UNIT : 6

Introduction to JSP Directive

- Syntax

- <%@ directive attribute="value" %>

- <%@ directive attribute1="value1" attribute2="value2" ... attributeN="valueN" %>

- three main types of directives: page, include, and taglib

Page Directive

- control the structure of the servlet

- can be placed anywhere within the document

include Directive

- insert a file into the JSP page at the time the JSP file is translated into a servlet

- should be placed in the document at the point at which you want the file to be inserted

taglib Directive

- defines custom markup tags

page Directive Attributes

Attributes	Attributes
import	info
contentType	errorPage
pageEncoding	isErrorPage
session	isThreadSafe
isELIgnored (JSP 2.0 only)	Language
buffer	extends
autoFlush	

Import attribute

- specify the packages that should be imported by the servlet into which the JSP page gets translated.

- utility classes, should always be in packages.With JSP, however, packages are absolutely required.

- By default, the servlet imports java.lang.*, javax.servlet.*, javax.servlet.jsp.*, javax.servlet.http.*

Import attribute

- Syntax

  <%@ page import="package.class" %>

   <%@ page import="package.class1,...,package.classN" %>

- Example

  <%@ page import="java.util.*" %>

- allowed to appear multiple times within the same document

Import attribute

```
<%@ page import="java.util.Date" %>
Today is: <%= new Date() %>
```

contentType Attribute

- sets the Content-Type response header.

- indicates the MIME type of the document being sent to the client.

- Syntax:
- <%@ page contentType="MIME-Type" %>
- <%@ page contentType="MIME-Type; charset=Character-Set" %>
  Eample:
- <%@ page contentType="application/vnd.ms-excel" %>

contentType Attribute

Eample:

- <%@ page contentType="application/vnd.ms-excel" %>

  Or

- <% response.setContentType("application/vnd.ms-excel"); %>

- attribute values cannot be computed at runtime

- Difference

contentType Directive	setContentType method
Uses only jsp syntax	Uses explicit java code
Can not be invoked conditionally	Can be invoked conditionally

contentType Attribute

- default MIME type is text/plain – servlet

- default MIME type is text/html – jsp (default character set of ISO-8859-1)

- <%@ page contentType="someMimeType; charset=someCharacterSet" %>

contentType Attribute

```jsp
<%@ page contentType="application/msword" %>
Today is: <%= new java.util.Date() %>
```

pageEncoding Attribute

- to change only character set
- <%@ page pageEncoding="Shift_JIS" %>

```
<%@ page language="java" contentType="text/html" %>


or:

<%@ page language="java" contentType="text/html; charset=ISO-8859-1" %>


or:

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
                        pageEncoding="US-ASCII" %>
```

session Attribute

- controls whether the page participates in HTTP sessions

- <%@ page session="true" %> <%-- Default --%>
- <%@ page session="false" %>

- True → predefined variable session (of type HttpSession) should be bound to the existing session if one exists; otherwise, a new session should be created and bound to session.

- False → no sessions will be automatically created and that attempts to access the variable session will result in errors at the time the JSP page is translated into a servlet.

session Attribute

- Setting false save significant amounts of server memory on high-traffic sites

- does not disable session tracking - prevents the JSP page from creating new sessions for users who don't have them already.

- sessions are user specific, not page specific

isELIgnored Attribute

- controls whether the JSP 2.0 Expression Language (EL) is ignored (true) or evaluated normally (false).

- default value of the attribute depends on the version of web.xml

- servlets 2.3 (corresponding to JSP 1.2) or earlier, the default is true servlets 2.4 (corresponding to JSP 2.0) or later, the default is false

- <%@ page isELIgnored="false" %>
- <%@ page isELIgnored="true" %>

buffer Attribute

- specifies the size of the buffer used by the out variable of type JspWriter

- <%@ page buffer="sizekb" %>
- <%@ page buffer="none" %>

- Servers can use a larger buffer than you specify, but not a smaller one

- <%@ page buffer="32kb" %>

buffer Attribute

- document content should be buffered and not sent to the client until at least 32 kilobytes are accumulated, the page is completed, or the output is explicitly flushed.

- default buffer size is server specific, but must be at least 8 kilobytes.

autoFlush Attribute

- controls whether the output buffer should be automatically flushed when it is full or
- an exception should be raised when the buffer overflows

- <%@ page autoFlush="true" %> <%-- Default --%>
- <%@ page autoFlush="false" %>

- A value of false is illegal when buffer="none" is also used

autoFlush Attribute

```jsp
<%@page buffer="5kb" autoFlush="false" %>
<%
for(int i = 0; i < 100; i++){
out.println("<html><body><img
src=http://localhost:8080/mca4/flower.jpg ></body></html>");
}
%>
```

info Attribute

- defines a string that can be retrieved from the servlet by means of the getServletInfo method.

```jsp
<%@ page info="Some Message" %>
```

```java
public java.lang.String getServletInfo() {
    return "Some Message";
}
```

errorPage Attribute

- specifies a JSP page that should process any exceptions thrown but not caught in the current page.

- <%@ page errorPage="Relative URL" %>

- The exception thrown will automatically be available to the designated error page by means of the exception variable.

isErrorPage   Attribute

- indicates whether or not the current page can act as the error page for another JSP page.

- <%@ page isErrorPage="true" %>
- <%@ page isErrorPage="false" %> <%-- Default --%>

isErrorPage   Attribute

```jsp
<%@ page errorPage="errorpage.jsp"%>
<html>
    <body>
        <%
            String s = null;
            out.println (s.length());
        %>
    </body>
</html>
```

```jsp
<%@ page isErrorPage="true"%>
<%= exception%>
```

isThreadSafe Attribute

- controls whether the servlet that results from the JSP page will allow concurrent access (the default) or will guarantee that no servlet instance processes more than one request at a time (isThreadSafe="false").

- <%@ page isThreadSafe="true" %> <%-- Default --%> <%@ page isThreadSafe="false" %> .

- for preventing concurrent access is to implement the SingleThreadModel interface .

- avoid isThreadSafe and use explicit synchronization instead.

extends   Attribute

- designates the superclass of the servlet that will be generated for the JSP page.

- <%@ page extends="package.class" %>

language   Attribute

- intended to specify the scripting language being used.

- <%@ page language="cobol" %>

XML Syntax for Directives

- <jsp:directive.directiveType attribute="value" />

- <%@ page import="java.util.*" %>

- <jsp:directive.page import="java.util.*" />