11
12      public Stock() {
13          // Default constructor
14      }
15
16      // Getter and setter methods
17
18      public int getShareAmount() {
19          return shareAmount;
20      }
21
22      public void setShareAmount(int shareAmount) {
23          this.shareAmount = shareAmount;
24      }
25
26      public double getPrice() {
27          return price;
28      }
29
30      public void setPrice(double price) {
31          this.price = price;
32      }
33
34      public double getCommission() {
35          return commission;
36      }
37
38      public void setCommission(double commission) {
39          this.commission = commission;
40      }
41
42      // Method to calculate the amount paid for the stock alone (without commission)
43      public double calculateStockAmount() {
44          return shareAmount * price;
45      }
46
47      // Method to calculate the commission amount
48      public double calculateCommissionAmount() {
49          return calculateStockAmount() * commission;
50      }
51
52      // Method to calculate the total amount paid (for the stock plus the commission)
53      public double calculateTotalAmount() {
54          return calculateStockAmount() + calculateCommissionAmount();
55      }
56  }
```

#### //processStock.jsp

```
6
7  <%@ page language="java" contentType="text/html; charset=UTF-8"
8     pageEncoding="UTF-8"%>
9  <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
10 <%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>
11 <!DOCTYPE html>
12 <html>
13 <head>
14 <meta charset="UTF-8">
15 <title>Stock Transaction Details</title>
16 </head>
17 <body>
18 <h1>Stock Transaction Details</h1>
19
20 <jsp:useBean id="stock" class="lab5.com.Stock" scope="request" />
21
22 <c:set target="${stock}" property="shareAmount" value="800" />
23 <c:set target="${stock}" property="price" value="10.5" />
24 <c:set target="${stock}" property="commission" value="0.05" />
25
26 <p>Amount paid for the stock alone (without commission):
27 <fmt:formatNumber type="currency" currencyCode="MYR" value="${stock.calculateStockAmount()}" />
28 </p>
29 <p>Amount of commission:
30 <fmt:formatNumber type="currency" currencyCode="MYR" value="${stock.calculateCommissionAmount()}" />
31 </p>
32 <p>Total amount paid (for the stock plus commission):
33 <fmt:formatNumber type="currency" currencyCode="MYR" value="${stock.calculateTotalAmount()}" />
34 </p>
35 </body>
36 </html>
```

# Outputs:

## Stock Transaction Details

Amount paid for the stock alone (without commission): MYR8,400.00

Amount of commission: MYR420.00

Total amount paid (for the stock plus commission): MYR8,820.00

---