

# Servlet and JSP



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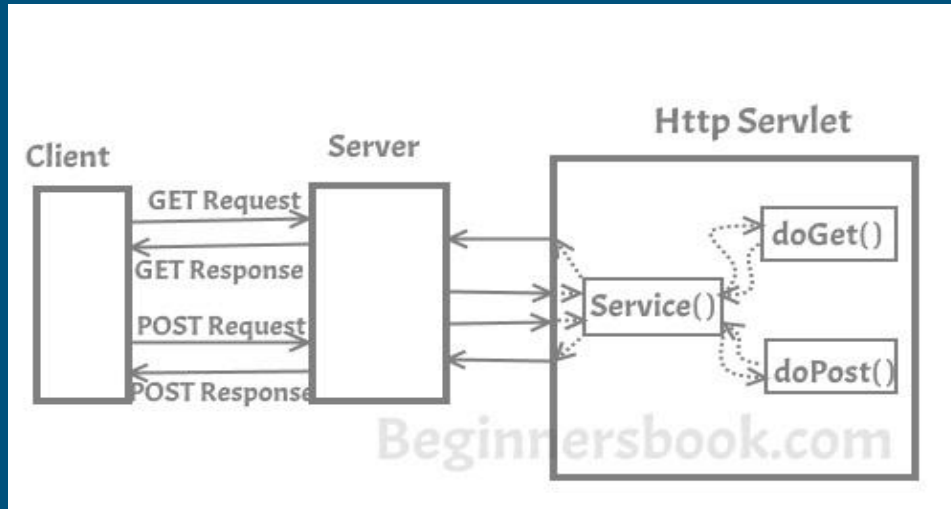
# Web Services

- ★ What is a Servlet?
  - ★ What is a web application?
  - ★ HttpServlet class.
  - ★ What is JSP?
  - ★ The Directory structure of JSP.
  - ★ JSP tag OR Scripting elements.
  - ★ Advantages of JSP over Servlets?
  - ★ What are the limitations of JSP?
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# ★ What is a Servlet?

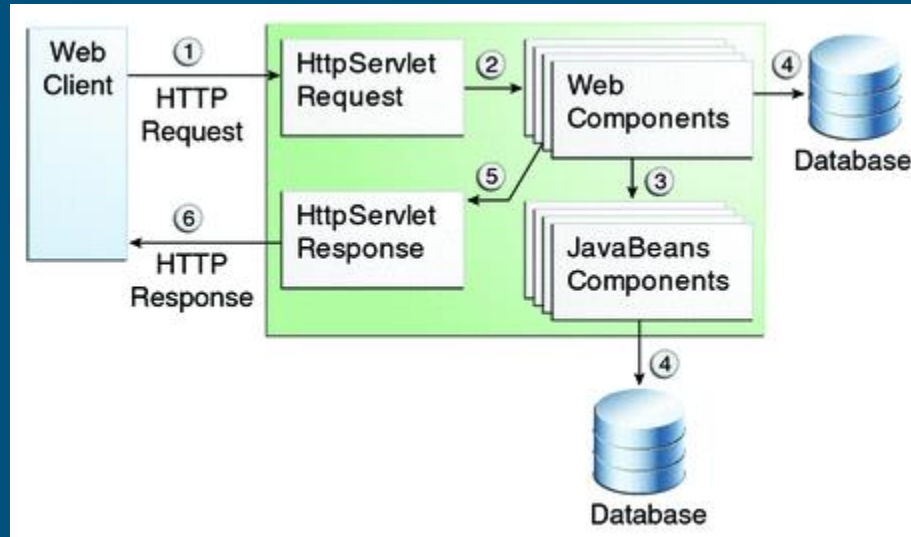
Servlet is a technology which is used to create a web application.

- ★ Servlet is an API that provides many interfaces and classes including documentation.
- ★ Servlet is an interface that must be implemented for creating any Servlet.
- ★ Servlet is a class that extends the capabilities of the servers and responds to the incoming requests. It can respond to any requests.
- ★ Servlet is a web component that is deployed on the server to create a dynamic web page.



## ★ What is a web application?

- A web application is an application accessible from the web. A web application is composed of web components like Servlet, JSP, Filter, etc. and other elements such as HTML, CSS, and JavaScript. The web components typically execute in Web Server and respond to the HTTP request.



## ★ HttpServlet class.

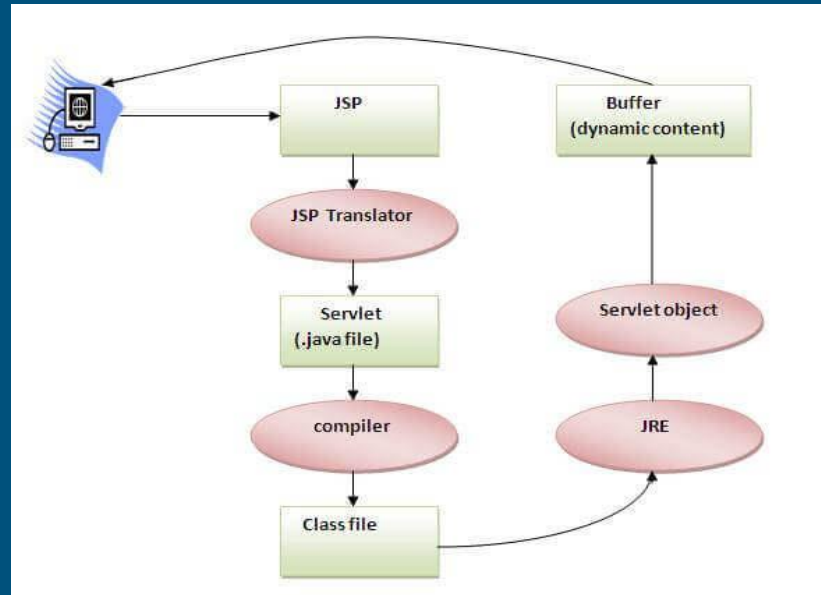
- The HttpServlet class extends the GenericServlet class and implements Serializable interface. It provides http specific methods such as doGet, doPost, doHead, doTrace etc.

## ★ What is a JSP and It's Life Cycle?

JSP technology is used to create web application just like Servlet technology. It can be thought of as an extension to Servlet because it provides more functionality than servlet such as expression language, JSTL, etc.

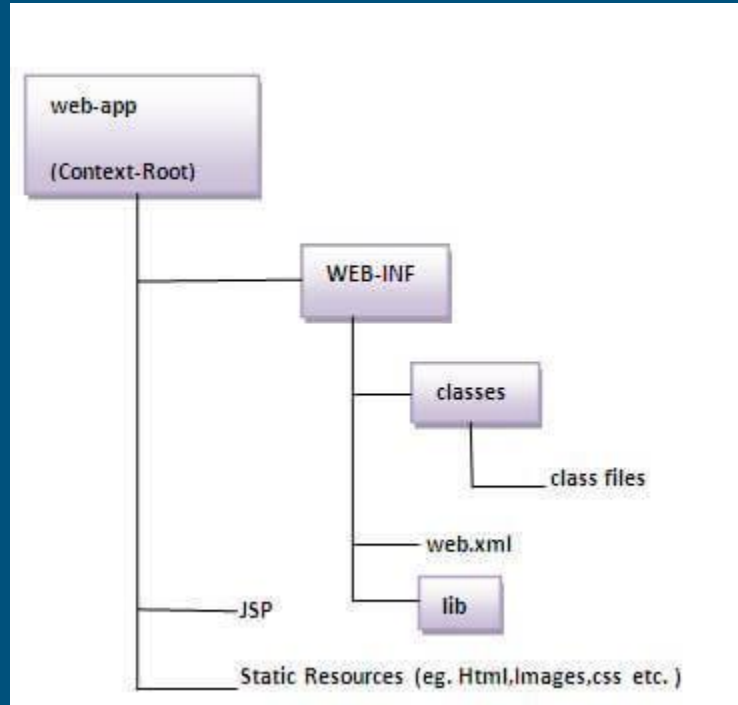
A JSP page consists of HTML tags and JSP tags. The JSP pages are easier to maintain than Servlet because we can separate designing and development. It provides some additional features such as Expression Language, Custom Tags, etc.

The Lifecycle of a JSP Page :-



## ★ The Directory structure of JSP.

The directory structure of JSP page is same as Servlet. We contain the JSP page outside the WEB-INF folder or in any directory.



## ★ JSP tag OR Scripting elements.

The scripting elements provides the ability to insert java code inside the jsp. There are three types of scripting elements:

- 1] scriptlet tag
- 2] expression tag
- 3] declaration tag

### 1] JSP scriptlet tag :-

A scriptlet tag is used to execute java source code in JSP. Syntax is as follows:

```
<% java source code %>
```

### 2] expression tag

The code placed within JSP expression tag is written to the output stream of the response. So you need not write out.print() to write data. It is mainly used to print the values of variable or method.

```
<%= statement %>
```

### 3] declaration tag

The JSP declaration tag is used to declare fields and methods.

```
<%! field or method declaration %>
```



## ★ Advantages of JSP over Servlets?

- 1] In a JSP page visual content and logic are separated, which is not possible in a servlet.
- 2] There is automatic deployment of a JSP, recompilation is done automatically when changes are made to JSP pages.
- 3] Servlets use `println` statements for printing an HTML document which is usually very difficult to use. JSP has no such tedious task to maintain.

## ★ What are the limitations of JSP over Servlet?

Well, if you compare Servlet and JSP, I don't see any limitations with JSP.

Actually you can do everything with in a JSP which you can do using a servlet and vice versa.

With servlets, first it is very hard to write a very long HTML code as you need to write everything inside `writer.print` function.

Second when you are working on UI part, after every small change you need to see if it is looking as expected. With servlets it was a pain, you have to compile them after every little fix as it is a java class.

JSPs were introduced to overcome above issues, to manage the view part very easily while having access to various Java objects. They are pre-compiles by the web server environment, you don't have to compile them manually. Also, you can write the Java code also as you used to do inside a servlet.

Thank you

