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

General-Purpose Actions
Actions for rendering data, creating and modifying scoped variables, and catching exceptions.

<c:out> - renders data to the page

```
<h2>Welcome, <c:out value="${user.name}"
default="Guest"/></h2>
```

Attribute	Description	Rqd	Default
value	Data to output	Yes	*None*
default	Fallback data to output if *value* is empty	No	*Body*
escapeXml	`true` to escape special characters	No	true

<c:set> - saves data to a scoped variable

```
<c:set var="dogAge" value="${age div 7}"/>
You are <c:out value="${dogAge}"/> in dog
years.
```

Attribute	Description	Rqd	Default
value	Data to save	No	*Body*
target	Name of variable to modify	No	*None*
property	Property of target to modify	No	*None*
var	Name of variable to store data	No	*None*
scope	Scope of variable	No	page

<c:remove> - deletes a scoped variable

```
<c:remove var="dogAge" scope="page"/>
```

Attribute	Description	Rqd	Default
var	Name of variable to delete	Yes	*None*
scope	Scope of variable	No	*All scopes*

<c:catch> - traps all exceptions or errors from the enclosed body.

```
<c:catch var="err">
  <c:import value="http://java.sun.com"/>
</c:catch>
<c:if test="${not empty err}">
  Could not connect to Java web site.
</c:if>
```

Attribute	Description	Rqd	Default
var	Name of variable to hold the thrown exception, if any. Variable will be of type java.lang.Throwable.	No	*None*

Conditional Actions
Actions for processing markup based on logical conditions.

<c:if> - processes the body if *test* is true

```
<c:if test="${user.age ge 40}">
  You are over the hill.
</c:if>
```

Attribute	Description	Rqd	Default
test	Condition to evaluate	Yes	*None*
var	Name of variable to store test condition's result	No	*None*
scope	Scope of variable	No	page

<c:choose> - multiple conditions – processes the body of the **first** enclosed when tag where the test condition is true. If none match then the body of the otherwise tag (if present) is processed.

```
<c:choose>
```

```
  <c:when test="${a boolean expr}">
     // do something
  </c:when>

  <c:when test="${another boolean expr}">

     // do something else
  </c:when>
  <c:otherwise>
     // do this when nothing else is true
  </c:otherwise>
</c:choose>
```

The choose tag accepts no attributes and can only contain when *tag(s) and an optional* otherwise *tag.*

<c:when> - processes the body if *test* is true and no other previous `<c:when>` tags evaluated to true.

Attribute	Description	Rqd	Default
test	Condition to evaluate	Yes	*None*

<c:otherwise> - processes the body if no other previous `<c:when>` condition matched. This tag accepts no attributes and, if present, must be the last tag in the `<c:choose>` body.

Iterator Actions
Actions that loop over collections, for a fixed number of times, or over a set of string tokens. These actions share the following attributes for iterating over a subset of elements.

Attribute	Description	Rqd	Default
begin	Zero-based index of first item to process, inclusive.	No	0
end	Zero-based index of last item to process, inclusive.	No	*Last item*
step	Process every *step*th element (e.g 2 = every second element).	No	1

Attribute	Description	Rqd	Default
varStatus	Name of variable to hold the loop status with the following properties: • `index` – position of the current item • `count` – number of times through the loop (starting with 1) • `first` – boolean indicator if this is the first iteration • `last` – boolean indicator if this is the last iteration	No	*None*

<c:forEach> - repeats the nested body content over a collection or for a fixed number of times.

```
<c:forEach items="${user.languages}"
           var="lang" varStatus="status">
  <c:if test="${status.first}">
    You speak these languages:<br><ul>
  </c:if>
  <li><c:out value="${lang}"/></li>
  <c:if test="${status.last}"></ul></c:if>
</c:forEach>
```

Attribute	Description	Rqd	Default
var	Name of variable to hold the current item. This variable has only nested visibility.	No	*None*
items	Collection, iterator, map, or array to loop over.	No	*None*

<c:forTokens> - repeats the nested body content for each token of a delimited string.

```
<c:set var="users">Fred,Joe,Mary<c:set>
<c:forTokens var="name" items="${users}"
             delims=",">
  <c:out value="${name}"/><br/>
</c:forTokens>
```

Attribute	Description	Rqd	Default

Attribute	Description	Rqd	Default
var	Name of variable to hold the current token. This variable has only nested visibility.	No	*None*
items	String of tokens to loop over.	Yes	*None*
delims	Set of characters that separate the tokens (e.g. delims=",;" will tokenize a string separated by commas or semi-colons).	Yes	*None*

URL Related Actions
Actions for importing content from URLs, building URLs, and redirecting.

<c:import> - imports the content of a URL-based resource. Action may include nested `<c:param>` tags to specify the query string (unless the `varReader` attribute is specified).

```
<c:import url="includes/header.jsp">
  <c:param name="title">Hello World</c:param>
</c:import>
```

Attribute	Description	Rqd	Default
url	URL of the resource to import.	Yes	*None*
context	Name of the context (beginning with a /) of some other local web application to import the resource from.	No	*Current context*
var	Name of the variable to hold the imported content as a String.	No	*None*
scope	Scope of the *var* variable	No	page
varReader	Name of the variable to hold the imported content as a Reader. This variable has only nested visibility so that the reader will always be closed.	No	*None*

<c:url> - builds a URL with the proper rewriting rules applied (only relative URLs are rewritten). Action may include nested `<c:param>` tags to specify the query string.

```
<c:url="editProfile.do" var="profileLnk">
  <c:param name="id" value="${user.id}"/>
</c:url>
<a href='<c:out value="${profileLnk}"/>'>
  Edit Profile
</a>
```

Attribute	Description	Rqd	Default
value	URL to be processed.	Yes	*None*
context	Name of the context (beginning with a /) of some other local web application.	No	*Current context*
var	Name of the variable to hold the URL as a String.	No	*None*
scope	Scope of the *var* variable	No	page

<c:redirect> - sends the client a response to redirect to the specified URL. This action will abort processing of the current page. Action may include nested `<c:param>` tags to specify the query string.

```
<c:if test="${empty user}">
  <c:redirect url="login.do"/>
</c:if>
```

Attribute	Description	Rqd	Default
url	URL of the resource to redirect to.	Yes	*None*
context	Name of the context (beginning with a /) of some other local web application.	No	*Current context*

<c:param> - adds request parameters to a URL. This action can only be nested within `<c:import>`, `<c:url>`, or `<c:redirect>`.

Attribute	Description	Rqd	Default
name	Name of the query string parameter.	Yes	*None*
value	Value of the parameter. If not specified, value is taken from the tag body.	No	*Body*