



JSP: JavaServer Pages

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Presentation Outline

- Introduction / Motivation
- What is JSP?
- Advantages of using JSP
- How does JSP work?
- Syntax
- Examples



Introduction / Motivation

- Need to present dynamic content to web site users for applications such as e-commerce, customized web sites, etc
- Need to be able to access database or other server-side resources
- Want to make development as fast and easy as possible

Is there a solution?



What is JSP?

Why yes, there is!

- Server-side scripting language developed by Sun Microsystems to create dynamic/interactive web content
- Scripting done by Java code embedded within static HTML using XML-like JSP tags and 'scriptlets'
- Allows for seamless integration of static HTML with server-side Java



What is JSP?

- An extension to the Servlet API:
 - Provides an abstraction above the level of the Servlet
 - Provides usage of the same core features and services
 - Allows integration with existing Java classes and JavaBeans



Advantages

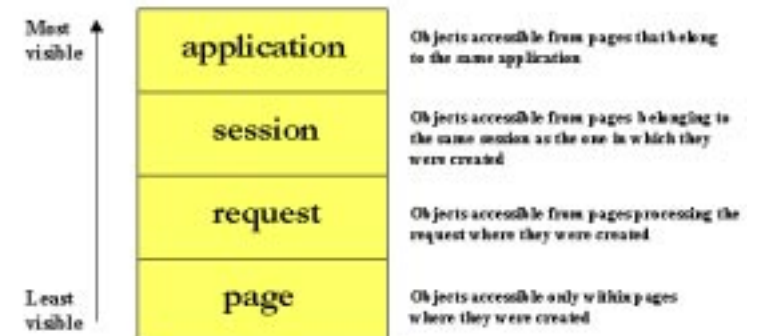
- JSP programming is easy!
(For anyone familiar with HTML and Java)
- No need to explicitly compile
- Can be deployed on virtually any platform; only requires Apache web server and Tomcat
- Allows separation of dynamic and static content



Process



Scope





Synchronization

- Default – Servlets instantiated only once
- Multithreaded to serve multiple instances
- Shared class variables, concurrence problems
- `<%@ page is ThreadSafe = "false" %>`
 - Slow round robin service



Syntax

- **Expressions**
Expression is evaluated and placed in output
`<%= expression %>`
`<%= new java.util.Date() %>`
- **Scriptlets**
Code is inserted in service method.
`<% code %>`



Syntax

- **Declarations**
Code is inserted in body of servlet class, outside of service method.
`<%! code %>`
`<%! private int accessCount = 0; %>`
- **Directives**
Messages that enable the programs to set the overall structure of the resulting servlet.
`<%@ settings %>`



Syntax

- **Page Directives**
Directions to the servlet engine about general setup.
`<%@ page att="val" %>`
`<%@ page import ="java.util.*" %>`
- **Include Directives**
A file is inserted when the JSP page is translated.
`<%@ include file="Relative url" %>`



Syntax

- **Actions**

Predefined tasks that are processed by the JSP container at request time.

- **<jsp:include> Action**

Includes a file at the time the page is requested.

```
<jsp: include page="banner.html" flush = "true" />
```



Syntax

- **<jsp:useBean> Action**

Declares a Java Bean instance for use in the JSP page.

```
<jsp:useBean id="courseBean"  
class="coursepack.CourseListBean" />
```



Syntax

- **<jsp: getProperty> Action**

Gets a property in the specified JavaBean instance.

```
<jsp:getProperty name="courseBean"  
property="courseColor" />
```

- Equivalent to expression:

```
<%= courseBean.getCourseColor(courseNumber) %>
```



Syntax

- **<jsp: setProperty> Action**

Sets a property in the specified JavaBean instance.

```
<jsp:setProperty name="courseBean"  
property="courseColor" value="blue" />
```

- Equivalent to expression:

```
<%= courseBean.setCourseColor("red") %>
```