

JavaServer Page (JSP)

**BUILDING STRONGER FOUNDATION
FOR SPRING BOOT**

ROHAN THAPA

thaparohan2019@gmail.com

What is JSP?

JavaServer Pages (JSP) is a technology that allows developers to create dynamically generated web pages using **HTML**, **Java code**, and other elements.

It's essentially a simplified way to create web content by **embedding Java code directly** into **HTML** pages.

Why Learn JSP?

- **Foundation for Spring MVC:** JSP is often used as a **view technology** in **Spring MVC** applications. Understanding JSP helps grasp the underlying mechanisms of how views are rendered in Spring Boot applications.
- **Dynamic Content Generation:** JSP allows for the creation of dynamic web content, where Java code can manipulate and present data on the fly.
- **Legacy Support:** Many existing **Java web applications** still use **JSP**, making it valuable to **understand for maintaining and upgrading** these systems.

How JSP Works:

- **Compilation to Servlet:** When a JSP page is requested, the web server compiles it into a Servlet class.
- **Servlet Execution:** The generated Servlet processes the request, executes embedded Java code, and generates dynamic content.
- **HTML Output:** The result is sent back to the client as an **HTML page**, providing a seamless user experience.

Core Components of JSP

Directives: Instructions to the **JSP engine**.

Common directives include:

- **<%@ page %>**: Defines page-level settings like content type.
- **<%@ include %>**: Includes a file during the page translation phase.
- **<%@ taglib %>**: Declares a custom tag library.

Scriptlets: Java code embedded within HTML using **<% %>** tags. Example

```
<%  
    int sum = 10 + 20;  
    out.println("Sum is: " + sum);  
%>
```

Core Components of JSP

Expressions: Shortcuts for outputting Java expressions using `<%= %>` tags.

```
<p>The sum is: <%= 10 + 20 %></p>
```

Declarations: Define methods or variables that can be reused in the JSP page.

```
<%! int add(int a, int b) { return a + b; } %>
```

JSP Action Tags: Predefined actions that JSP can perform, like including content from another resource (`<jsp:include>`).

JSP vs. Modern Alternatives:

While **JSP** was a **game-changer** in early Java web development, modern frameworks like **Spring Boot** have largely replaced it with more **sophisticated** and **maintainable approaches** like **Thymeleaf**.

However, JSP remains relevant in understanding the evolution of Java web technologies.

Thank You

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