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#### JSTL (JSP Standard Tag Library)

The JSP Standard Tag Library (JSTL) represents a set of tags to simplify the JSP development.

#### Advantage of JSTL

1. **Fast Development** JSTL provides many tags that simplify the JSP.
2. **Code Reusability** We can use the JSTL tags on various pages.
3. **No need to use scriptlet tag** It avoids the use of scriptlet tag.

#### JSTL Tags

There JSTL mainly provides five types of tags:

**Tag Name: Description**

**Core tags:** The JSTL core tag provide variable support, URL management, flow control, etc. The URL for the core tag is http://java.sun.com/jsp/jstl/core. The prefix of core tag is c.

**Function tags:** The functions tags provide support for string manipulation and string length. The URL for the functions tags is http://java.sun.com/jsp/jstl/functions and prefix is fn.

**Formatting tags:** The Formatting tags provide support for message formatting, number and date formatting, etc. The URL for the Formatting tags is http://java.sun.com/jsp/jstl/fmt and prefix is fmt.

**XML tags:** The XML tags provide flow control, transformation, etc. The URL for the XML tags is http://java.sun.com/jsp/jstl/xml and prefix is x.

**SQL tags:** The JSTL SQL tags provide SQL support. The URL for the SQL tags is http://java.sun.com/jsp/jstl/sql and prefix is sql.

#### For creating JSTL application, you need to load the jstl.jar file.

#### Download the jstl.jar file

[Download the jstl1.2.jar file](https://static.javatpoint.com/jsppages/src/jstl-1.2.jar)

#### STL Core Tags

The JSTL core tag provides variable support, URL management, flow control etc. The syntax used for including JSTL core library in your JSP is:

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

#### JSTL Core Tags List

Tags Description

c:out It display the result of an expression, similar to the way <%=...%> tag work.

c:import It Retrives relative or an absolute URL and display the contents to either a String in 'var',a Reader in 'varReader' or the page.

c:set It sets the result of an expression under evaluation in a 'scope' variable.

c:remove It is used for removing the specified scoped variable from a particular scope.

c:catch It is used for Catches any Throwable exceptions that occurs in the body.

c:if It is conditional tag used for testing the condition and display the body content only if the expression evaluates is true.

c:choose, c:when, c:otherwise It is the simple conditional tag that includes its body content if the evaluated condition is true.

c:forEach It is the basic iteration tag. It repeats the nested body content for fixed number of times or over collection.

c:forTokens It iterates over tokens which is separated by the supplied delimeters.

c:param It adds a parameter in a containing 'import' tag's URL.

c:redirect It redirects the browser to a new URL and supports the context-relative URLs.

c:url It creates a URL with optional query parameters.

#### JSTL Function Tags

The JSTL function provides a number of standard functions, most of these functions are common string manipulation functions. The syntax used for including JSTL function library in your JSP is:

1. **<**%@ taglib uri="http://java.sun.com/jsp/jstl/functions" prefix="fn" %**>**

#### JSTL Function Tags List

JSTL Functions Description

fn:contains() It is used to test if an input string containing the specified substring in a program.

fn:containsIgnoreCase() It is used to test if an input string contains the specified substring as a case insensitive way.

fn:endsWith() It is used to test if an input string ends with the specified suffix.

fn:escapeXml() It escapes the characters that would be interpreted as XML markup.

fn:indexOf() It returns an index within a string of first occurrence of a specified substring.

fn:trim() It removes the blank spaces from both the ends of a string.

fn:startsWith() It is used for checking whether the given string is started with a particular string value.

fn:split() It splits the string into an array of substrings.

fn:toLowerCase() It converts all the characters of a string to lower case.

fn:toUpperCase() It converts all the characters of a string to upper case.

fn:substring() It returns the subset of a string according to the given start and end position.

fn:substringAfter() It returns the subset of string after a specific substring.

fn:substringBefore() It returns the subset of string before a specific substring.

fn:length() It returns the number of characters inside a string, or the number of items in a collection.

fn:replace() It replaces all the occurrence of a string with another string sequence.

#### JSTL Formatting tags

The formatting tags provide support for message formatting, number and date formatting etc. The url for the formatting tags is **http://java.sun.com/jsp/jstl/fmt**and prefix is **fmt.**

The JSTL formatting tags are used for internationalized web sites to display and format text, the time, the date and numbers. The syntax used for including JSTL formatting library in your JSP is:

1. **<**%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt"  %**>**

Formatting Tags Descriptions

fmt:parseNumber It is used to Parses the string representation of a currency, percentage or number.

fmt:timeZone It specifies a parsing action nested in its body or the time zone for any time formatting.

fmt:formatNumber It is used to format the numerical value with specific format or precision.

fmt:parseDate It parses the string representation of a time and date.

fmt:bundle It is used for creating the ResourceBundle objects which will be used by their tag body.

fmt:setTimeZone It stores the time zone inside a time zone configuration variable.

fmt:setBundle It loads the resource bundle and stores it in a bundle configuration variable or the named scoped variable.

fmt:message It display an internationalized message.

fmt:formatDate It formats the time and/or date using the supplied pattern and styles.

#### JSTL XML tags

The JSTL XML tags are used for providing a JSP-centric way of manipulating and creating XML documents.

The xml tags provide flow control, transformation etc. The url for the xml tags is **http://java.sun.com/jsp/jstl/xml** and prefix is x. The JSTL XML tag library has custom tags used for interacting with XML data. The syntax used for including JSTL XML tags library in your JSP is:

1. **<**%@ taglib uri="http://java.sun.com/jsp/jstl/xml" prefix="x" %**>**

Before you proceed further with the examples, you need to copy the two XML and XPath related libraries into the <Tomcat Installation Directory>\lib:

**Xalan.jar**: Download this jar file from the link:

1. http://xml.apache.org/xalan-j/index.html

**XercesImpl.jar**: Download this jar file from the link:

1. http://www.apache.org/dist/xerces/j/

#### JSTL XML tags List

XML Tags Descriptions

x:out Similar to <%= ... > tag, but for XPath expressions.

x:parse It is used for parse the XML data specified either in the tag body or an attribute.

x:set It is used to sets a variable to the value of an XPath expression.

x:choose It is a conditional tag that establish a context for mutually exclusive conditional operations.

x:when It is a subtag of that will include its body if the condition evaluated be 'true'.

x:otherwise It is subtag of that follows tags and runs only if all the prior conditions evaluated be 'false'.

x:if It is used for evaluating the test XPath expression and if it is true, it will processes its body content.

x:transform It is used in a XML document for providing the XSL(Extensible Stylesheet Language) transformation.

x:param It is used along with the transform tag for setting the parameter in the XSLT style sheet.

#### JSTL SQL Tags

The JSTL sql tags provide SQL support. The url for the sql tags is **http://java.sun.com/jsp/jstl/sql** and prefix is **sql**.

The SQL tag library allows the tag to interact with RDBMSs (Relational Databases) such as Microsoft SQL Server, mySQL, or Oracle. The syntax used for including JSTL SQL tags library in your JSP is:

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

#### JSTL SQL Tags List

SQL Tags Descriptions

sql:setDataSource It is used for creating a simple data source suitable only for prototyping.

sql:query It is used for executing the SQL query defined in its sql attribute or the body.

sql:update It is used for executing the SQL update defined in its sql attribute or in the tag body.

sql:param It is used for sets the parameter in an SQL statement to the specified value.

sql:dateParam It is used for sets the parameter in an SQL statement to a specified java.util.Date value.

sql:transaction It is used to provide the nested database action with a common connection.

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**Video Lectures :**

**Reference Links:**

<https://www.tutorialspoint.com/jsp/jsp_standard_tag_library.htm>

<https://www.javatpoint.com/jstl>

<https://docs.oracle.com/javaee/5/tutorial/doc/bnake.html>

<https://www.journaldev.com/2090/jstl-tutorial-jstl-tags-example>

<https://beginnersbook.com/jsp-jstl-tutorial-jstl-functions-and-core-tags/>

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