JSP EL & JSTL PART-1

JSP EL

JSP EL stands for Java Server Pages Expression Language.

JSP EL introduced with JSTL in JSP 2.0 version.

JSTL stands for JSP Standard Tag Library.

Both JSP EL & JSTL were introduced in JSP 2.0 to simplify the JSP.

By using JSP EL & JSTL, JSP becomes 100% tag based application.

By eliminating scripting elements from JSP, JSP becomes 100% tag based application.

Scriptlets & Declarations can be replaced with JSTL.

Expressions can be replaced with JSP EL.

The pattern that identifies JSP EL is ${}

By default expression language is enabled in JSP.

To disable JSP EL, we use the following code in a JSP:

<%@ page isELIgnored="true" %>

Operator	Meaning
+	Addition
-	Subtraction
*	Multiplication
/ (or) div	Division
% (or) mod	Modulo Division

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< (or) lt	Less than
> (or) gt	Greater than
<= (or) le	Less than or equals to
>= (or) ge	Greater than or equals to
== (or) eq	Equals to
!= (or) ne	Not equals to
&& (or) and	Logical AND
|| (or) or	Logical OR
! (or) not	Logical NOT

JSP EL implicit object references

1) pageScope

2) requestScope

3) sessionScope

4) applicationScope

5) param

6) initParam

7) cookie

1) pageScope:

It is used to retrieve page scope attributes.

2) requestScope:

It is used to retrieve request scope attributes.

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3) sessionScope:

It is used to retrieve session scope attributes.

4) applicationScope:

It is used to retrieve application scope attributes.

Example

```
<html>

<body bgcolor=green text=yellow>

<h1>

<%

pageContext.setAttribute("book1", "Java2 Complete Reference",
PageContext.PAGE_SCOPE);

pageContext.setAttribute("book2", "Head First Java",
PageContext.REQUEST_SCOPE);

pageContext.setAttribute("book3", "Thinking In Java",
PageContext.SESSION_SCOPE);

pageContext.setAttribute("book4", "SCJP By Kathy Sierra",
PageContext.APPLICATION_SCOPE);

%>

${ pageScope.book1 }<br>

${ requestScope.book2 }<br>

${ sessionScope.book3 }<br>

${ applicationScope.book4 }

</h1>
```

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```
</body>

</html>
```

5) param:

It is used to retrieve request parameters.

Example:

HTML Page

```
<input type=text name=uname>

<input type=password name=pword>
```

JSP Page

```
${ param.uname }

${ param.pword }
```

6) initParam:

It is used to retrieve initialization parameters.

Example:

web.xml

```
<init-param>

<param-name>message</param-name>

<param-value>Welcome</param-value>

</init-param>
```

JSP Page

```
${ initParam.message }
```

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7) cookie:

It is used to retrieve cookie values.

Example:

set.jsp

```
<% Cookie c=new Cookie("book", "Java2 Complete Reference");
response.addCookie(c); %>
```

get.jsp

```
${ cookie["book"].value }
```

JSTL

JSTL stands for JSP Standard Tag Library.

JSTL introduced in JSP 2.0 version to simplify the JSP.

JSTL tags are divided into 5 categories:

1) Core Tags

2) SQL Tags

3) Formatting Tags

4) Function Tags

5) XML Tags

In order to use JSTL tags we must download the following JAR files from Internet and copy into tomcat lib folder:

1) jstl.jar

2) standard.jar

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1) Core Tags:

1) <c:out>

2) <c:set>

3) <c:remove>

4) <c:if>

5) <c:choose>

6) <c:when>

7) <c:otherwise>

8) <c:forEach>

9) <c:forTokens>

10) <c:redirect>

In order to use the above tags we must include the following taglib directive in a JSP.

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

1) <c:out>:

It is used to display output messages.

2) <c:set>:

It is used to set the value in a variable.

3) <c:remove>:

It is used to remove the value from variable.

Example:

<html>

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```
<body bgcolor=green text=yellow>

<h1>

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

<c:set var="a" value="10" />

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

<c:remove var="a" />

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

</h1>

</body>

</html>
```

4) <c:if>:

It is used to express the condition.

Example:

```
<html>

<body bgcolor=green text=yellow>

<h1>

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

<c:set var="a" value="10" />

<c:if test="${ a>0 }">

<c:out value="Positive Number" />

</c:if>

</h1>
```

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

5)<c:choose> 6)<c:when> & 7)<c:otherwise> tags are equivalent to if else if ..... else statement or switch statement.

Example:

```
<html>
<body bgcolor=green text=yellow>
<h1>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<c:set var="a" value="-10" />
<c:choose>
<c:when test="${ a>0 }">
<c:out value="Positive Number" />
</c:when>
<c:when test="${ a<0 }">
<c:out value="Negative Number" />
</c:when>
<c:otherwise>
<c:out value="Zero" />
</c:otherwise>
</c:choose>
</h1>
```

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

8) <c:forEach>:

It is equivalent to for loop

Example:

```
<html>
<body bgcolor=green text=yellow>
<h1>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<c:forEach var="i" begin="1" end="10" step="1">
<c:out value="${ i }" /><br>
</c:forEach>
</h1>
</body>
</html>
```

9) <c:forTokens>:

It is equivalent to StringTokenizer class.

Example:

```
<html>
<body bgcolor=green text=yellow>
<h1>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
```

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```
<c:forTokens var="s" items="Welcome:To:JSTL" delims=":">
<c:out value="${ s }" /><br>
</c:forTokens>
</h1>
</body>
</html>
```

10) <c:redirect>:

It is used to pass the control from one jsp to another jsp

Example:

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

SQL Tags:

1) <sql:setDataSource>

2) <sql:update>

3) <sql:query>

In order to use the above tags we must include the following taglib directive in a JSP.

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

1) <sql:setDataSource>:

It is used to establish the connection between JSP and database.

2) <sql:update>:

It is used to execute non select queries.

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3) <sql:query>:

It is used to execute select queries.

Example:

```
<html>
<body bgcolor=red text=yellow>
<table border=20 width=500 height=300>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql" %>
<sql:setDataSource var="con" driver="oracle.jdbc.driver.OracleDriver"
url="jdbc:oracle:thin:@localhost:1521:xe" user="system"
password="manager" />
<sql:query var="rs" dataSource="${ con }" sql="select * from uinfo" />
<c:forEach var="record" items="${ rs.rows }">
<tr><td><c:out value="${ record.fname }" /></td>
<td><c:out value="${ record.lname }" /></td>
<td><c:out value="${ record.uname }" /></td>
<td><c:out value="${ record.pword }" /></td></tr>
</c:forEach>
</table>
</body>
</html>
```

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