

1. What is the main value of Java Server Pages?

JavaServer Pages (JSP) are a technology for developing web pages that support dynamic content, allowing developers to insert java code in HTML pages by making use of special JSP tags, most of which start with `<%` and end with `%>`.

2. How are JSP pages related to servlets?

JavaServer Pages (JSPs) are a specification for combining Java with HTML to provide dynamic content for Web pages. When you create dynamic content, JSPs are more convenient to write than HTTP servlets because they allow you to embed Java code directly into your HTML pages, in contrast with HTTP servlets, in which you embed HTML inside Java code.

3. How are JSP pages related to HTML?

HTML stands for HyperText Markup Language. It is a well known mark up language used to develop web pages. JSP is mainly used to develop dynamic web pages. The JSP technology allows for fast development and easy maintenance of the said information-rich, dynamic web pages. JSP web pages are based on HTML, XML, or other document types.

4. Give an example of a JSP scriptlet and show how it will look in the JSP servlet .

Scriptlet Inserts Java statements inside service method

```
<% Java statements %>
```

```
<% count = count * 10; %>
```

```
<% inserts into the service method
```

5. Give an example of a JSP declaration and show how it will look in the JSP servlet

<%! Inserts instance variable and method declarations into servlet

```
<%! Java declaration statements %>
```

```
<%! int count = 0; %>
```

```
<%@ page import="java.util.Date" %>
```

6. Give an example of a JSP comment and show how it will look in the JSP servlet.

```
<%-- jsp comment --%>
```

7. Give an example of a JSP expression and show how it will look in the JSP servlet.

```
<%= Java expression %>
```

wraps it inside a print statement

```
<%= ++count %> becomes ... out.print( ++count );
```

8. Give an example of a JSP directive and show how it will look in the JSP servlet.

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

<%@ include file="relative url" >

<%@ taglib uri="uri" prefix="prefixOfTag" >

9. Explain how an EL expression is evaluated.

`${something}`

container evaluates this as follows

checks page scope for an attribute named "something",

if found use it otherwise check request scope for an attribute named "something",

if found use it. otherwise check session scope for an attribute named "something",

if found use it otherwise check application scope for an attribute named "something",

if found use it. otherwise ignore the expression.

10. Explain how servlet attributes are involved in EL expressions.

the `HttpServletRequest` object associated with the request

response – the `HttpServletResponse` object associated with the response

out the `PrintWriter` used to send output to browser

session the `HttpSession` object associated with the request

application the `ServletContext` obtained via `getServletConfig()`

config the `ServletConfig` object

pageContext the `PageContext` object to get values from and store attributes into any of the other contexts (request, session, servletContext)

11. Explain how servlets and JSPs use request dispatch to interact.

When you use JSP pages according to a Model 2 architecture, there is a servlet that acts as a controller (process of knowing) that sets attribute values based on computations and results from a business model, then dispatches the request to the servlet generated by the JSP page. The JSP servlet then retrieves the attribute values and inserts them into the designated places in the HTML being sent to the browser