

# Chapter 3 : /

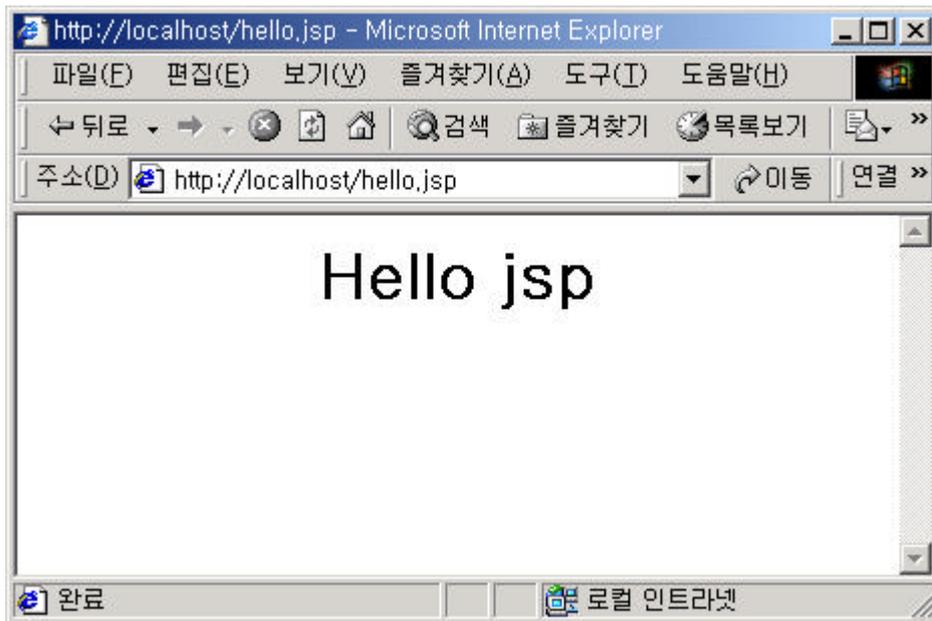
## Hello JSP

Hello (?) 가 Hello  
 jsp 가 ...

List 3.1

```
<html>
<body>
<center>
<h1>Hello jsp</h1>
</center>
</body>
</html>
```

hello.jsp jsp  
 가 ? ... html tag  
 jsp jsp 가 jsp



3.1

hello.jsp

**List 3.2**

```
<html>
<body>
<center>
<h1><%= "hello.jsp"%></h1>
</center>
</body>
</html>
```

[ 3-1 ] . Html 가  
 가 . Jsp 가 expression  
 ... Hello.jsp

**List 3.3**

```
<html>
<body>
<center>
<h1><jsp:expression>Hello.jsp</jsp:expression></h1>
</center>
</body>
</html>
```

가 . List 3.2 List3.3  
 가 (?) ? jsp xml  
 xml  
 ... 가 ...  
 : List3.3 가 가 . Jsp xml  
 tag . Tomcat3.2.1 가  
 , Resin1.2.3  
 Hello.jsp 가?

List 3.4

```
package com.boolpae.jsp;

public class HelloBean{
    String hello = "Hello jsp";
    public String getHello(){
        return hello;
    }
    public void setHello(String hello){
        this.hello = hello;
    }
}
```

List 3.5

```
<jsp:useBean id="hello" class="com.boolpae.jsp.HelloBean" />
<jsp:setProperty name="hello" property="hello" />
<html>
<body>
<center>
<h1><jsp:getProperty name="hello" property="hello" /></h1>
</center>
</body>
</html>
```

3.4/3.5	.	class
classpath가	. jsp	.
	hello jsp가	? (?)

List 3.6

```
package com.boolpae.jsp;

import javax.servlet.jsp.*;
import javax.servlet.jsp.tagext.*;
import java.io.*;
import javax.servlet.*;

public class HelloTag extends TagSupport{
    String value;
    public int doStartTag(){
        try{
```

```

        JspWriter out = pageContext.getOut();
        out.print("Hello jsp");
    }catch(IOException e){
        System.out.println(e);
    }
    return SKIP_BODY;
}
}

```

List 3.6 custom tag

가 . jsp  
 가  
 class  
 List 3.7 tld 가 TLD(tag library  
 descriptor)  
 가

List 3.7

```

<?xml version="1.0" encoding="ISO-8859-1" ?>
<!DOCTYPE taglib
PUBLIC "-//Sun Microsystems, Inc. //DTD JSP Tag Library 1.1//EN"
"http://java.sun.com/j2ee/dtds/web-jsptaglibrary_1_1.dtd">

<taglib>
  <tlibversion>1.0</tlibversion>
  <jspversion>1.1</jspversion>
  <shortname>jspace</shortname>
  <urn/>
  <info>
    JavaServer Pages
  </info>

  <tag>
    <name>hello</name>
    <tagclass>com.boolpae.jsp.HelloTag</tagclass>
    <info>Simple example : Hello jsp</info>
    <bodycontent>empty</bodycontent>
  </tag>
</taglib>

```

List 3.8 jsp  
 . xml . <tag> <name>  
 hello . Jsp tld (List 3.7 xml )  
 tld ( hello) class(List 3.6  
 ) . com.boolpae.jsp.HelloTag 가 .  
 custom tag

List 3.8

```
<%@ taglib uri="WEB-INF/classes/tld/hello.tld" prefix="jspace" %>
<html>
<body>
<center>
<h1>
<jspace:hello />
</h1>
</center>
</body>
</html>
```

```
jsp          hello jsp          . Hello
.           jsp                Hello jsp
.           가                  Hello JSP
.                                     jsp      (?)
```

## JSP

Jsp . JSP가 가

- 1. [Redacted]
- 2. [Redacted]

```
가
가 가
jsp      80%
(
... )
( 가 )
...
가? 가
```

가 . . .  
 가 . . .  
 (?) . . .  
 jsp 가 . . .  
 JavaBeans , Custom Tag, Servlet jsp  
 Servlet jsp ,  
 servlet jsp

### (Element Syntax)

jsp 가 . . .  
 ( 가 가 )  
 . Jsp 가 가  
 jsp 가 . . .

1. Directives
2. Scripting Elements
3. Actions

### Directives

Directives " " jsp  
 가 . . .

```
<%@ directive {attr="value"}* %>
```

: EBNF . EBNF  
 . {}  
 0 1 \*

가 page, include, taglib 가 .

## page Directive

jsp

. Jsp

가 가 ...

<%@ page attributeList %>

```
attributeList ::= { language= "scriptingLanguage"
                  { extends = "className"
                    { import = "importList"
                      { session = "true|false" }
                      { buffer = "none|sizekb" }
                      { autoFlush = "true|false" }
                      { isTreadSafe = "true|false" }
                      { info = "info_text" }
                      { errorPage = "error_url" }
                      { isErrorPage = "true|false" }
                      { contentType = "contentType information" }
```

가 ::= attributeList 11가  
 ( 가  
 가 . | or 가 . 가 .(or  
 ... 가 )

```
<%@ page language="java" extends=" javax.servlet.jsp.HttpJspPage"
import="java.util.*" session="false" buffer="8kb" autoFlus="true"
isTreadSafe="true" info="This page is example page"
errorPage="/error/error01.jsp" isErrorPage="false"
contentType="text/html; charset=EUC-KR"
%>
```

가

```

import . import
List . 가 .

<%@ page contentType="text/plain" %>
<%@ page contentType="text/html" %>

(Default)
Default가 .( ... )

language
java . 가
.
(?)
가 가 가 . ( ???
... )

extends jsp 가 super .
... jsp 가 jsp
request jsp
response .
jakarta-tomcat-3.2.1\work\
. extends
jsp 가
javax.servlet.jsp.HttpJspPage (implements)
가 ?
가
. (?) jsp 가

import jsp java . package
full name . 가 가? 가
Date 가 java.util java.sql .
. 가 URI 가?
가
* . jsp import java

```

```
import list (,) . import
```

```
<%@ page import="java.sql.*, java.util.*, com.boolpae.jsp.HelloClass %>
```

```
import java.lang.*, javax.servlet.*, javax.servlet.jsp.*,
javax.servlet.http.* . java.lang String,
import 가 import 가?
javax.servlet (?)
jsp Web
jsp Cookie c = new Cookie("id",
"bluenote"); 가 javax.servlet.http
```

```
session jsp session
true false true true
가 session(
javax.servlet.http.HttpSession ) false
session 가 session
Session
```

```
buffer jsp
JspWriter(javax.servlet.jsp.JspWriter) jsp
JspWriter
```

```
autoFlush
java
(java servlet ~
... ~ ...)
```

```
kb , none
8kb
```

```
autoFlush JspWriter Buffer
```

가 가 . 가  
 . true / false true .  
 false buffer가 (overflow) .  
 buffer="none" autoflush="false" . Buffer가

**isThreadSafe** jsp 가 SingleThreadModel  
 . true / false  
 true . true thread  
 , false SingleThreadModel  
 가 . Thread  
 false 가  
 true true가 .  
 가 .

, false 가 .  
 , 가  
 . 가  
 , DB

(synchronized) SingleThreadModel .  
 가 .  
 가 .

**info** . 가 .  
 Servlet getServletInfo() .

**isErrorPage** jsp  
 . false true exception jsp  
 가 jsp 가 가 .  
 errorPage .

List 3.9

```
<%@ page isErrorPage="true" %>
<HTML>
```

```
<BODY>
    가 . ~!!! <br>
    <%=exception %><br><br>
    <% exception.printStackTrace(new PrintWriter(out)); %>
</BODY>
</HTML>
```

jsp errorPage jsp 가 List 3.9 가  
 . Resin  
 error 가 , tomcat  
 error 가 가 .  
 가 .  
 error ,

List3.9

errorPage jsp 가 jsp 가

**ContentType** jsp response MIME .  
 MIME jsp  
 . html text/html . Acrobat PDF  
 application/pdf .  
 charset 가 charset= encoding .

```
<%@ page contentType="text/html; charset=EUC-KR" %>
```

**NOTE**

MIME TYPE : Multipurpose Internet Mail Extension

smtp , , , , ,  
 가 .  
 1991 SMTP

Nathan Borenstein

3-1 MIME TYPE

application/msword	
application/octet-stream	binary
application/pdf	(PDF)
application/vnd.lotus-notes	Lotus Notes
application/vnd.ms-excel	
application/vnd.ms-powerpoint	
application/x-gzip	Gzip
application/x-java-archive	JAR
application/x-java-serialized-object	Java
application/x-java-vm	Java class
application/zip	ZIP
audio/basic	au, snd
audio/x-wav	wav
audio/midi	midi
text/css	cascading style sheet
text/html	html
text/xml	xml
text/plain	text
image/gif	gif
image/jpeg	jpeg
image/png	png
image/x-bitmap	
video/mpeg	mpeg

page Directive

default

3-2

Attribute	Default
language	Java
import	java.lang.*, javax.servlet.*, javax.servlet.jsp.*,

extends	javax.servlet.http.*
session	true
buffer	8kb
autoFlush	true
isThreadSafe	true
errorPage	
isErrorPage	false
info	( )
ContentType	text/html;charset=ISO-8859-1

Jsp1.2 spec final Draft

1.2 pageEncoding  
 가 . ContentType charset pageEncoding

**taglib Directive**

jsp 가 (custom tag)  
 jsp  
 TLD ( :Tag Library Descriptor) URI tag  
 prefix( )

```
<%@ taglib uri="tagLibraryURI" prefix="tagPrefix" %>
```

uri 가 (prefix)  
 jsp,jsp,java.javax,servlet,sun,sunw  
 . jsp 가  
 가 ,

```
<%@ taglib uri="WEB-INF/classes/tlds/jsp-space-taglib.tld" prefix="jsp-space" %>
...
<jsp-space:hello>
...
</jsp-space:hello>
```



가 < /> ,  
 <tag></tag> . page  
 <jsp:directive.page import="java.util.\*"></jsp:directive.page>  
 .  
 <tag> (Body)</tag>  
 가 가 가 .  
 well-formed xml 가 . xml " " " "  
 . xml jsp xml  
 (namespace) . namespace  
 . xml  
 가 . , Html  
 jsp xml .  
 Scripting Element( )  
 . 가 가 가  
 .  
 가?  
 Jsp ...

## Scripting Elements

. jsp 가  
 . 가 가

1. Expression <%= code %>
2. Scriptlets <% code %>
3. Declarations <! code %>

Expression output ,  
 Scriptlets \_jspService , Declarations  
 , 가 .  
 , 가  
 ! .  
 Jsp //,

```

/* */
Html
    . Jsp
    . Html
    <!-- -->
    가
    .

```

## Expression

```

(Expression)
    . jsp
    . Jsp
    . (wrapper) toString()
    . toString()
    . Object
    . Object toString()
    . String
    . Vector
    . java.lang.Integer
    . int
    . Expression
    . xml
    가
    .

```

```
<jsp:expression> code </jsp:expression>
```

```

    가
    . 3
    . ? :
    (value)가
    <%= (1+3)==5? "true" : "false" %>
    String
    false가
    가
    . output
    . Html
    . jsp

```

```
<a href="http://jsp.boolpae.com/expression.jsp?id=<%=Math.random()%>">
```

```

html
    . expression.jsp
    . id
    Math.random()
    . 가
    가

```

(expression)

가 (;

## Scriptlets

(

) 가

. Scriptlets xml

`<jsp:scriptlet> code </jsp:scriptlet>`

\_jspService

. Jsp가

html

\_jspService

가

(expression)

\_jspService

Declaratin( )

### Note : Servlet Life Cycle

\_jspService() 가

Life Cycle

init 가

가

. init()

. init() 가

service() 가

\_jspService() 가

jsp

가

service()

jsp

service()

Http

request

doGet, doPost,

doXXX

request

(unload)

가 destroy()

Lift cycle

jsp

init() destroy

?

"

"

(Declaration)

jspInit(), jspDestory()

## Declarations

(declaration)

jsp

\_jspService

<%! Code %>

(expression)

\_jspService

Life cycle

가

\_jspService

가

isThreadSafe

jsp

isThreadSafe

false

SingleThreadModel

xml

<jsp:declaration> code </jsp:declaration>

## Action

(action)

Jsp

(Standard)

jsp

(custom tag)

taglib

( ' ' 가

... )

<jsp:useBean> <jsp:setProperty> <jsp:getProperty>

<jsp:param> <jsp:include> <jsp:forward> <jsp:plugin>

useBean, setProperty, getProperty JavaBeans

JavaBeans chapter

<jsp:param>

include, forward, plugin 가

가

param key value

가

## <jsp:include>

include include (directive) . include  
 request time , include  
 ,( 가 include  
 ). , include  
 가 , include  
 , jsp:include  
 . List 3.9  
 includeFile 01 , includeFile 02 .

### List 3.9

```
<%-- includedFile.jsp --%>
<%! int i = 0; %>
```

```
<%-- includeFile 01 --%>
<%@ include file="includedFile.jsp" %>
<%= i %>
```

```
<%-- includeFile 02 --%>
<jsp:include page="includeFile.jsp" flush="true" />
<%= i %>
```

가 include . ,

```
<jsp:include page="relative url" flush="true" />
```

```
<jsp:include page="relative url" flush="true">
    { <jsp:param ... /> }*
</jsp:include>
```

page , flush

```

        true
    }
}

```

1.1 true 1.2final Draft

가 <jsp:param> 가

List 3.10

```

<%@ page contentType="text/html;charset=EUC-KR" %>
<HTML>
<BODY>
<center><h1> </h1></center><br>
<OL>
    <LI>include action : <jsp:include page="jspage.html" flush="true" />
    <LI>include directive <%@ include file="jspage.html" %>
</OL>
</BODY>
</HTML>

```

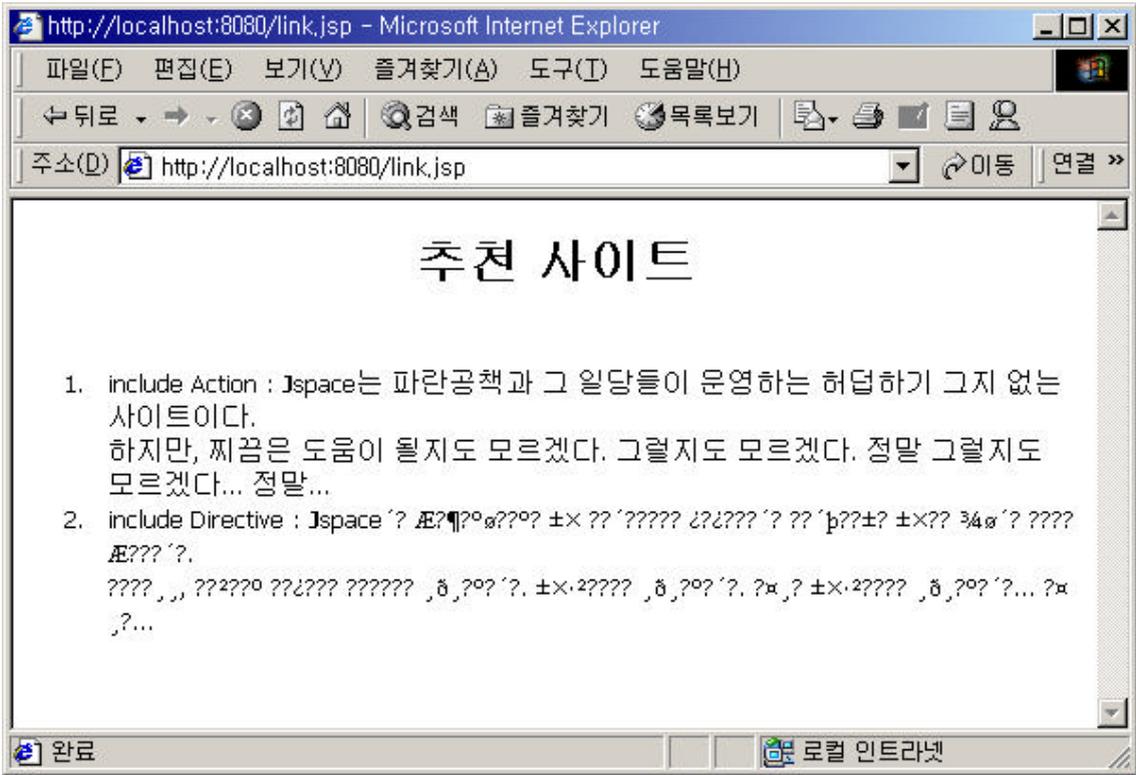
List 3.11 jspace.html

```

<B>J</B>space
.<br>

```

List 3.10 List 3.11 jspace.html include 가  
 . List 3.10 가



Tomcat-3.2.1

. Jsp                    charset                    include Action                    .  
가  
List 3.11                    "                    "                    , 3.11                    html                    "  
...                    ..."  
가  
include                    include  
(                    ,                    ! )                    가  
jsp:param

**<jsp:param>**

jsp:param                    jsp:include                    jsp:forward, jsp:plugin  
(                    3가 )

List 3.12 param.jsp

```
<HTML>
<BODY>
```



```

    jsp:param      key value
    jsp:param      key value
    jsp:forward    jsp:plugin
    
```

**<jsp:forward>**

```

jsp:forward
    jsp:forward      ( ? )
    )                가
    jsp              가
    jsp              가
    jsp:forward
    
```

```
<jsp:forward page="relativeURL" />
```

```
<jsp:forward page="relativeURL">
```

```
{ <jsp:param ... /> } *
```

```
</jsp:forward>
```

```

    jsp:param      가
    include
    jsp:param      jsp:include
    jsp:forward
    List 3.14
    
```

**List 3.14**

```

<% String desPage;
    if("yes".equalsIgnoreCase(request.getParameter("destination"))){
        desPage = "page01.jsp";
    }else{
        desPage = "page02.jsp";
    }
%>
<jsp:forward page="<%=desPage%>" />
    
```

```

    destination    yes    page01.jsp
    page02.jsp     (Expression)
    
```

**NOTE**

```

        , forward
        . jsp:forward
        ?
        javax.servlet
        RequestDispatcher
        RequestDispatcher
        ServletContext
        getRequestDispatcher()
        ...
    
```

```

String url = "page01.jsp";
RequestDispatcher dis = getServletContext().getRequestDispatcher(url);
    
```

```

getServletContext()
    javax.servlet.GenericServlet
    javax.servlet.http.HttpServlet
    GenericServlet
    getServletContext()
    가
    (
        ...
    )
    가
    getServletContext()
    ServletContext
    ServletContext
    getRequestDispatcher()
    RequestDispatcher
    
```

```

RequestDispatcher
    가
    include
    request
    (forward)
    가
    가
    
```

```

dis.forward(request, response);
    
```

```

request
    response
    request
    (jsp:param
        ) setAttribute()
    ...
    
```

```

request.setAttribute("key", "value");
    
```

```

        RequestDispatcher
        forward
        include
    가
        include
        forward
    
```

jsp 가

. jsp

servlet

가

### <jsp:plugin>

jsp

가

applet , html <applet>

<applet>

jsp:plugin

java1.2

jdk1.2

가

(?)

가

1. jdk1.2 Swing

가

가

2. Java 2D 가

3. Java2 (Collections) 가

가

가

EMBED

OBJECT

(?) . jsp:plugin

```
<jsp:plugin type="bean|applet" code="ObjectCode" codebase="ObjectCodebase"
  { align="alignment" }
  { archive="archiveList" }
  { height="height" }
  { hspace="hspace" }
```

```

{ jreversion="jreversion" }
{ name="componentName" }
{ vspace="vspace" }
{ width="width" }
{ nspluginurl="url" }
{ iepluginurl="url" }>
{ <jsp:params>
  <jsp:param name="paramName" value="paramValue" />}+
  </jsp:params> }
{ <jsp:fallback> arbitrary_text </jsp:fallback> }
</jsp:plugin>

```

- EBNF
  - 가 가 + \* 가 "
  - " + "
- type : type applet bean 가 가 applet
  - bean 가 , 가 bean
- code : class Html
  - <applet> jsp:plugin
  - jsp xml
- height :
- Width :

HTML <applet>

**Html tag**

```

<applet code="Applet01.class" width="200" height="200">
</applet>

```

**jsp:plugin Action**

```

<jsp:plugin type="applet" code="Applet01.class" width="200" height="200" />

```

- codebase :

- align : . Html image align 가
- name : . Form ...
- archive : 가 jar .
- vspace :
- hspace :
- jreversion : JRE (Default 1.1 .)
- nsplugin :
- ieplugin :

<jsp:plugin>

```

jsp:plug-in          jsp:param      jsp:params
jsp:param           jsp:params
    jsp:params
    jsp:param      name  value  html  <applet>      <param>
    가
    
```

**Html tag**

```

<applet code="Applet02.class" width="200" height="200">
  <param name="param01" value="value01">
  <parma name="param02" value="value02">
</applet>
    
```

**jsp:param / jsp:params Action**

```

<jsp:plugin type="applet" code="Applet02.class" width="200" height="200">
  <jsp:params>
    <jsp:param name="param01" value="value01"/>
    <jsp:param name="param02" value="value02"/>
  </jsp:params>
</jsp:plugin>
    
```

```

jsp:plugin          <jsp:fallback>
가
    
```

---

Chapter 3	가	1	jsp가	가	가	.
		3	hello			, 2
	jsp		jsp			.
	가		jsp			.
jsp						.
	'	'	'jsp	'	'	'

## (Implicit Object)

jsp (expression), (scriptlets) " (automatically defined variables)" , " (predefined variables)" ,

jsp가

가  
(declaration)

( 3 - , )

jsp가 \_jspService()

\_jspService()

\_jspService()

8가 가

## request

request javax.servlet.http.HttpServletRequest  
 가 . ( http  
 javax.servlet.ServletRequest  
 )  
 request request (get, post) request  
 http . javax.servlet.http.HttpServletRequest  
 API

## response

response javax.servlet.http.HttpServletResponse  
 . ( ) response  
 , 가 . 가  
 API

## out

out  
 javax.servlet.jsp.JspWriter . java.io.Writer  
 . PrintWriter , java.io.PrintWriter 가 가  
 가 . out  
 (expression)  
 jsp out out.print("xxx");  
 <%= "xxx"%>

## session

javax.servlet.http.HttpSession . jsp  
 , page (directive) session  
 false session 가  
 chapter

## application

application javax.servlet.ServletContext

Servletcontext (persistence)  
 ServletContext  
 application  
 <% application.setAttribute("key", "value"); %>

**config**

javax.servlet.ServletConfig  
 가 가

**pageContext**

jsp  
 javax.servlet.jsp.PageContext request  
 (request 가 getRequest() )

**page**

java 가 this . Jsp  
 가 가 가 가  
 java 가 가  
 8가 가 가 9가 가?  
 Exception

**exception**

page (directive) isErrorPage true jsp  
 java.lang.Throwable  
 exception isErrorPage  
 가  
 (implicit Object)

[ 4-1]

	Type	scope
Request	javax.servlet.HttpServletRequest javax.servlet.HttpServletReqeust	request
response	javax.servlet.HttpServletResponse javax.servlet.HttpServletRequest	page
pageContext	javax.servlet.jsp.PageContext	page
session	javax.servlet.http.HttpSession	session
application	javax.servlet.ServletContext	application
out	javax.servlet.jsp.JspWriter	page
config	javax.servlet.ServletConfig	page
page	java.lang.Object	page

scope

가 scope

JavaBeans

Bean scope

[ 4-3] scope

scope	
page	
request	(request) 가 page include, forward request
session	
application	(

