Instructor Notes:

Add instructor notes here.

Instructor Notes:

Explain the lesson coverage. Notes pages has included the detailed lesson content.

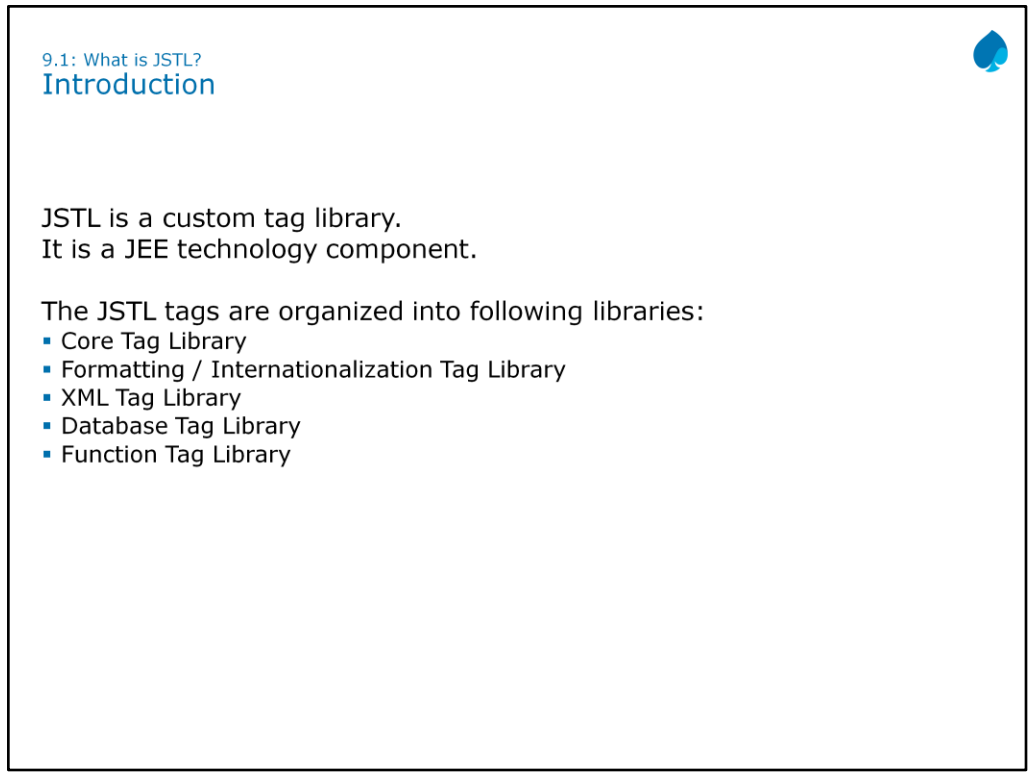
Lesson Objectives

In this lesson, you will learn:

- What is JSTL?
- Installing JSTL
- Using Expression Language
  - EL Capabilities
  - Accessing Scoped Variables
  - Accessing Bean Properties
  - Accessing Collections
  - Accessing Implicit Objects
  - Using Lambda in EL
  - EL Operators
- Using JSTL
  - Working with Core Tags

Instructor Notes:

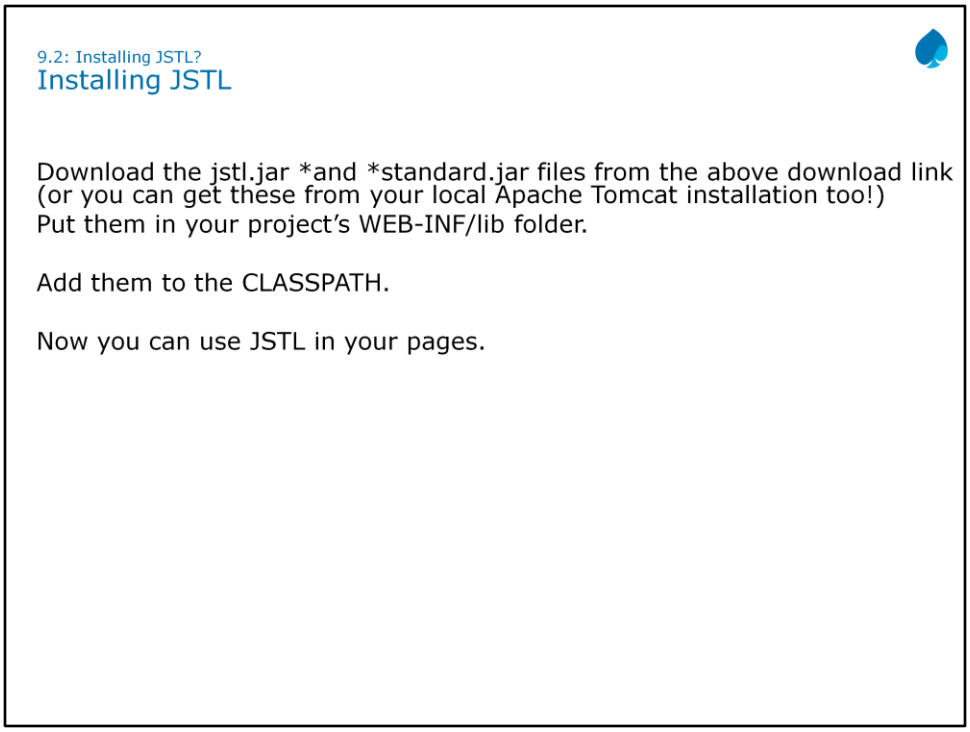
Don't go in details of each of these libraries. Just give the abstract view as we are covering all these libraries in details later in this session.



What is JSTL?

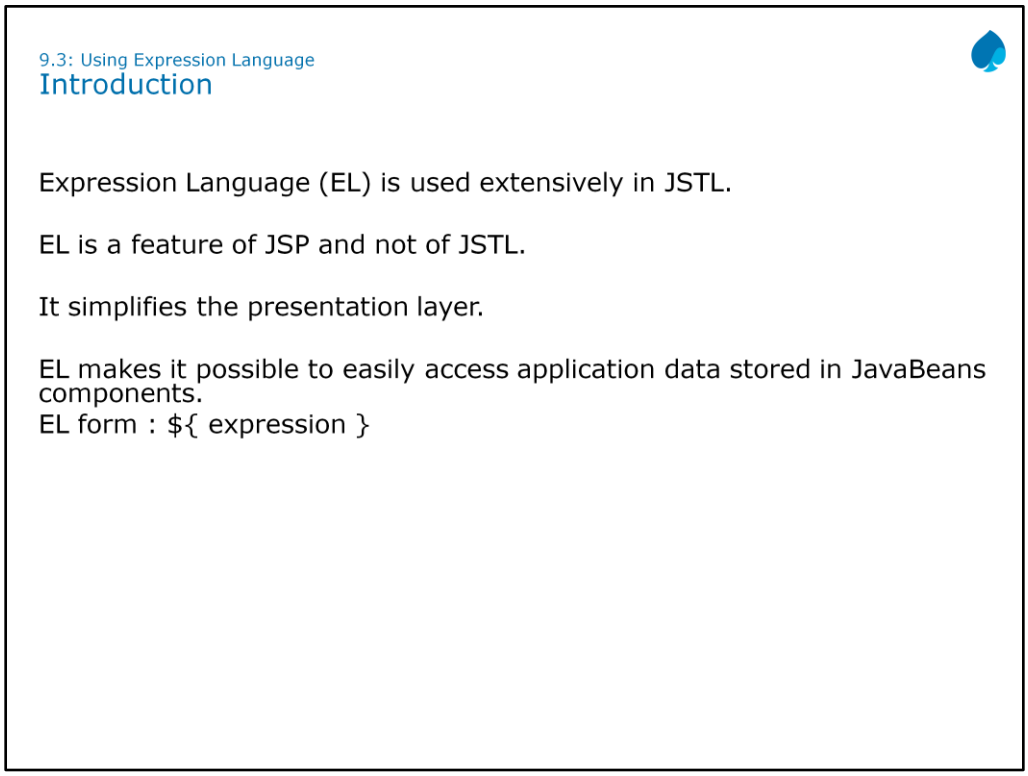
- **JSTL (JSP Standard Tag Libraries)** is a collection of JSP custom tags.
- The goal of JSTL, as described in the specification, is to help simplify JavaServer Pages page authors' lives.
- To achieve this goal, JSTL has provided custom tags for many common JSP page authoring tasks that require scripting statements to manipulate server side dynamic data.
- JSTL has tags such as iterators and conditionals for handling flow control, tags for manipulating XML documents, internationalization tags, tags for accessing databases using SQL, and commonly used functions.
- JSTL offers tags through following libraries:
  - **core:** Basic scripting functions
  - **xml:** XML processing
  - **fmt:** Internationalization of formatting
  - **sql:** Data base accessing
  - **fn:** JSTL functions

Instructor Notes:



Instructor Notes:

We are covering EL topic before JSTL libraries because EL is used in JSTL libraries demonstration.



Using Expression Language:

- Expression Language is introduced with JSP 2.0, and many more capabilities are added with JSP 2.1.
- Expression Language is used with JSTL to simplify the presentation layer.
- Expression Language replaces the action tags <jsp:useBean> <jsp:getProperty> used to access Java beans properties with short and readable expressions.
- Express Language uses the form **${expr}** to access and specify an expression.

Example:

- ${rs.rowCount}, ${x+y}

Instructor Notes:

Using JSTL:

- The **JavaServer Pages Standard Tag Library (JSTL)** encapsulates core functionality common to many JSP applications. Instead of mixing tags from numerous vendors in JSP applications, JSTL allows to employ a single, standard set of tags. This standardization allows to deploy applications on any JSP container supporting JSTL and makes it more likely that the implementation of the tags is optimized.
- JSTL has tags such as iterators and conditionals for handling flow control, tags for manipulating XML documents, internationalization tags, tags for accessing databases using SQL, and commonly used functions.

Instructor Notes:

Core tags are grouped based on their functions as shown in the table.
Explain use of each tag.

9.4.1: Working with Core Tags

Overview

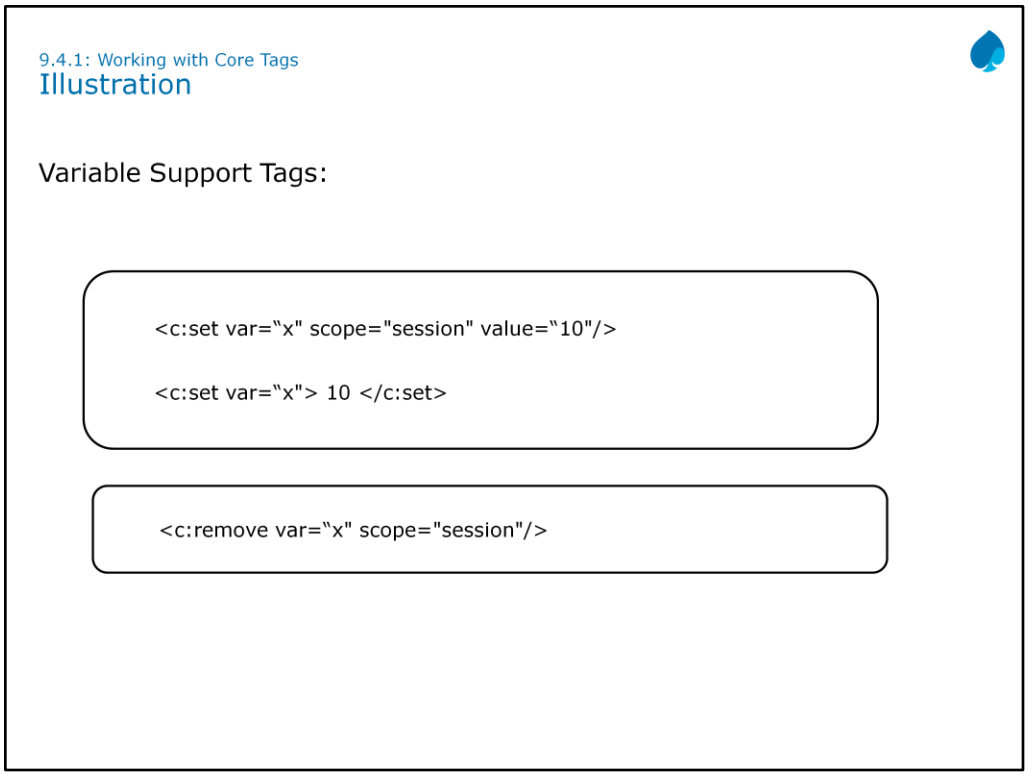
Area	Function	Tags	Prefix
Core	Variable support	remove set	c
	Flow control	choose..when..otherwise, forEach, forTokens , if	
	URL management	import .. param , redirect .. Param, url .. param	
	Miscellaneous	catch out	

Working with Core Tags:

- Core tags provide tags related to variables and flow control as well as a generic way to access URL-based resources whose content can then be included or processed within the JSP page.
  - **<c:set>:** It specifies basic variable setting actions
  - **<c:out>:** It specifies basic output actions
  - **<c:if test= ? :** Conditional action
  - **<c:choose>, <c:when> , <c:otherwise>:** Conditional action
  - **<c:forEach> :** Iteration actions
  - **<c:forTokens> :** Iteration actions
  - **<c:import> :** It retrieves content from a local jsp page or another server.
  - **<c:url> :** It specifies the URL of the content to retrieve.
  - **<c:redirect> :** It sends a HTTP redirect to the client.
  - **<c:param> :** It adds request parameters to an URL.
  - **<c:catch> :** It catches a java.lang.Throwable thrown by any of its nested actions.
- Next few slides illustrate these tags.

Instructor Notes:

<c:set> tag create variable an initialize it to some value.
AND
<c:remove> removes variable.



Working with Core Tags:
Variable Support Tags:

- The set tag sets the value of an EL variable or the property of an EL variable in any of the JSP scopes (page, request, session, or application). If the variable does not already exist, it is created.
- The JSP EL variable or property can be set from the attribute value as shown below:

```
<c:set var="x" scope="session" value="10"/>
```

- Alternatively it can be set from the body of the tag, as shown below:

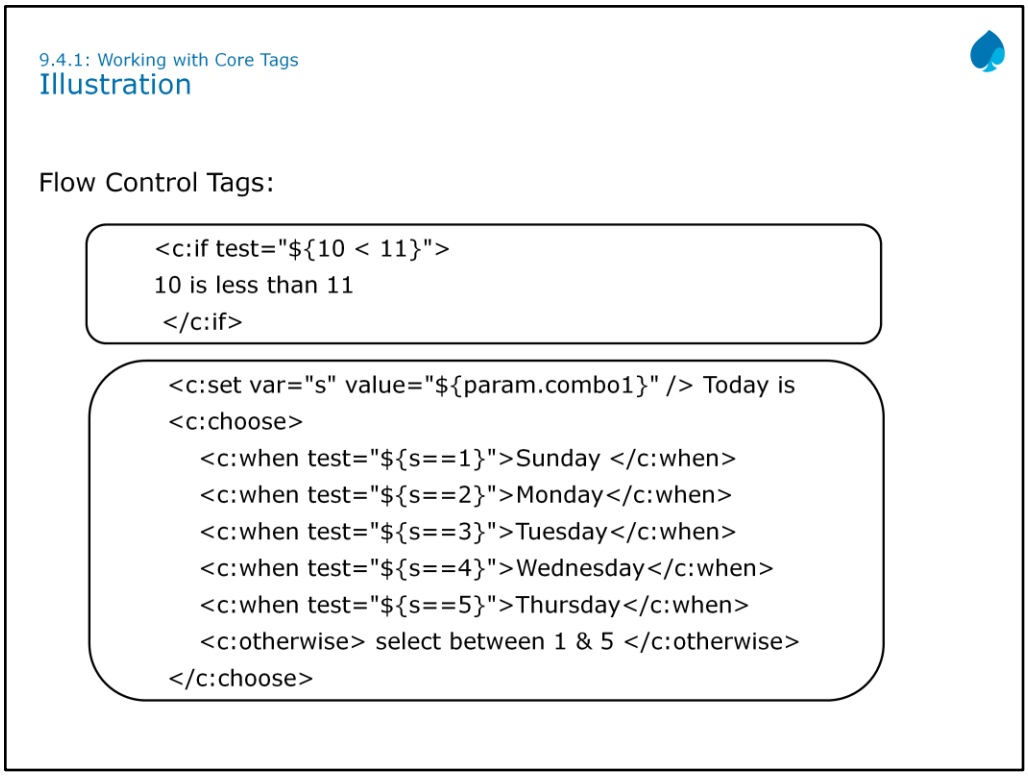
```
<c:set var="x">
  10
</c:set>
```

- To remove an EL variable, use the remove tag. Above variable is removed as follows:

```
<c:remove var="x" scope="session"/>
```

Instructor Notes:

There are many other tags also there which can change the flow of execution like <c:forEach>

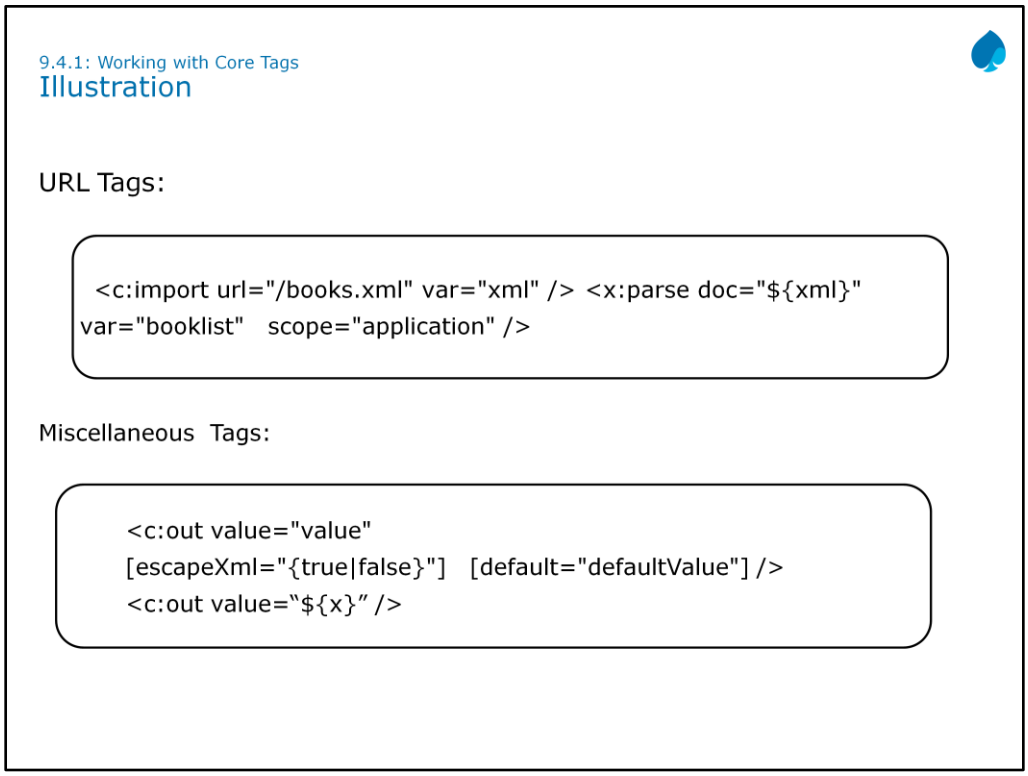


Working with Core Tags:

Flow Control Tags :

- The illustration in the above slide shows the use of conditional tags like <c:if> and <c:choose>.
- For iteration tag illustration, please refer the slide no-6.

Instructor Notes:



Working with Core Tags:

URL and Miscellaneous Tags:

- In the illustration in the above slide, “import” is used to read the XML document containing book information and assign the content to the scoped variable xml.
- The out tag evaluates an expression and outputs the result of the evaluation to the current **JspWriter** object.

Instructor Notes:

Refer Core folder:

If.jsp
Chooser.jsp
forEach.jsp
movies.jsp
Students\jsp\index.jsp
Userlogin\jsp\index.jsp
Programs for demonstration

Demo

Working with Core Tags:

- coreTags1.jsp
- coreTags2.jsp
- coreTags3.jsp
- coreTags4.jsp
- header.jsp
- footer.jsp

Deploy web application **Lesson5-JSTL_Core_Tags** and show demo by executing index.jsp and referring to each of the above JSP pages.

Instructor Notes:

Lab: JSTL

Lab 5.1

Instructor Notes:

Summary

In this lesson, you have learnt about:

- The need for JSTL
- The JSTL libraries
- Features in EL expression
- Different tags from core

Instructor Notes:

Answers for the Review Questions:

Answer 1: fmt

Answer 2: False

Review Question

Question 1: Which of the following library provides tags for internationalization?

- Option 1: sql
- Option 2: xml
- Option 3: fmt
- Option 4: core

Question 2: EL expression can be used within JSP scriptlet tags.

- True/False

Instructor Notes:

Answers for the Review Questions:

Answer 3: core

Answer 4: False

Review Question

Question 3: Which of the following library provides tags for adding request parameters to an URL

- Option 1: sql
- Option 2: fn
- Option 3: fmt
- Option 4: core

Question 4: EL language uses '#' symbol to write expression.

- True / False