

SERVLETS PART-2

CGI Vs Servlets:

- 1) CGI is a specification for developing web applications with C, C++, Perl, .. etc.,
- 1) Servlets is a specification for developing web applications with Java programming language only.
- 2) CGI Based web server creates a new process for every request.
- 2) Servlets based web server creates a new process for first request only.

Servlets do not have main() method because servlet runs under server.

There are life cycle methods to run servlet under server.

Life Cycle Methods:

- 1) init() method
- 2) service() method
- 3) destroy() method

init() method called by web container whenever first request comes to a servlet.

service() method called by web container for every request.

destroy() method called by web container whenever servlet instance is removed from web container.

Servlet instance is removed from web container whenever web application is undeployed from server or server shuts down.

The above life cycle methods are the part of javax.servlet.Servlet interface.

Every servlet must implements javax.servlet.Servlet interface to derive life cycle.

Every servlet class must be public because it should be accessible to web container to create an object to call life cycle methods.

Steps to develop web application:

- 1) Create a web application folder structure.
- 2) Create and compile web application source code(Servlet Program).
- 3) Write deployment descriptor(web.xml file)
- 4) Create a WAR(Web ARchive) file
- 5) Start the Web Server or Application Server
- 6) Deploy a WAR file on Server

javax.servlet.Servlet

Methods:

```
public abstract void init(ServletConfig) throws ServletException;
```

```
public abstract ServletConfig getServletConfig();
```

```
public abstract void service(ServletRequest, ServletResponse)
```

```
throws ServletException, IOException;
```

```
public abstract String getServletInfo();
```

```
public abstract void destroy();
```

Servlets API:

- 1) javax.servlet package
- 2) javax.servlet.http package

javax.servlet package

Classes

- 1) GenericServlet
- 2) ServletInputStream
- 3) ServletOutputStream
- 4) ServletException
- 5) UnavailableException

Interfaces

- 1) Servlet
- 2) ServletRequest
- 3) ServletResponse
- 4) ServletConfig
- 6) ServletContext
- 7) RequestDispatcher
- 8) SingleThreadModel

javax.servlet.http package

Classes

- 1) HttpServlet
- 2) Cookie

Interfaces

- 1) HttpServletRequest
- 2) HttpServletResponse
- 3) HttpSession

Servlets API is a part of servlet-api.jar file in a tomcat server.

servlet-api.jar file location:

C:\Program Files\Apache Software Foundation\Tomcat 9.0\lib

FirstServlet.java

```
import java.io.*;
import javax.servlet.*;

public class FirstServlet extends GenericServlet
{
    public void service(ServletRequest req, ServletResponse res)
    {
        try{
            PrintWriter pw=res.getWriter();
            pw.println("Welcome to Servlets");
        }catch(Exception e)
        {
            System.err.println(e);
        }
    }
}
```

web.xml

```
<web-app>
<servlet>
<servlet-name>demo</servlet-name>
<servlet-class>FirstServlet</servlet-class>
</servlet>
```

```
<servlet-mapping>  
<servlet-name>demo</servlet-name>  
<url-pattern>/test</url-pattern>  
</servlet-mapping>  
</web-app>
```

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