

Dt : 24/2/2025

CustomerBean.java

```
package test;
import java.io.*;
@SuppressWarnings("serial")
public class CustomerBean implements Serializable{
    private int id;
    private String name,city,mId;
    private Long phNo;
    public CustomerBean() {}
    public int getId() {
        return id;
    }
    public void setId(int id) {
        this.id = id;
    }
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getCity() {
        return city;
    }
    public void setCity(String city) {
        this.city = city;
    }
    public String getmId() {
        return mId;
    }
    public void setmId(String mId) {
        this.mId = mId;
    }
    public Long getPhNo() {
        return phNo;
    }
    public void setPhNo(Long phNo) {
        this.phNo = phNo;
    }
}
```

ViewCustomersDAO.java

```
package test;
```

```
import java.sql.*;

import java.util.*;

public class ViewCustomersDAO {

    public ArrayList<CustomerBean> al = new ArrayList<CustomerBean>();

    public ArrayList<CustomerBean> retrieve(){

        try {

            Connection con = DBConnection.getCon();

            PreparedStatement ps = con.prepareStatement

                ("select * from Customer70");

            ResultSet rs = ps.executeQuery();

            while(rs.next()) {

                CustomerBean cb = new CustomerBean();

                cb.setId(rs.getInt(1));

                cb.setName(rs.getString(2));

                cb.setCity(rs.getString(3));

                cb.setmId(rs.getString(4));

                cb.setPhNo(rs.getLong(5));

                al.add(cb);

            } //end of loop

        } catch (Exception e) {

            e.printStackTrace();

        }

        return al;

    }

}
```

***ViewCustomersServlet.java***

***package test;***

***import java.io.\*;***

***import java.util.\*;***

***import jakarta.servlet.\*;***

***import jakarta.servlet.http.\*;***

***import jakarta.servlet.annotation.\*;***

***@SuppressWarnings("serial")***

***@WebServlet("/cview")***

***public class ViewCustomersServlet extends HttpServlet***

***{***

***@Override***

***protected void doGet(HttpServletRequest req, HttpServletResponse res) throws***

***ServletException, IOException***

***{***

***Cookie c[] = req.getCookies();***

***if(c==null) {***

***req.setAttribute("msg", "Session Expired...<br>");***

***req.getRequestDispatcher("Msg.jsp").forward(req, res);***

***}else {***

***String fN = c[0].getValue();***

***req.setAttribute("fname", fN);***

***ArrayList<CustomerBean> al = new ViewCustomersDAO().retrieve();***

***req.setAttribute("alist", al);***

***req.getRequestDispatcher("ViewCustomers.jsp").forward(req, res);***

}  
}

### *ViewCustomers.jsp*

```
<%@ page Language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"
    import="test.*,java.util.*"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String fN = (String)request.getAttribute("fname");
ArrayList<CustomerBean> al =
(ArrayList<CustomerBean>)request.getAttribute("aList");
out.println("Page belongs to : "+fN+"<br>");
if(al.size()==0){
    out.println("No Customers available...<br>");
}else{
    Iterator<CustomerBean> it = al.iterator();
    while(it.hasNext()){
        CustomerBean cb = (CustomerBean)it.next();
        out.println(cb.getId()+"&nbsp;&nbsp;&nbsp;"
            +cb.getName()+"&nbsp;&nbsp;&nbsp;"
            +cb.getCity()+"&nbsp;&nbsp;&nbsp;"
            +cb.getMId()+"&nbsp;&nbsp;&nbsp;"
            +cb.getPhNo()+"<br>");
    }
}
%>
<a href="Logout">Logout</a>
</body>
</html>
```

### *LogoutServlet.java*

```
package test;  
  
import java.io.*;
```

```
import jakarta.servlet.*;

import jakarta.servlet.http.*;

import jakarta.servlet.annotation.*;

@SuppressWarnings("serial")

@WebServlet("/logout")

public class LogoutServlet extends HttpServlet

{

    @Override

    protected void doGet(HttpServletRequest req, HttpServletResponse res) throws

        ServletException, IOException

    {

        Cookie c[] = req.getCookies();

        if(c==null) {

            req.setAttribute("msg", "Session Expired...<br>");

            req.getRequestDispatcher("Msg.jsp").forward(req, res);

        }else {

            c[0].setMaxAge(0);

            res.addCookie(c[0]);

            req.setAttribute("msg", "User Logged Out Successfully...<br>");

            req.getRequestDispatcher("Logout.jsp").forward(req, res);

        }

    }

}
```

**Logout.jsp**

```

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String msg = (String)request.getAttribute("msg");
out.println(msg);
%>
<%@include file="Login.html" %>
</body>
</html>

```

#### **Msg.jsp**

```

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String msg = (String)request.getAttribute("msg");
out.println(msg);
%>
<%@include file="Login.html" %>
</body>
</html>

```

---

**Dt : 25/2/2025**

**faq:**

**wt is the diff b/w**

**(i)HttpSession**

**(ii)Cookie**

**(i) HttpSession:**

=>'HttpSession' is an interface from jakarta.servlet.http package and which is instantiated to track the user in Session tracking process.

=>'HttpSession' is server dependent, because which is created and available in server until it is invalidated.

**(ii) Cookie:**

=>'Cookie' is a class from jakarta.servlet.http package and which is instantiated to track the user in session tracking process.

=>'Cookie' is client dependent, because which is created by the server, but stored in WebBrowser to track the user.

---

**faq:**

**wt is the diff b/w**

**(i) addCookie()**

**(ii) get\_cookies()**

=>addCookie()-method will perform Serialization process and Cookie-stream to response.

=>get\_cookies()-method will count the number of cookies from the request object and create array of size equal to the count of cookies.

**(This get\_cookies()-method internally perform DeSerialization)**

---

**\*imp**

**Web Application Architectures:**

=>According to realtime, Web Application Architectures are categorized into two types:

## **1.Model-1 Architecture**

## **2.Model-2 Architecture**

### **1.Model-1 Architecture:**

**=>In Model-1 Architecture JSP is the controller of application,which means JSP will take the request and provide the response,in this process it controls Beans,DAOs and JCFs.**

**Diagram:**

### **2.Model-2 Architecture:**

**=>Model-2 Architecture introduced to overcome the dis-advantages of Model-1 Architecture.**

**=>Model-2 Architecture is based on MVC Architecture.**

**M - Model**

**V - View**

**C - Controller**

**M - Model:**

**=>Model layer represents beans,where enterprise-data is available.**

**=>This Model layer also includes DAOs,JCfs and services.**

**V - View :**

**=>View represents JSP and which is presentation of Web-Application.**

**C - Controller:**

**=>Controller represents 'Servlet' and which controls all the layers in the application.**



**Diagram:**

=====

**\*imp**

**JSP Programming:**

**=>We use the following JSP tags to construct JSP programs:**

**1.Scripting tags**

**2.Directive tags**

**3.Action tags.**

**1.Scripting tags:**

**=>Scripting tags are used to write normal Java Code in jsp programs.**

**=>Types:**

**(a)Scriptlet tag**

**(b)Expression tag**

**(c)Declarative tag**

**(a)Scriptlet tag:**

**=>Scriptlet tag is used to write normal ServletCode or JavaCode in JSP programs**

**syntax:**

**<%**

**-----ServletCode/JavaCode-----**

**%>**

**(b)Expression tag:**

**=>Expression tag is used to assign the value to variable or used to send the data to**

*WebBrowser directly.*

**syntax:**

**<%=**

**-----value/Expression----**

**%>**

**(c)Declarative tag:**

**=>Declarative tag is used to declare variables and methods in JSP programs**

**syntrax:**

**<%!**

**-----Variables;methods-----**

**%>**

**2.Directive tags:**

**=>Directive tags will specify the information about current running JSP page(Program)**

**=>Types:**

**(a)@page**

**(b)@include**

**(c)@taglib**

**(a)@page:**

**=>'@page' tag will give information about the Current JSP page.**

**syntax:**

**<%@ page language="java" contentType="text/html; charset=ISO-8859-1"**

**pageEncoding="ISO-8859-1"**

```
import="test.*,java.util.*"%>
```

**(b)@include:**

=>'@include' tag is used to include the file in JSP-response

**syntax:**

```
<%@include file="home.html" %>
```

**(c)@taglib:**

=>'@taglib' tag is used to link external libraries to current JSP page

**syntax:**

```
<%@taglib .....%>
```

Dt : 26/2/2025

Ex:(Demonstrating Declarative tag)

**Diagram:**

**input.html**

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="Calculate.jsp" method="post">
Enter the Value:<input type="text" name="v"><br>
<input type="submit" value="Factorial">
</form>
</body>
</html>
```

**web.xml**

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<web-app>
  <welcome-file-list>
    <welcome-file>input.html</welcome-file>
  </welcome-file-list>
</web-app>
```

### Calculate.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"
    errorPage="Error.jsp"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%!
int fact;
int factorial(int n)
{
    fact=1;
    for(int i=n;i>=1;i--)
    {
        fact = fact*i;
    }
    return fact;
}
%>
<%
int v = Integer.parseInt(request.getParameter("v"));
int res = factorial(v);
out.println("Factorial = "+res+"<br>");
%>
<%@include file="input.html" %>
</body>
</html>
```

### Error.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
```

```

        pageEncoding="ISO-8859-1"
        isErrorPage="true"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
out.println("Enter only Integer value....<br>");
%>
<%= exception %>
<br>
<%@include file="input.html" %>
</body>
</html>

```

---

**\*imp**

**=>The following are the implicit objects of JSP:**

- 1.application** - *jakarta.servlet.ServletContext*
- 2.config** - *jakarta.servlet.ServletConfig*
- 3.request** - *jakarta.servlet.http.HttpServletRequest*
- 4.response** - *jakarta.servlet.http.HttpServletResponse*
- 5.out** - *jakarta.servlet.jsp.JspWriter(AbstractClass)*
- 6.session** - *jakarta.servlet.http.HttpSession*
- 7.exception** - *java.lang.Exception*
- 8.page** - *java.lang.Object*
- 9.pageContext** - *jakarta.servlet.jsp.PageContext(AbstractClass)*

---

**faq:**

**define 'page' implicit Object of JSP?**

**=>'page' is an implicit object of java.lang.Object class.**

=>'page' is used when we want to perform Thread-Communications and Cloning process in JSP.

faq:

define 'pageContext' implicit Object of JSP?

=>'pageContext' is an implicit Object generated from 'PageContext' AbstractClass

=>Using 'pageContext' Object we can access all other JSP Objects directly

=====

### 3.Action tags.:

=>Action tags will specify the actions performed while JSP Program execution.

=>Types:

(a)<jsp:forward>

(b)<jsp:include>

(c)<jsp:param>

(d)<jsp:useBean>

(e)<jsp:setProperty>

(f)<jsp:getProperty>

-----

(a)<jsp:forward>:

=><jsp:forward> tag is used to perform forward communication in JSP pages.

syntax:

<jsp:forward page="JSP-File"/>

(b)<jsp:include>:

=><jsp:include> tag is used to perform include communication in JSP pages.

**syntax:**

```
<jsp:include page="JSP-File"/>
```

**(c)<jsp:param> :**

*=><jsp:param> is the subtag of <jsp:forward> and which is used to send para-value from one JSP page to another JSP page.*

**syntax:**

```
<jsp:forward page="JSP-File">
```

```
  <jsp:param value="<%=1000 %>" name="y"/>
```

```
</jsp:forward>
```

**Ex:(Demonstrating JSP Communications)**

**input.html**

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="Choice.jsp" method="post">
Enter the Value-1:<input type="text" name="v1"><br>
Enter the Value-2:<input type="text" name="v2"><br>
<input type="submit" name="sb" value="Add">
<input type="submit" name="sb" value="Sub">

</form>
</body>
</html>
```

**web.xml**

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app>
  <welcome-file-list>
    <welcome-file>input.html</welcome-file>
  </welcome-file-list>
</web-app>
```

### Choice.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String sb = request.getParameter("sb");
if(sb.equals("Add")){
%>
<jsp:forward page="Addition.jsp">
  <jsp:param value="<%= 1000 %>" name="p"/>
</jsp:forward>
<%
}else{
%>
<jsp:forward page="Subtraction.jsp">
  <jsp:param value="<%= 2000 %>" name="q"/>
</jsp:forward>
<%
}
%>
</body>
</html>
```



### Addition.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
```



```

<title>Insert title here</title>
</head>
<body>
<%
int v1 = Integer.parseInt(request.getParameter("v1"));
int v2 = Integer.parseInt(request.getParameter("v2"));
int v3 = v1+v2;
out.println("Sum="+v3+"<br>");
out.println("Para-Value="+request.getParameter("p")+"<br>");
%>
<jsp:include page="input.html"/>
</body>
</html>

```

#### Subtraction.jsp

```

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
int v1 = Integer.parseInt(request.getParameter("v1"));
int v2 = Integer.parseInt(request.getParameter("v2"));
int v3 = v1-v2;
out.println("Sub="+v3+"<br>");
out.println("Para-Value="+request.getParameter("q")+"<br>");
%>
<jsp:include page="input.html"/>
</body>
</html>

```

=====