

Lifecycle of a JSP page

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1. Just like a Servlet has a specific lifecycle, similarly a JSP page also has a lifecycle.

2. There are 7 phases in the life of a JSP page and they are:

a) Translating Phase: This occurs on the first request when container translate our .jsp page into a Servlet as .java file.

b) Compiling Phase: This also occurs on the first request when the .java file gets converted into .class file.

c) Loading Phase: This also occurs during the first request when the container load .class file into Server's memory.

d) Instantiation Phase: This also occurs during the first request when the container instantiate i.e. creates an object of the Servlet class.

e) Initialization Phase: Like others this phase also occurs during the first request and in this phase the container calls the method `jspInit()`.

f) Request processing Phase: This phase occurs on every request and the container calls the method `_jspService()` in this phase.

g) Destroying Phase: This is the last phase in the lifecycle of the JSP page and it occurs when the Server is restarted or shutdown. In this phase the container calls the method `jspDestroy()` before removing the Servlet's object from memory.

JSP Elements

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1. The main purpose of JSP is to make our page dynamic.

2. To make a page dynamic we should be able to add **Java code inside our JSP page** and this is done with the help of tags also called as JSP tags.

3. Following are 4 popular types of JSP tags which we can use in a JSP page:

- a) Scriptlet tag
- b) Declarative tag
- c) Expression tag
- d) Directive tag

a) Scriptlet tag

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1. **Scriptlets** are JSP tags which allow us to insert **pure Java code** in the body of our JSP page.

2. Whatever Java code we write in a scriptlet gets pasted in the body of **_jspService()** method by our container. So, we must remember that any statement which **Java allows** in method body is **valid** in a scriptlet and any statement which **Java prohibits** in a method body is **invalid** for a scriptlet.

3. Syntax

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```
<%  
    //Pure Java code  
%>
```

Displaying Current Date And Time Using scriptlet

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```
<!DOCTYPE html>  
<html lang="en">  
  <head>  
    <title>display Date And Time</title>  
    <style>  
      h3 {  
        color: darkblue;  
        font-family: Verdana, Geneva, Tahoma, sans-serif;  
      }  
    </style>  
  </head>  
  <body>  
    <%  
      java.util.Date today=new java.util.Date();  
      out.println("<h3>Current date and time:"+today+"</h3>");  
    %>  
  </body>  
</html>
```

This is a pre-defined object provided to us by container and belongs to the class `JspWriter`. The main purpose of out is to help the programmer display output on window for browser Jsp page

WAJSP page which displays your name in all six headings