

Dt : 23/12/2023

JSP Conclusion:

=>JSP uses the following tags to write Java-code in JSP programs:

1.Scripting tags

2.Directive tags

3.Action tags

1.Scripting tags:

=>The Scripting tags are used to write JavaCode in JSP programs.

=>These Scripting tags are categorized into the following:

(a)Scriptlet tag

(b)Expression tag

(c)Declarative tag

(a)Scriptlet tag:

=>Scriptlet tag is used to write Normal JavaCode or ServletCode in JSP programs.

syntax:

<% code %>

(b)Expression tag:

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

display the data to WebBrowser directly.

syntax:

<%= value/Expression %>

(c)Declarative tag:

=>Declarative tag is used to declare variables and methods in JSP Programs.

syntax:

<%! Variables;Methods %>

2.Directive tags:

=>The tags which are used to specify the directions in translation process of JSP Programs.

=>Directive tags are categorized into the following:

(a)@page

(b)@include

(c)@taglib

(a)@page:

=>'@page' will specify Language used in JSP,contextType,pageEncoding, importing and so on...

(Specifications about the JSP page)

syntax:

<%@page ... %>

(b)@include:

=>'@include' will specify which page must be included to current running

JSP program

syntax:

<%@include file="File_name"/%>

(c)@taglib:

=>'@taglib' is used to link external libraries to current JSP program.

syntax:

<%@taglib%>

3.Action tags:

=>Action tag used to perform some actions related to JSP programs while execution process.

=>These Action tag are categorized into the following:

(a)<jsp:include>

(b)<jsp:forward>

(c)<jsp:param>

(d)<jsp:useBean>

(f)<jsp:getProperty>

Ex-program:(Demonstrating JSP-Application)

The diagram illustrates the JSP runtime environment and the flow of data and control. Key components and their interactions include:

- Browser Request:** A request is made to `http://localhost:8082/App_Servlet12_JSPApp1`.
- ServletContext:** The request is processed by the `ServletContext` (labeled as the `0x1 application`).
- web.xml:** The `web.xml` file contains the configuration for the `Calculate.jsp` page.
- ServletConfig:** The `ServletConfig` object provides configuration data to the `Calculate.jsp` page.
- Calculate.jsp:** The JSP page contains an `input.html` form with a text input field containing the value `4` and a `Factorial` button. An exception `Exception` (specifically `java.lang.NumberFormatException`) is thrown when the input is processed.
- JspWriter:** The `JspWriter` object is used to write the output of the JSP page.
- HttpServletResponse:** The `HttpServletResponse` object is used to send the response back to the browser.
- Error Handling:** An `Error.jsp` page is shown, which is triggered when an exception occurs. It displays the exception message and the input value `4.5`.
- Response:** The final response is sent back to the browser, containing the output of the `Calculate.jsp` page.

```
<!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>
```

```
<%@ 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("Invalid input...<br>");
%>
<%= exception %>
<br>
<%@include file="input.html" %>
</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>

```

```

=====
===

```

***imp**

Implicit Objects of JSP:

- 1.application** - `javax.servlet.ServletContext`
- 2.session** - `javax.servlet.jsp.HttpSession`
- 3.config** - `javax.servlet.ServletConfig`
- 4.request** - `javax.servlet.http.HttpServletRequest`
- 5.response** - `javax.servlet.http.HttpServletResponse`

6.out - javax.servlet.jsp.JspWriter

7.exception - java.lang.Exception

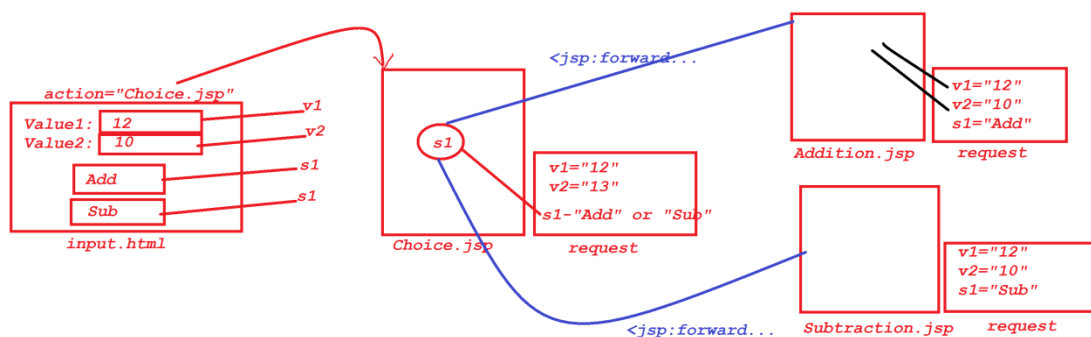
8.page - java.lang.Object

9.pageContext - javax.servlet.jsp.PageContext

=====

Ex-program:(Demonstrating <jsp:include>,<jsp:forward> and <jsp:param>)

Layout:



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" value="Add" name="s1">
<input type="submit" value="Sub" name="s1">
```

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

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 s1 = request.getParameter("s1");
if(s1.equals("Add")){
    %>
    <jsp:forward page="Addition.jsp">
        <jsp:param value="<%= 200%>" name="nm"/>
    </jsp:forward>
    <%
}else{
    %>
    <jsp:forward page="Subtraction.jsp">
        <jsp:param value="<%= 300 %>" name="nm"/>
    </jsp:forward>
    <%
}
%>
</body>
</html>
```

Addition.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 v1 = Integer.parseInt(request.getParameter("v1"));
int v2 = Integer.parseInt(request.getParameter("v2"));
int v3 = v1+v2;
out.println("Name: "+request.getParameter("nm")+"<br>");
out.println("Addition: "+v3+"<br>");
%>
<jsp:include page="input.html"/>
</body>
</html>

```

Subtraction.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 v1 = Integer.parseInt(request.getParameter("v1"));
int v2 = Integer.parseInt(request.getParameter("v2"));
int v3 = v1-v2;
out.println("Name: "+request.getParameter("nm")+"<br>");
out.println("Subtraction: "+v3+"<br>");
%>
<jsp:include page="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("Invalid input...<br>");
%>
<%= exception %>
<br>
<jsp:include page="input.html"/>
</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>
```

```
=====
==
```