

JSP Part 02

Tom cat installation

- Download jdk:
jdk-19_windows-x64_bin.msi
- Download tomcat:
apache-tomcat-10.0.26-windows-x64.zip
OR
apache-tomcat-10.0.26.exe
I prefer zip version

Step 1: Download Tomcat for Windows



Apache Tomcat® - Welcome! x +

tomcat.apache.org

Apache Tomcat®

Search... GO

Apache Tomcat

Home

Taglibs

Maven Plugin

Download

Which version?

Tomcat 10

Tomcat 9

Tomcat 8

Tomcat Migration Tool
for Jakarta EE

Tomcat Connectors

Tomcat Native

Taglibs

Archives

The Apache Tomcat® software is an open source implementation of the [Jakarta Servlet](#), [Jakarta EE platform](#).

The Jakarta EE platform is the evolution of the Java EE platform. Tomcat 10 and later imple...

The Apache Tomcat software is developed in an open and participatory environment and invite you to participate in this open development project. To learn more about getting involved...

Apache Tomcat software powers numerous large-scale, mission-critical web applications and...

Apache Tomcat, Tomcat, Apache, the Apache feather, and the Apache Tomcat project logo...

Tomcat 10.0.16 Released

The Apache Tomcat Project is proud to announce the release of version 10.0.16 of Apache...

Applications that run on Tomcat 9 and earlier will not run on Tomcat 10 without changes.

A red arrow points from the "Tomcat 10" link in the sidebar to the "Tomcat 10.0.16 Released" section in the main content area.

Tomcat 10.1 (alpha)
Tomcat 10.0
Tomcat 9.0
Tomcat 8.5
Tomcat Connectors
Tomcat Native
Wiki
Migration Guide
Presentations
Specifications

Problems?

Security Reports
Find help
FAQ
Mailing Lists
Bug Database
IRC

Get Involved

Overview
Source code
Buildbot
Translations
Tools

Media

Twitter

You are currently using <https://dlcdn.apache.org/>. If you encounter a problem with this

Other mirrors: <https://dlcdn.apache.org/>

10.0.16

Please see the [README](#) file for packaging information. It explains what every distribution

Binary Distributions

- Core:
 - [zip \(pgp, sha512\)](#)
 - [tar.gz \(pgp, sha512\)](#)
 - [32-bit Windows zip \(pgp, sha512\)](#)
 - [64-bit Windows zip \(pgp, sha512\)](#)
 - [32-bit/64-bit Windows Service Installer \(pgp, sha512\)](#)
- Full documentation:
 - [tar.gz \(pgp, sha512\)](#)
- Deployer:
 - [zip \(pgp, sha512\)](#)
 - [tar.gz \(pgp, sha512\)](#)
- Embedded:
 - [tar.gz \(pgp, sha512\)](#)
 - [zip \(pgp, sha512\)](#)



Source Code Distributions

Set Environment variables

System Properties

X

Computer Name Hardware Advanced System Protection Remote

You must be logged on as an Administrator to make most of these changes.

Performance

Visual effects, processor scheduling, memory usage, and virtual memory

Settings...

User Profiles

Desktop settings related to your sign-in

Settings...

Startup and Recovery

System startup, system failure, and debugging information

Settings...

Environment Variables...

OK

Cancel

Apply

Environment Variables

User variables for alphapeeler

Variable	Value
OneDrive	C:\Users\alphapeeler\OneDrive
Path	C:\Users\alphapeeler\AppData\Local\Microsoft\WindowsApps;

Edit System Variable

Variable name:

JAVA_HOME

Variable value:

D:\Program Files\Java\jdk-19

[Browse Directory...](#)

[Browse File...](#)

[OK](#)

[Cancel](#)

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
JAVA_HOME	D:\Program Files\Java\jdk-19
NUMBER_OF_PROCESSORS	4
OS	Windows_NT
Path	D:\Program Files\Java\jdk-19\bin;C:\Program Files\Common F...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTURE	AMD64
PROCESSOR_IDENTIFIER	Intel(R) Core(TM) i7-11370H CPU @ 2.80GHz

[New...](#)

[Edit...](#)

[Delete](#)

[OK](#)

[Cancel](#)

Edit environment variable

X

D:\Program Files\Java\jdk-19\bin
C:\Program Files\Common Files\Oracle\Java\javapath
%SystemRoot%\system32
%SystemRoot%
%SystemRoot%\System32\Wbem
%SYSTEMROOT%\System32\WindowsPowerShell\v1.0\

New

Edit

Browse...

Delete

Move Up

Move Down

Edit text...

OK

Cancel

Configure Tomcat

- 1. After downloading the **32bit/64bit Windows zip file**, depending on your Windows version, **unzip** the downloaded file. Right-click the file and select **Extract all...**
- 2. Choose where to extract the archive contents. For easier navigation, we recommend extracting it to the hard drive's root. Optionally, give the directory a shorter name to facilitate server configuration later. Click **Extract** to start the process.
- 3. Navigate to the **conf** sub-directory within the extracted directory and locate the **server.xml** file.

- 4. The default connection port is 8080. To choose a different port, edit the server.xml file with a text editor, such as Notepad++, and locate the following lines:

```
<Connector port="8080" protocol="HTTP/1.1"  
connectionTimeout="20000" redirectPort="8443" />
```

- Change the connector port number to any number between 1024 and 65535.

- 5. To enable directory browsing, locate the web.xml file in the conf directory and edit the file with a text editor.
Directory browsing helps when testing the system, and sometimes it may be the solution for a 403 forbidden error.
- Locate the following lines and change the listings value from false to true:

```
<servlet>
  <servlet-name>default</servlet-name>
  <servlet-class>org.apache.catalina.servlets.DefaultServlet</servlet-class>
  <init-param>
    <param-name>debug</param-name>
    <param-value>0</param-value>
  </init-param>
  <init-param>
    <param-name>listings</param-name>
    <param-value>false</param-value>
  </init-param>
  <load-on-startup>1</load-on-startup>
</servlet>
```

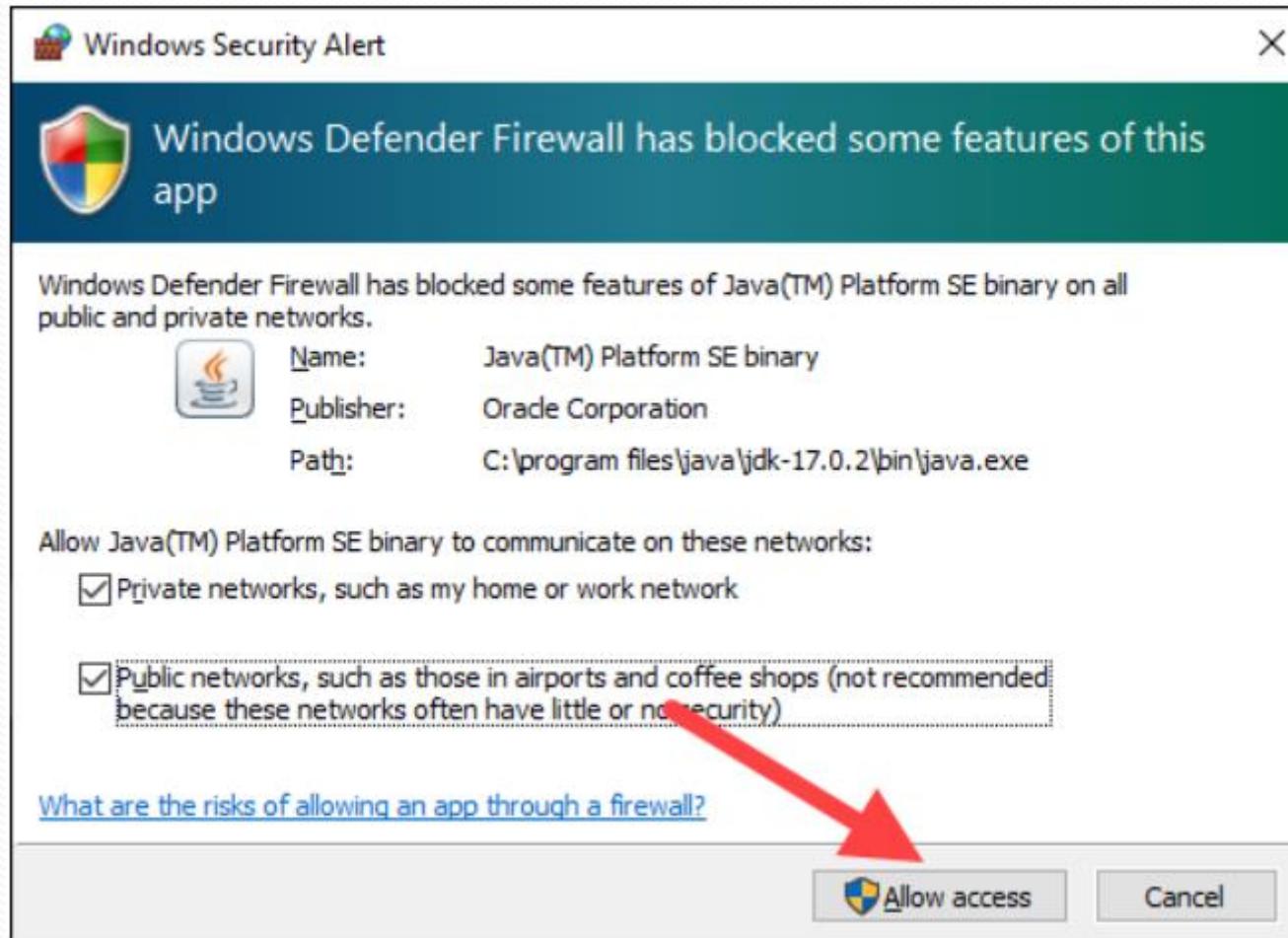
- 6. Implement an auto-reload feature by editing the context.xml file. Above all, auto-reload is useful in development to prevent restarting the server manually each time a change is made.
- Using a text editor, open the context.xml file. Locate the following line and change the value from false to true in each instance:

```
<Context reloadable="false" crossContext="false"  
parallelAnnotationScanning="false">  
.....  
.....  
</Context>
```

- 7. After making the changes, start the server. Press the Windows key and type cmd. Press Enter to open a Command Prompt window.
- 8. Move to the bin directory of your Tomcat server and run:

```
C:\Users\marij>cd c:\tomcat\bin  
  
c:\tomcat\bin>startup  
Using CATALINA_BASE: "c:\tomcat"  
Using CATALINA_HOME: "c:\tomcat"  
Using CATALINA_TMPDIR: "c:\tomcat\temp"  
Using JRE_HOME: "C:\Program Files\Java\jdk-17.0.2"  
Using CLASSPATH: "c:\tomcat\bin\bootstrap.jar;c:\tomcat\bin\tomcat-juli.jar"  
Using CATALINA_OPTS: ""  
c:\tomcat\bin>
```

- 8. Add an exception for Tomcat in the firewall:



- 9. A new Tomcat console window appears. This console receives error messages and system.out.println() messages issued by the Java servlets.

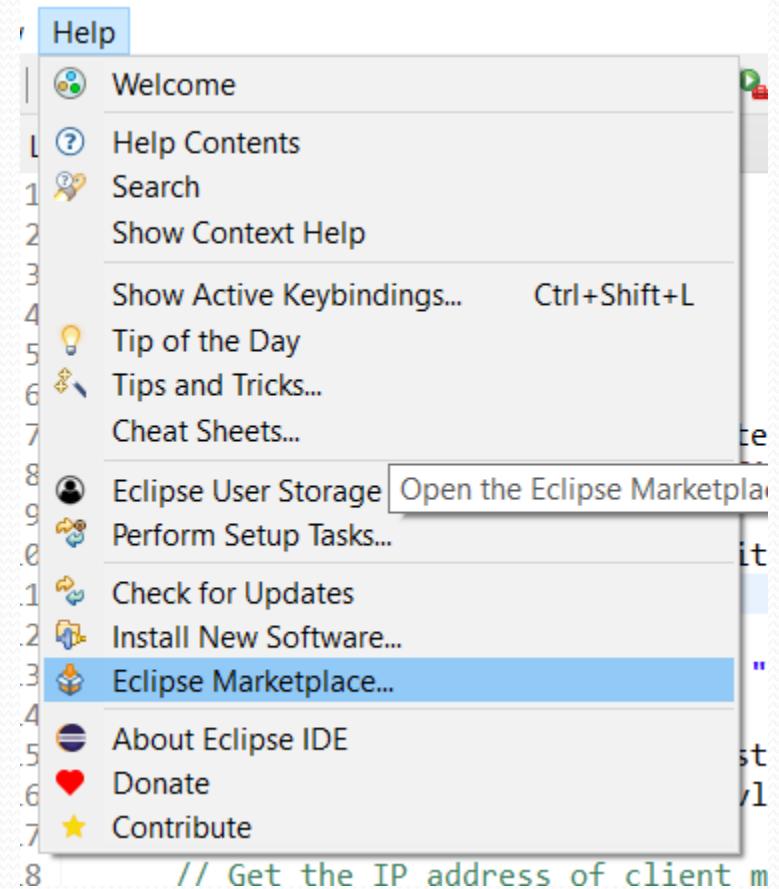
```
Tomcat - X
10-Feb-2022 16:25:37.580 INFO [main] org.apache.catalina.startup.Catalina.load Server initialization in [490] milliseconds
10-Feb-2022 16:25:37.627 INFO [main] org.apache.catalina.core.StandardService.startInternal Starting service [Catalina]
10-Feb-2022 16:25:37.627 INFO [main] org.apache.catalina.core.StandardEngine.startInternal Starting Servlet engine: [Apache Tomcat/10.0.16]
10-Feb-2022 16:25:37.638 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\tomcat\webapps\docs]
10-Feb-2022 16:25:37.947 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\tomcat\webapps\docs] has finished in [308] ms
10-Feb-2022 16:25:37.947 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\tomcat\webapps\examples]
10-Feb-2022 16:25:38.476 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\tomcat\webapps\manager]
10-Feb-2022 16:25:38.520 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\tomcat\webapps\manager] has finished in [44] ms
10-Feb-2022 16:25:38.521 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\tomcat\webapps\ROOT]
10-Feb-2022 16:25:38.551 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\tomcat\webapps\ROOT] has finished in [30] ms
10-Feb-2022 16:25:38.554 INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["http-nio-8080"]
10-Feb-2022 16:25:38.648 INFO [main] org.apache.catalina.startup.Catalina.start Server startup in [1068] milliseconds
```

JSP Part 02

Eclipse Setup

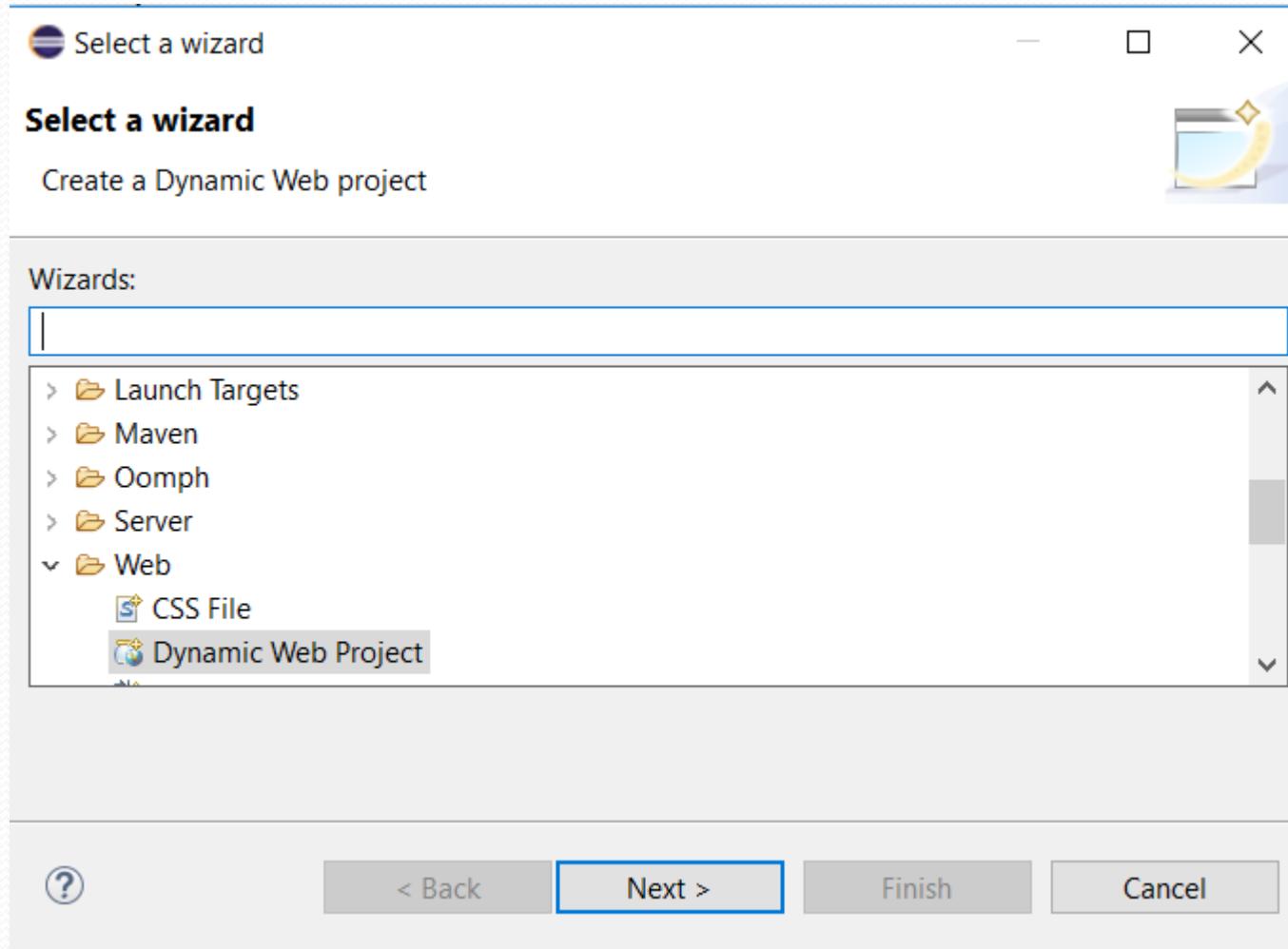
Install Eclipse web developer tools

- Goto eclipse market place and searh for JSP.
- Install Eclipse web developer tools



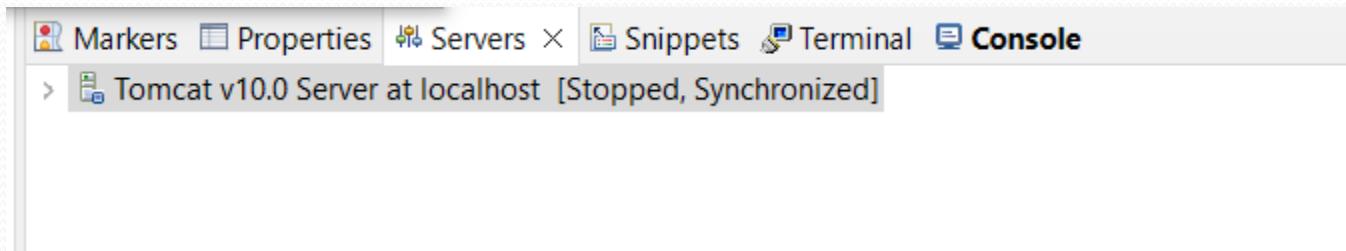
Dynamic Web Project

- After installing web developers tools , you will be able to see Dynamic web project in eclipse:



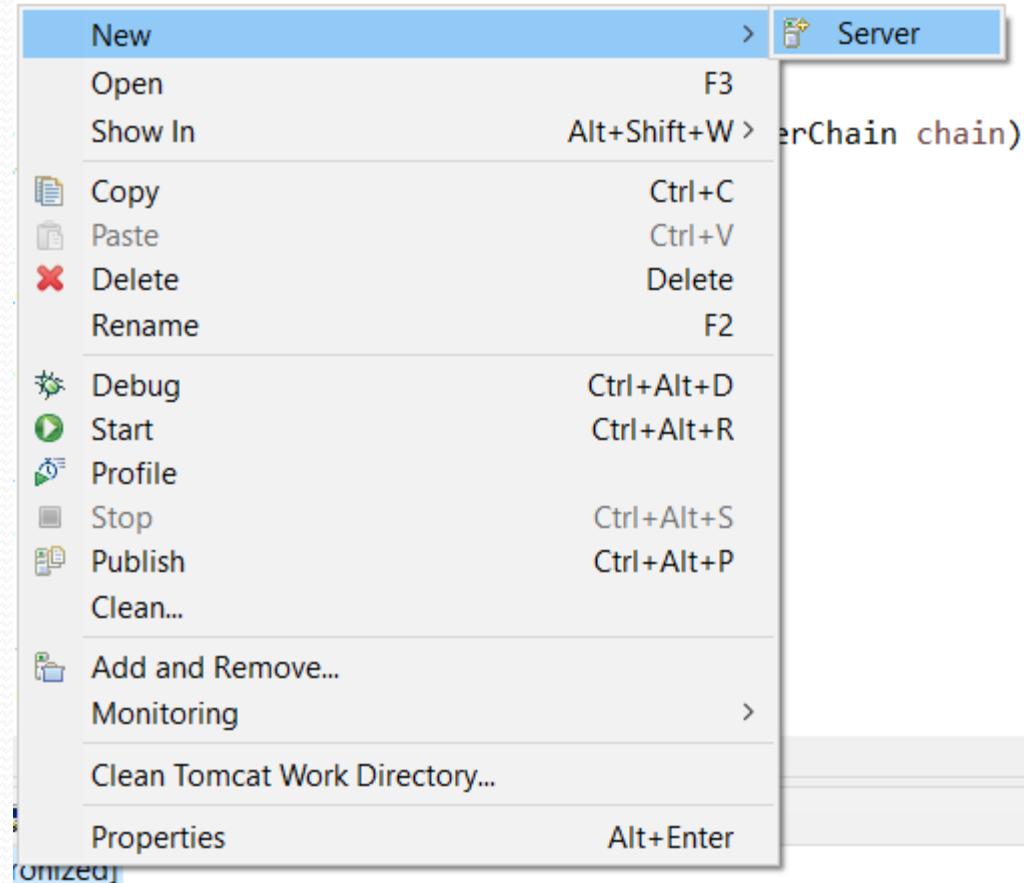
Add Servers in Eclipse

- When a new project is created, you wont see any servers in the servers list in eclipse.
- When you add tomcat server it will be listed in the list of servers:



Add new server

- If you want to add a new server right click and add new:





Define a New Server

Choose the type of server to create



Select the server type:

type filter text

▼ Apache

- Tomcat v3.2 Server
- Tomcat v4.0 Server
- Tomcat v4.1 Server
- Tomcat v5.0 Server
- Tomcat v5.5 Server
- Tomcat v6.0 Server

Server's host name:

localhost

Server name:



< Back

Next >

Finish

Cancel



Define a New Server

Choose the type of server to create



Select the server type:

type filter text

- Tomcat v8.5 Server
- Tomcat v9.0 Server
- Tomcat v10.0 Server
- > Basic
- > IBM
- > Oracle
- > Red Hat

Publishes and runs J2EE, Java EE, and Jakarta EE Web projects and server configurations to a local Tomcat server.

Server's host name:

localhost

Server name:

Tomcat v10.0 Server at localhost (2)

Server runtime environment:

Apache Tomcat v10.0

[Add...](#)

[Configure runtime environments...](#)



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Next >

Finish

Cancel

Preferences (Filtered)

type filter text X

Server

Runtime Environments

Add, remove, or edit server runtime environments.

Server runtime environments:

Name	Type
Apache Tomcat v10.0	Apache Tomcat v10.0

Add... Edit... Remove Search... Columns...

D:/apache-tomcat-10.0.26

?

Apply and Close Cancel

Edit Server Runtime Environment

Tomcat Server

Specify the installation directory



Name:

Apache Tomcat v10.0

Tomcat installation directory:

D:\apache-tomcat-10.0.26

Browse...

apache-tomcat-10.0.20

Download and Install...

JRE:

Workbench default JRE

Installed JREs...



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Next >

Finish

Cancel



Define a New Server

Choose the type of server to create



Select the server type:

type filter text

- Tomcat v8.5 Server
- Tomcat v9.0 Server
- Tomcat v10.0 Server
- > Basic
- > IBM
- > Oracle
- > Red Hat

Publishes and runs J2EE, Java EE, and Jakarta EE Web projects and server configurations to a local Tomcat server.

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localhost

Server name:

Tomcat v10.0 Server at localhost (2)

Server runtime environment:

Apache Tomcat v10.0

[Add...](#)

[Configure runtime environments...](#)



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Next >

Finish

Cancel



Add and Remove

Modify the resources that are configured on the server

Move resources to the right to configure them on the server

Available:

-  Cookies
-  GenericServletLogin
-  JSP
-  JSPBEAN
-  Login
-  SCDFa22_jsp_14_ex01_LogFilter

Configured:

Add >

< Remove

Add All >>

<< Remove All



< Back

Next >

Finish

Cancel

Overview

General Information

Specify the host name and other common settings.

Server name:

Host name:

Runtime Environment:

Configuration path:

[Open launch configuration](#)

Server Locations

Specify the server path (i.e. catalina.base) and deploy path. Server must be published with no modules present to make changes.

- Use workspace metadata (does not modify Tomcat installation)
- Use Tomcat installation (takes control of Tomcat installation)
- Use custom location (does not modify Tomcat installation)

Server path:

[Set deploy path to the default value \(currently set\)](#)

Deploy path:

Server Options

Enter settings for the server.

- Serve modules without publishing
- Publish module contexts to separate XML files
- Modules auto reload by default
- Enable security
- Enable Tomcat debug logging (not supported by this Tomcat version)

Publishing

Timeouts

Ports

Modify the server ports.

Port Name
<input type="text" value="Tomcat admin port"/>
<input type="text" value="HTTP/1.1"/>

MIME Mappings

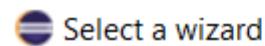
[Overview](#) [Modules](#)

[Markers](#) [Properties](#) [Servers](#) [Snippets](#) [Terminal](#) [Console](#)

- > [Tomcat v10.0 Server at localhost \[Stopped, Synchronized\]](#)
- > [Tomcat v10.0 Server at localhost \(2\) \[Stopped, Republish\]](#)



Create a new project



Select a wizard

Create a Dynamic Web project



Wizards:

- > Launch Targets
- > Maven
- > Oomph
- > Server
- > Web
 - CSS File
 - Dynamic Web Project



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Next >

Finish

Cancel



Dynamic Web Project

Create a standalone Java-based Web Application or add it to a new or existing Enterprise Application.

Project name:

Project location

Use default location

Location:

Target runtime

Dynamic web module version

Configuration

A good starting point for working with Apache Tomcat v10.0 runtime. Additional facets can later be installed to add new functionality to the project.

EAR membership

Add project to an EAR

EAR project name:

Working sets

Add project to working sets

Working sets:



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Next >

Finish

Cancel

New Dynamic Web Project

Java

Configure project for building a Java application.



Source folders on build path:

 src\main\java

Add Folder...

Edit...

Remove

Default output folder:

build\classes

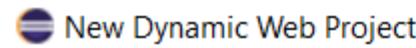


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Next >

Finish

Cancel



Web Module

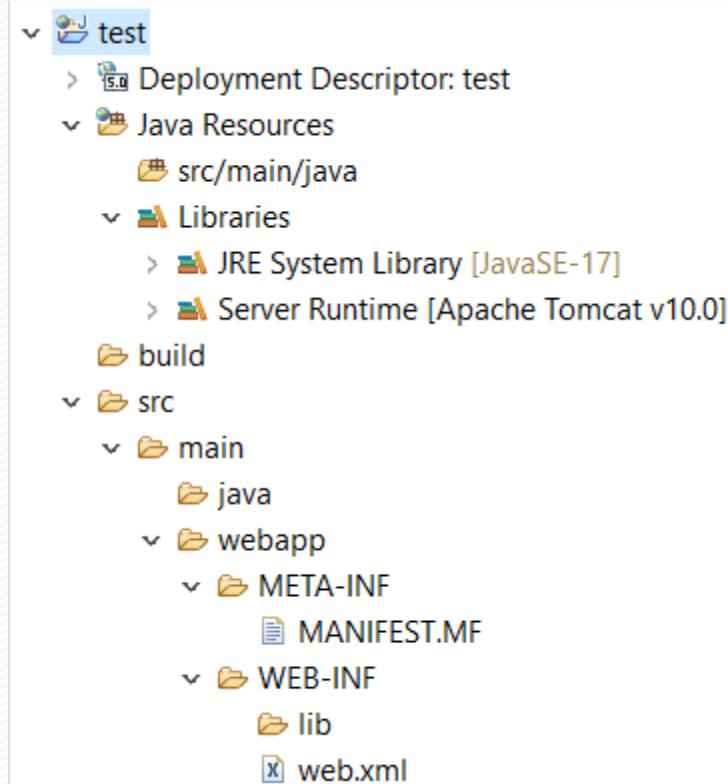
Configure web module settings.



Context root:

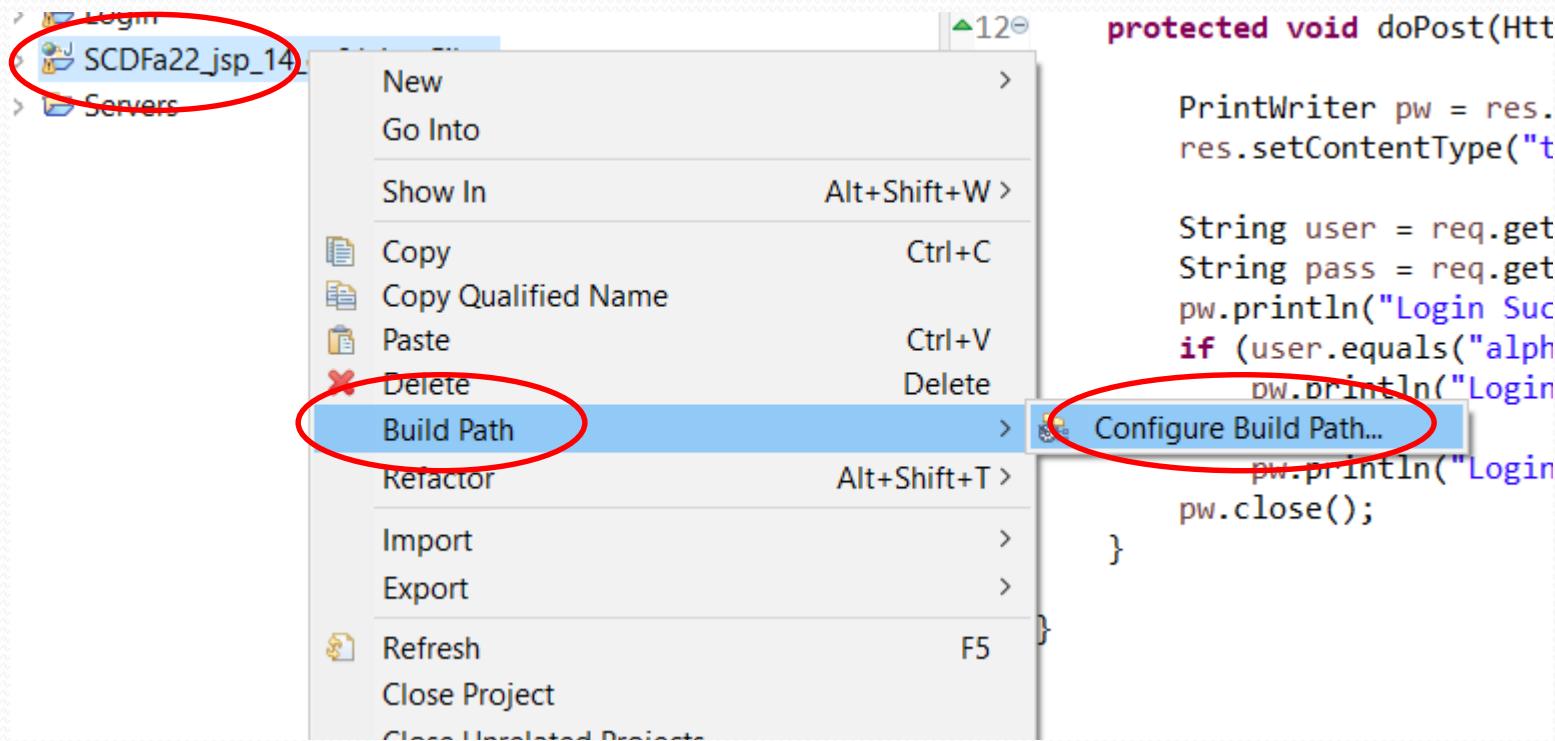
Content directory:





Add servlet and jsp libraries to project

Add servlet and jsp libraries



Java Build Path



Source Projects Libraries Order and Export Module Dependencies

JARs and class folders on the build path:

- Modulepath
 - JRE System Library [JavaSE-17]
- Classpath
 - EAR Libraries
 - Server Runtime [Apache Tomcat v10.0]
 - Web App Libraries

Add JARs...

Add External JARs...

Add Variable...

Add Library...

Add Class Folder...

Add External Class Folder...

Edit...

Remove

Migrate JAR File...

Apply

JAR Selection



← → ⌂ ⌈ ⌉ Local Disk (D:) < apache-tomcat-10.0.26 > lib ⌋ ⌊ Search lib ⌋

Organize ⌄ New folder

⋮ ⌄ ⌁ ⌂ ?

Name	Date modified	Type	Size
jakartaee-migration-1.0.4-shaded.jar	9/23/2022 10:25 A...	Executable Jar File	525 K
jasper.jar	9/23/2022 10:25 A...	Executable Jar File	554 K
jasper-el.jar	9/23/2022 10:25 A...	Executable Jar File	169 K
jaspic-api.jar	9/23/2022 10:25 A...	Executable Jar File	27 K
jsp-api.jar	9/23/2022 10:25 A...	Executable Jar File	64 K
servlet-api.jar	9/23/2022 10:25 A...	Executable Jar File	327 K
tomcat-api.jar	9/23/2022 10:25 A...	Executable Jar File	12 K
tomcat-coyote.jar	9/23/2022 10:25 A...	Executable Jar File	899 K
tomcat-dbcp.jar	9/23/2022 10:25 A...	Executable Jar File	335 K
tomcat-i18n-cs.jar	9/23/2022 10:25 A...	Executable Jar File	67 K
tomcat-i18n-de.jar	9/23/2022 10:25 A...	Executable Jar File	76 K
tomcat-i18n-es.jar	9/23/2022 10:25 A...	Executable Jar File	101 K

File name: "servlet-api.jar" "jsp-api.jar"

.jar;.zip

Open

Cancel

Java Build Path



Source Projects Libraries Order and Export Module Dependencies

JARs and class folders on the build path:

- Modulepath
 - JRE System Library [JavaSE-17]
- Classpath
 - jsp-api.jar - D:\apache-tomcat-10.0.26\lib
 - servlet-api.jar - D:\apache-tomcat-10.0.26\lib
 - EAR Libraries
 - Server Runtime [Apache Tomcat v10.0]
 - Web App Libraries

Add JARs...

Add External JARs...

Add Variable...

Add Library...

Add Class Folder...

Add External Class Folder...

Edit...

Remove

Migrate JAR File...

Apply

The screenshot shows the Eclipse IDE interface with two main panes. On the left is the Project Explorer view, which lists the project 'SCDFa22_jsp_14_ex01_LogFilter'. It contains a Deployment Descriptor and Java Resources. The Java Resources section includes a 'src/main/java' folder and a 'Libraries' folder. The 'Libraries' folder is expanded to show the 'JRE System Library [JavaSE-17]' and the 'Server Runtime [Apache Tomcat v10.0]' which contains several JAR files. A red oval highlights the 'jsp-api.jar' and 'servlet-api.jar' entries under the Tomcat libraries. On the right is the Java Editor view, showing the code for 'Login.java'.

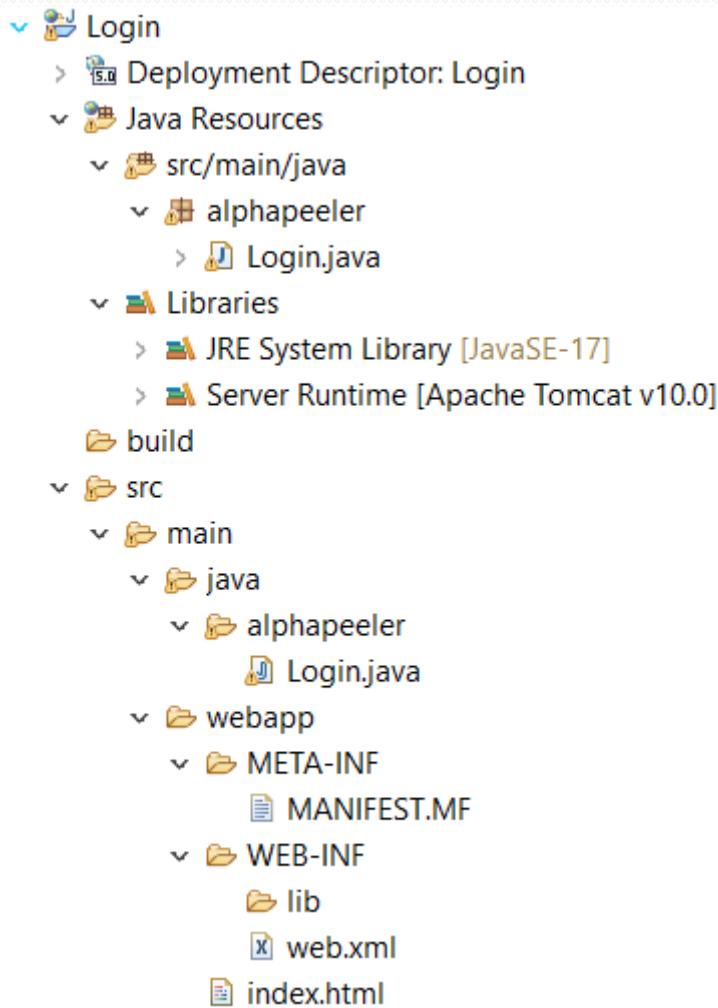
```
1 package alpha
2
3+ import java.i
10
11 public class
12 protected
13
14 Print
15 res.s
16
17 Strin
18 Strin
19 pw.pr
20 if (u
21 p
22 else
23 p
24 pw.cl
25 }
26
27 }
28 }
```

- All done!



Login

Servlet



Login.java

```
package alphapeeler;

import java.io.IOException;
import java.io.PrintWriter;

import jakarta.servlet.ServletException;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;

public class Login extends HttpServlet{
    protected void doPost(HttpServletRequest req, HttpServletResponse res ) throws
ServletException, IOException {

    PrintWriter pw = res.getWriter();
    res.setContentType("text/html");

    String user = req.getParameter("userName");
    String pass = req.getParameter("userPassword");
    //pw.println("Login Success ... !");
    if (user.equals("alphapeeler") && pass.equals("alphapeeler"))
    pw.println("Login Success ... !");
    else
    pw.println("Login Fail ... !");
    pw.close();
}

}
```

Index.html

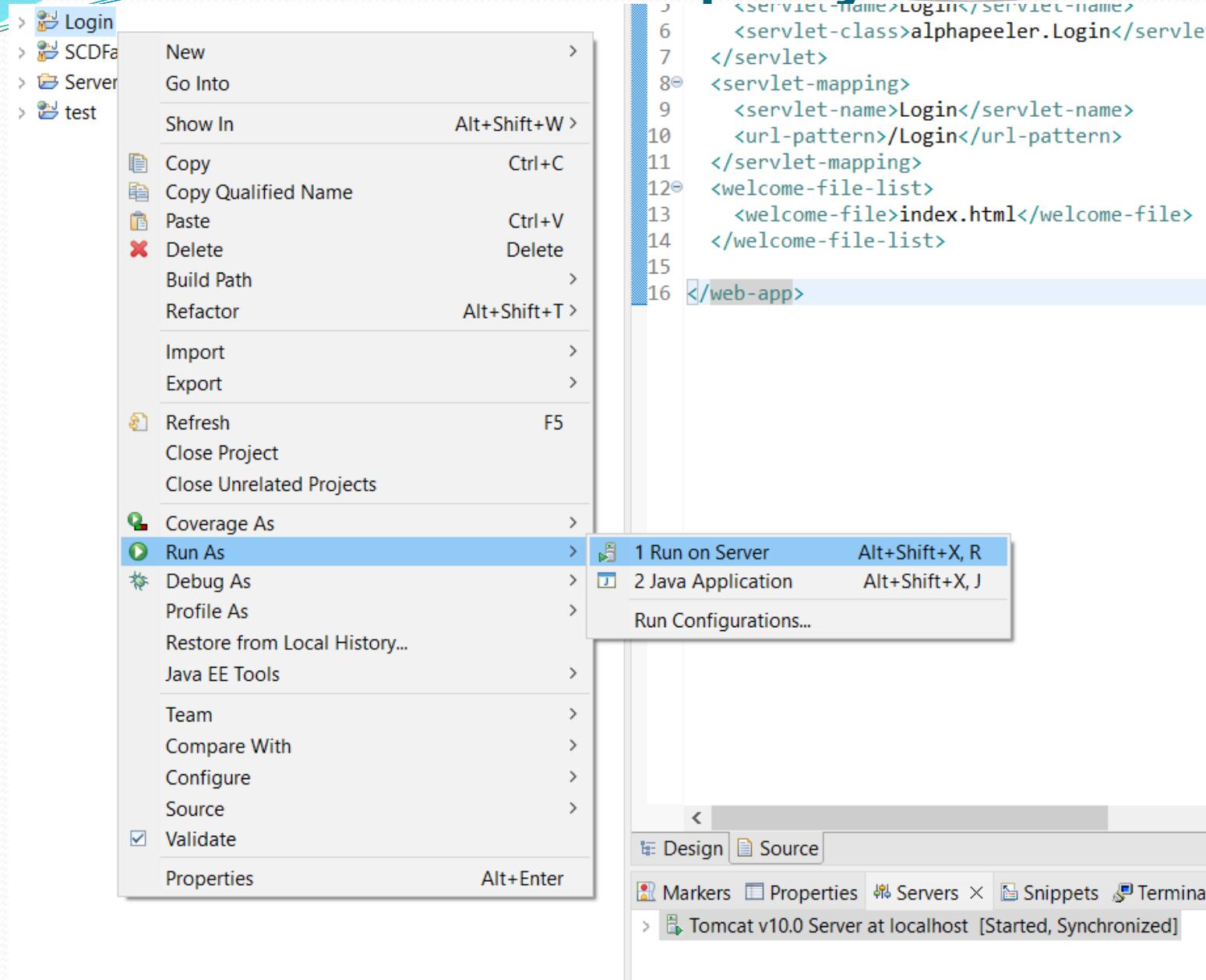
```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action ="Login" method ="post" >

<input type="text" name="userName" > <BR>
<input type="password" name="userPassword" > <BR>
<input type="submit" value="Login" >
</form>
</body>

</html>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="https://jakarta.ee/xml/ns/jakartaee"
xmlns:web="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="https://jakarta.ee/xml/ns/jakartaee
https://jakarta.ee/xml/ns/jakartaee/web-app_5_0.xsd" id="WebApp_ID" version="5.0">
    <display-name>Login</display-name>
    <servlet>
        <servlet-name>Login</servlet-name>
        <servlet-class>alphapeeler.Login</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>Login</servlet-name>
        <url-pattern>/Login</url-pattern>
    </servlet-mapping>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
    </welcome-file-list>
</web-app>
```

How to run the project





Run On Server

Select which server to use



How do you want to select the server?

- Choose an existing server
- Manually define a new server

Select the server that you want to use:

type filter text

Server

State

localhost

Tomcat v10.0 Server at localhost

Started

Apache Tomcat v10.0 supports J2EE 1.2, 1.3, 1.4, and Java EE 5, 6, 7, 8 and Jakarta EE 9
Web modules.

Columns...

Always use this server when running this project

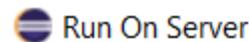


< Back

Next >

Finish

Cancel



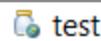
Add and Remove

Modify the resources that are configured on the server



Move resources to the right to configure them on the server

Available:



test

Add >

< Remove

Add All >>

<< Remove All

Configured:



Cookies



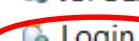
GenericServletLogin



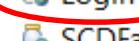
JSP



JSPBEAN



Login



SCDFa22_jsp_14_ex01_LogFilter



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Next >

Finish

Cancel



Project... X Type ...

Cookies
GenericServletLogin
JSP
JSPBEAN
Login
SCDFa22_jsp_14_ex01_LogFilter
Deployment Descriptor: SC
Java Resources
src/main/java
Libraries
build
src
main
java
LogFilter.java
webapp
META-INF
WEB-INF
lib
web.xml
Servers

LogFilter.java X web.xml X web.xml

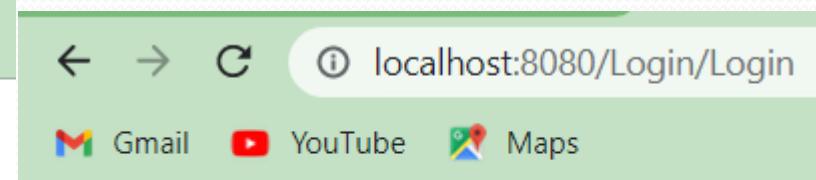
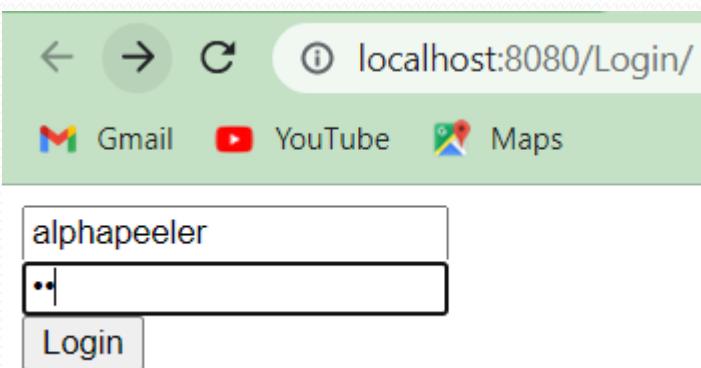
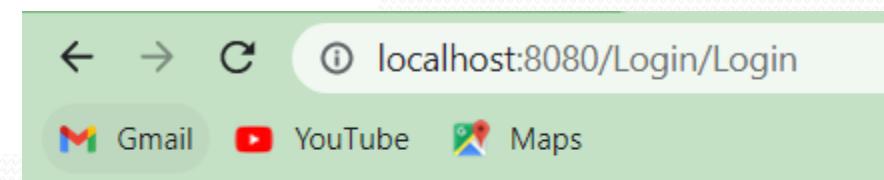
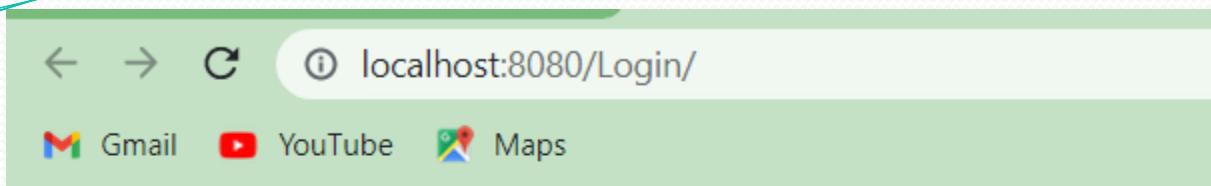
```
1 import java.io.*;  
2 import jakarta.servlet.*;  
3 import jakarta.servlet.http.*;  
4 import java.util.*;  
5  
6 // Implements Filter class  
7 public class LogFilter implements Filter {  
8     public void init(FilterConfig config) throws  
9             // Get init parameter  
10            String testParam = config.getInitParameter  
11  
12            //Print the init parameter  
13            System.out.println("Test Param: " + testPa  
14        }  
15        public void doFilter(ServletRequest request,  
16            throws java.io.IOException, ServletException  
17  
18            // Get the IP address of client machine.  
19            String ipAddress = request.getRemoteAddr()  
20  
21            // Log the IP address and current timestamp  
22            System.out.println("IP " + ipAddress + " T")
```

Outline X

LogFilter
init(FilterConfig) : void
doFilter(ServletRequest, ServletResponse) : void
destroy() : void

Markers Properties Servers Snippets Terminal Console

```
Tomcat v10.0 Server at localhost [Apache Tomcat] D:\eclipse-java-2022-06-R-win32-x86_64\eclipse\plugins\org.eclipse.wst.common.component\org.apache.catalina.core\start  
Oct 09, 2022 12:19:57 PM org.apache.coyote.AjaxableProtocol start  
INFO: Starting ProtocolHandler ["http-nio-8080"]  
Oct 09, 2022 12:19:57 PM org.apache.catalina.startup.Catalina start  
INFO: Server startup in [1332] milliseconds  
IP 0:0:0:0:0:0:0:1, Time Sun Oct 09 12:20:16 PKT 2022
```



GenericServletLogin

Servlet

Generic Servlet

A *generic servlet* is a protocol independent Servlet that should always override the service() method to handle the client request..

Generic Servlet is easier to write

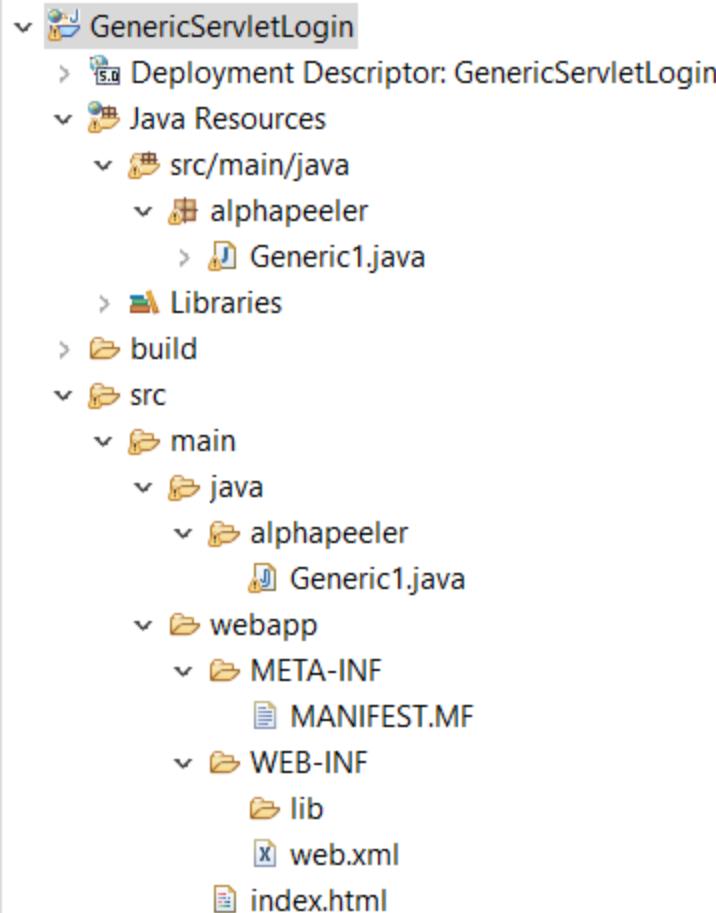
It has a very simple life cycle methods

To write Generic Servlet you just need to extend javax.servlet.GenericServlet and override the service() method

Pros

Servlet Classes and Interfaces

Servlet	Declares life cycle method of servlet
ServletConfig	Allows servlet to get Initialization methods
ServletContext	Enables servlet to log access and access information
ServletRequest	Used to read data from client request
ServletResponse	Used to write data to client response
GenericServlet	Implements servlet and Servlet.Config Interface
ServletInputStream	Provides input stream to read requests from the client
ServletOutputStream	Provides output stream to write responses to the client
ServletException	Indicates servlet error has occurred
UnavailableException	Indicates servlet is not available
HttpServlet	Provides methods to handle Http Request and Response
HttpServletRequest	Enables servlets to read data from Http Request
HttpServletResponse	Enables servlets to write data to Http Response



Generic1.java

```
package alphapeeler;

import java.io.IOException;
import java.io.PrintWriter;

import jakarta.servlet.GenericServlet;
import jakarta.servlet.ServletException;
import jakarta.servlet.ServletRequest;
import jakarta.servlet.ServletResponse;

public class Generic1 extends GenericServlet {

    public void service (ServletRequest req, ServletResponse res) throws IOException,
    ServletException{
        res.setContentType("text/html");
        PrintWriter pwriter = res.getWriter();
        pwriter.print("<html>");
        pwriter.print("<body>");
        pwriter.print("<H2>GenericServlet Example</H2>");
        pwriter.print("<P>Welcome to AlphaPeeler</P>");
        pwriter.print("<body>");
        pwriter.print("</html>");
    }
}
```

Index.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>AlphaPeeler Generic servlet</title>
</head>
<body>
<a href="welcome"> Click to call a generic Servlet</a>
</body>
</html>
```

Web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="https://jakarta.ee/xml/ns/jakartaee"
  xmlns:web="http://xmlns.jcp.org/xml/ns/javaee"
  xsi:schemaLocation="https://jakarta.ee/xml/ns/jakartaee
  https://jakarta.ee/xml/ns/jakartaee/web-app_5_0.xsd" id="WebApp_ID"
  version="5.0">
  <display-name>Login</display-name>
  <servlet>
    <servlet-name>GenericServletLogin</servlet-name>
    <servlet-class>alphapeeler.Generic1</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>GenericServletLogin</servlet-name>
    <url-pattern>/welcome</url-pattern>
  </servlet-mapping>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
  </welcome-file-list>
</web-app>
```

← → ⌂

ⓘ localhost:8080/GenericServletLogin/

Gmail

YouTube

Maps

[Click to call a generic Servlet](#)

← → ⌂

ⓘ localhost:8080/GenericServletLogin/welcome

Gmail

YouTube

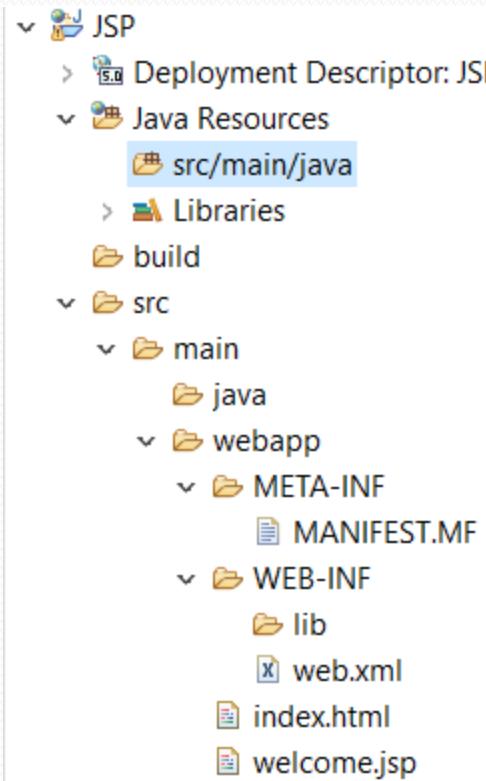
Maps

GenericServlet Example

Welcome to AlphaPeeler

JSP

Working with JSP in eclipse



Index.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action ="welcome.jsp" method ="get" >
<input type="text" name="uname"> <BR>
<input type="submit" value="go">
</form>
</body>
</html>
```

Welcome.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String name = request.getParameter("uname");
out.print("Welcome : "+name);
//response.sendRedirect("http://alphapeeler.sf.net");
%>
</body>
</html>
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="https://jakarta.ee/xml/ns/jakartaee"
  xmlns:web="http://xmlns.jcp.org/xml/ns/javaee"
  xsi:schemaLocation="https://jakarta.ee/xml/ns/jakartaee
  https://jakarta.ee/xml/ns/jakartaee/web-app_5_0.xsd
  http://xmlns.jcp.org/xml/ns/javaee
  http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID"
  version="5.0">
  <display-name>JSP</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.jsp</welcome-file>
    <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
</web-app>
```

localhost:8080/JSP/

Gmail YouTube Maps

alphapeeler

go

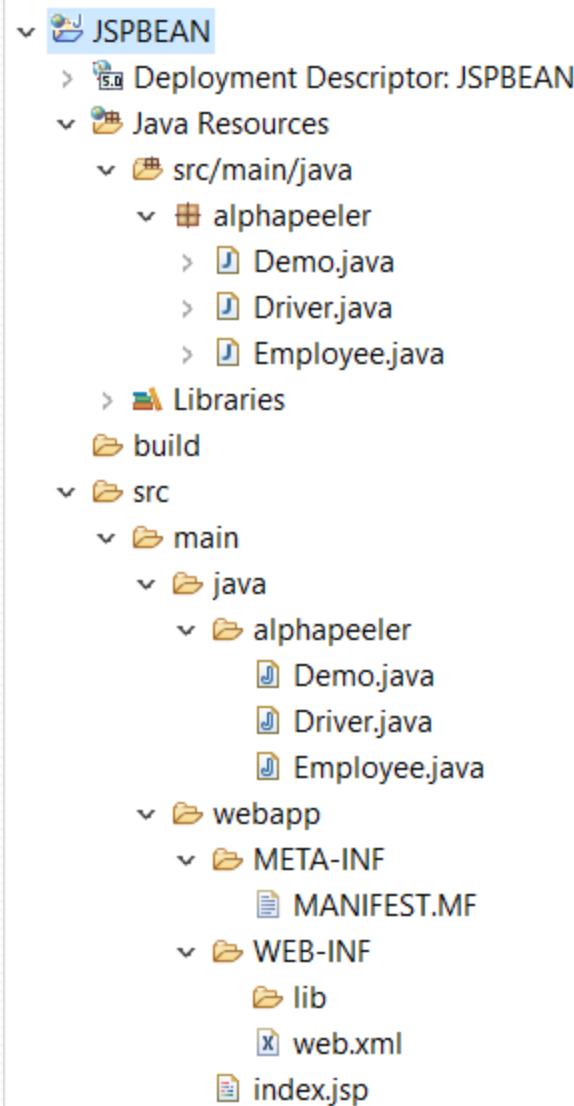
localhost:8080/JSP/welcome.jsp?uname=alphapeeler

Gmail YouTube Maps

Welcome : alphapeeler

JSP BEAN

Working with beans in JSP via eclipse



Employee.java

```
package alphapeeler;

public class Employee {
private int id;
private String name;
public Employee (){

}

public void setId(int i) {
this.id = i;
}
public int getId() {
return this.id;
}

public void setName(String n) {
this.name = n;
}

public String getName() {
return this.name;
}
}
```

Driver.java

```
package alphapeeler;

public class Driver {

//public static void main(String[] args) {
public void useEmployee() {
// TODO Auto-generated method stub
Employee e = new Employee();
e.setName("alphapeeler");
System.out.println(e.getName()); //This will be Logged in web server console.
}

}
```

Demo.java

```
package alphapeeler;

public class Demo {
    public int cube (int i) {
        return i*i*i;
    }
}
```

Index.jsp

```
<%@page import="alphapeeler.Employee"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<jsp:useBean id="object" class="alphapeeler.Demo"/>
<%
int m = object(cube(5));
out.println("cube of 5 is : " + m);
%>
<jsp:useBean id="object2" class="alphapeeler.Employee"/>
<%
object2.setId(1);
out.println(object2.getId());
object2.setName("Abdul Rahman");
out.println(object2.getName());
%>
<jsp:useBean id="object3" class="alphapeeler.Driver"/>
<%
object3.useEmployee();
%>
</body>
</html>
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns="https://jakarta.ee/xml/ns/jakartaee"
xmlns:web="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="https://jakarta.ee/xml/ns/jakartaee
https://jakarta.ee/xml/ns/jakartaee/web-app_5_0.xsd
http://xmlns.jcp.org/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
id="WebApp_ID" version="5.0">
    <display-name>JSPBEAN</display-name>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
        <welcome-file>index.htm</welcome-file>
        <welcome-file>default.html</welcome-file>
        <welcome-file>default.jsp</welcome-file>
        <welcome-file>default.htm</welcome-file>
    </welcome-file-list>
</web-app>
```

localhost:8080/JSPBEAN/

Gmail YouTube Maps

cube of 5 is : 125 1 Abdul Rahman .

```
Employee.java X index.jsp web.xml »
```

```
9  public void setId(int i) {  
10     this.id = i;  
11 }  
12  public int getId() {  
13     return this.id;  
14 }  
15  
16  public void setName(String n) {  
17     this.name = n;  
18 }  
19  
20  public String getName() {  
21     return this.name;  
22 }  
23  
24 }  
25
```

Outline X

- alphapeeler
- Employee
 - id : int
 - name : String
 - Employee()
 - setId(int) : void
 - getId() : int
 - setName(String) : void
 - getName() : String

Markers Properties Servers Snippets Terminal Console X

Tomcat v10.0 Server at localhost [Apache Tomcat] D:\eclipse-java-2022-06-R-win32-x86_64\eclipse\plugins\org.apache.tomcat\lib\lib\catalina.jar
Oct 09, 2022 2:20:44 PM org.apache.catalina.startup.HostConfig deployDirectory
INFO: Deploying web application directory [D:\apache-tomcat-10.0.26\webapps\SCD]
Oct 09, 2022 2:20:44 PM org.apache.catalina.startup.HostConfig deployDirectory
INFO: Deployment of web application directory [D:\apache-tomcat-10.0.26\webapps\SCD]
Oct 09, 2022 2:20:44 PM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-nio-8080"]
Oct 09, 2022 2:20:44 PM org.apache.catalina.startup.Catalina start
INFO: Server startup in [1258] milliseconds
alphapeeler

itable Smart Insert 2:1:22

Cookies

Working with cookies

MyServlet1.java

```
package alphapeeler;

import java.io.*;

import jakarta.servlet.http.Cookie;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;

public class MyServlet1 extends HttpServlet{
    public void doGet (HttpServletRequest req, HttpServletResponse res) {
        try {
            res.setContentType("text/html");
            PrintWriter pw = res.getWriter();
            String name = req.getParameter("userName");
            String pass = req.getParameter("userPassword");
            pw.print("Hello " + name);
            pw.print("Your Password is " + pass);

            Cookie c1 = new Cookie("userName", name);
            Cookie c2 = new Cookie("userPassword", pass);
            res.addCookie(c1);
            res.addCookie(c2);
            pw.print("<BR><a href='welcomewhere' > View Details </a>");
        } catch (Exception exp) {
            System.out.println(exp);
        }
    }
}
```

MyServlet2.java

```
package alphapeeler;

import java.io.PrintWriter;

import jakarta.servlet.http.Cookie;

import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;

public class MyServlet2 extends HttpServlet{
    public void doGet (HttpServletRequest req, HttpServletResponse res) {
        try {
            res.setContentType("text/html");
            PrintWriter pw = res.getWriter();

            //Reading cookies
            Cookie[] c = req.getCookies();
            pw.print("Name here : "+ c[0]);
            pw.print("Password : "+ c[1]);
            pw.close();

        } catch (Exception exp) {
            System.out.println(exp);
        }
    }
}
```

Index.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action ="Login" method ="get" >
<input type="text" name="userName"> <BR>
<input type="password" name="userPassword"> <BR>
<input type="submit" value="submit">
</form>
</body>
</html>
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="https://jakarta.ee/xml/ns/jakartaee"
xmlns:web="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="https://jakarta.ee/xml/ns/jakartaee
https://jakarta.ee/xml/ns/jakartaee/web-app_5_0.xsd
http://xmlns.jcp.org/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-
app_2_5.xsd" id="WebApp_ID" version="5.0">
    <display-name>Cookies</display-name>
    <servlet>
        <servlet-name>Servlet1</servlet-name>
        <servlet-class>alphapeeler.MyServlet1</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>Servlet1</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>
    <servlet>
        <servlet-name>Servlet2</servlet-name>
        <servlet-class>alphapeeler.MyServlet2</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>Servlet2</servlet-name>
        <url-pattern>/welcomehere</url-pattern>
    </servlet-mapping>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
    </welcome-file-list>
</web-app>
```

localhost:8080/Cookies/

Gmail YouTube Maps

alphapeeler
.....
submit

localhost:8080/Cookies/login?userName=alphapeeler&userPassword=Letmein

Gmail YouTube Maps

Hello alphapeeler Your Password is Letmein
[View Details](#)

localhost:8080/Cookies/welcomehere

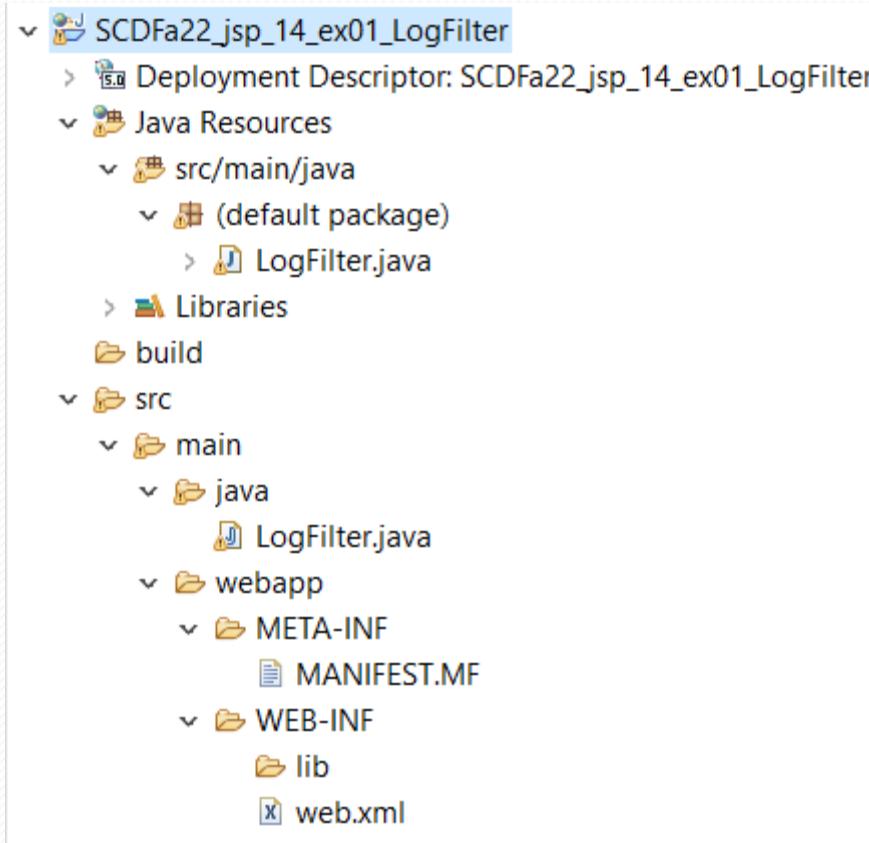
Gmail YouTube Maps

Name here : jakarta.servlet.http.Cookie@4441e99f Password : jakarta.servlet.http.Cookie@665a0ed2

LogFilter

Working with filters

credit : https://www.tutorialspoint.com/jsp/jsp_writing_filters.htm



LogFilter.java

```
import java.io.*;
import jakarta.servlet.*;
import jakarta.servlet.http.*;
import java.util.*;
// Implements Filter class
public class LogFilter implements Filter {
    public void init(FilterConfig config) throws ServletException {
        // Get init parameter
        String testParam = config.getInitParameter("test-param");
        //Print the init parameter
        System.out.println("Test Param: " + testParam);
    }
    public void doFilter(ServletRequest request, ServletResponse response, FilterChain chain)
        throws java.io.IOException, ServletException {
        // Get the IP address of client machine.
        String ipAddress = request.getRemoteAddr();
        // Log the IP address and current timestamp.
        System.out.println("IP "+ ipAddress + ", Time "+ new Date().toString());
        // Pass request back down the filter chain
        chain.doFilter(request,response);
    }
    public void destroy( ) {
        /* Called before the Filter instance is removed
        from service by the web container*/
    }
}
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="https://jakarta.ee/xml/ns/jakartaee" xmlns:web="http://jakarta.ee/xml/ns/jakartaee/web" xsi:schemaLocation="https://jakarta.ee/xml/ns/jakartaee https://jakarta.ee/xml/ns/jakartaee/web-app_5_0.xsd http://xmlns.jcp.org/jakartaee/web-app_2_5.xsd" id="WebApp_ID" version="5.0">
    <display-name>SCDFa22_jsp_14_ex01_LogFilter</display-name>

    <filter>
        <filter-name>LogFilter</filter-name>
        <filter-class>LogFilter</filter-class>
        <init-param>
            <param-name>test-param</param-name>
            <param-value>Initialization Parameter</param-value>
        </init-param>
    </filter>

    <filter-mapping>
        <filter-name>LogFilter</filter-name>
        <url-pattern>/*</url-pattern>
    </filter-mapping>

    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
        <welcome-file>index.htm</welcome-file>
        <welcome-file>default.html</welcome-file>
        <welcome-file>default.jsp</welcome-file>
        <welcome-file>default.htm</welcome-file>
    </welcome-file-list>
</web-app>
```

A screenshot of a web browser window. The address bar shows the URL `localhost:8080/SCDFa...`. Below the address bar is a toolbar with icons for Gmail, YouTube, and Maps. The main content area displays a directory listing for the root path [/]. The table has three columns: **Filename**, **Size**, and **Last Modified**. There is one entry in the table: **Apache Tomcat/10.0.26**.

Filename	Size	Last Modified
Apache Tomcat/10.0.26		

S

The screenshot shows the Eclipse IDE interface with the following components:

- Left Panel:** Shows the code editor with `LogFilter.java` and `web.xml` tabs. The code implements a `Filter` interface with `init()`, `doFilter()`, and `destroy()` methods.
- Outline View:** Shows the class `LogFilter` and its methods: `init(FilterConfig)`, `doFilter(ServletRequest, ServletResponse)`, and `destroy()`.
- Bottom Navigation Bar:** Includes tabs for `Markers`, `Properties`, `Servers` (selected), `Snippets`, `Terminal`, and `Console`.

Tomcat v10.0 Server at localhost [Apache Tomcat] D:\eclipse-java-2022-06-R-win32-x86_64\eclipse\plugins\or
INFO: Deploying web application directory [D:\apache-tomcat-10.0.26\webapps\SCD]
Oct 09, 2022 2:20:44 PM org.apache.catalina.startup.HostConfig deployDirectory
INFO: Deployment of web application directory [D:\apache-tomcat-10.0.26\webapps\SCD]
Oct 09, 2022 2:20:44 PM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-nio-8080"]
Oct 09, 2022 2:20:44 PM org.apache.catalina.startup.Catalina start
INFO: Server startup in [1258] milliseconds
alphapeeler
IP 0:0:0:0:0:0:0:1, Time Sun Oct 09 15:09:07 PKT 2022