

Experiment no 5

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231410

Aim: To deploy web application on tomcat server

Step 1 : login to your GitHub and create a new repository take a sample maven project and push it in your directory

Create a new repository

Repositories contain a project's files and version history. Have a project elsewhere? [Import a repository](#).

Required fields are marked with an asterisk (*).

1 General

Owner *: tuba-chaudhary / Repository name *: hello-tomcat-server

Great repository names are short and memorable. How about [verbose-waffle](#)?

Description: 0 / 350 characters

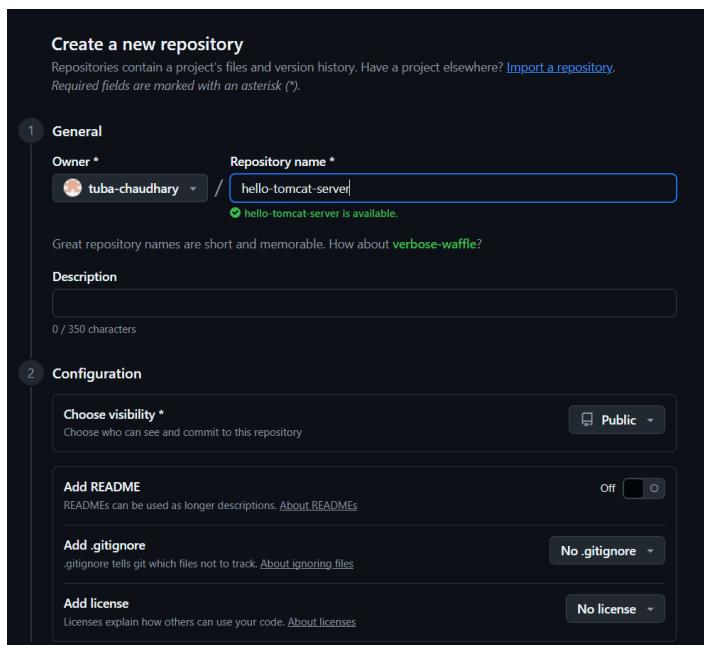
2 Configuration

Choose visibility *: Public

Add README: Off

Add .gitignore: No .gitignore

Add license: No license



tuba-chaudhary / hello-tomcat-advanced

Type (/) to search

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

hello-tomcat-advanced Public

Pin View

main Branches Tags Go to file Add file Code

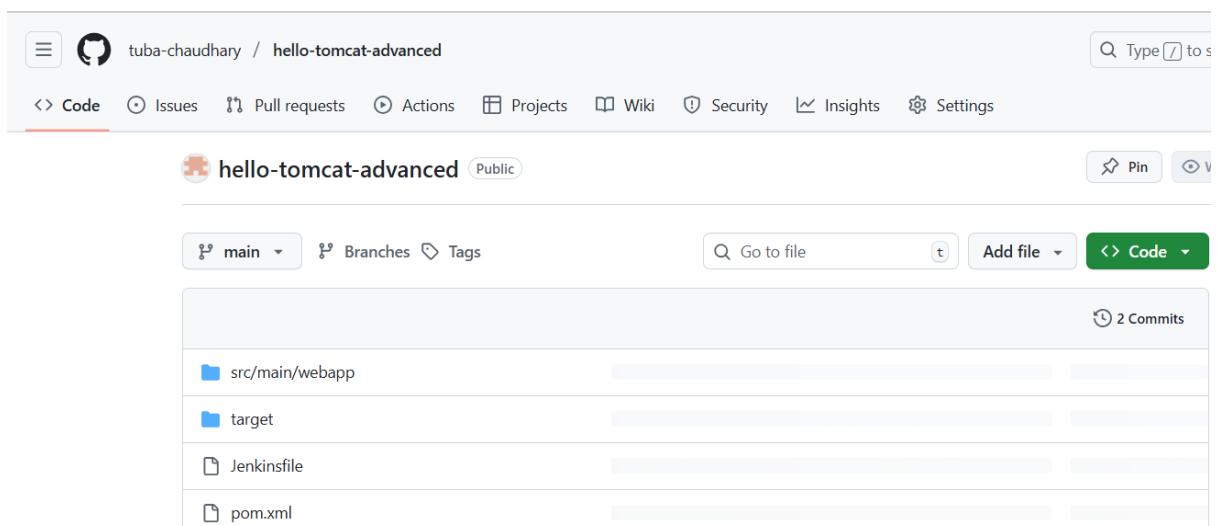
2 Commits

src/main/webapp

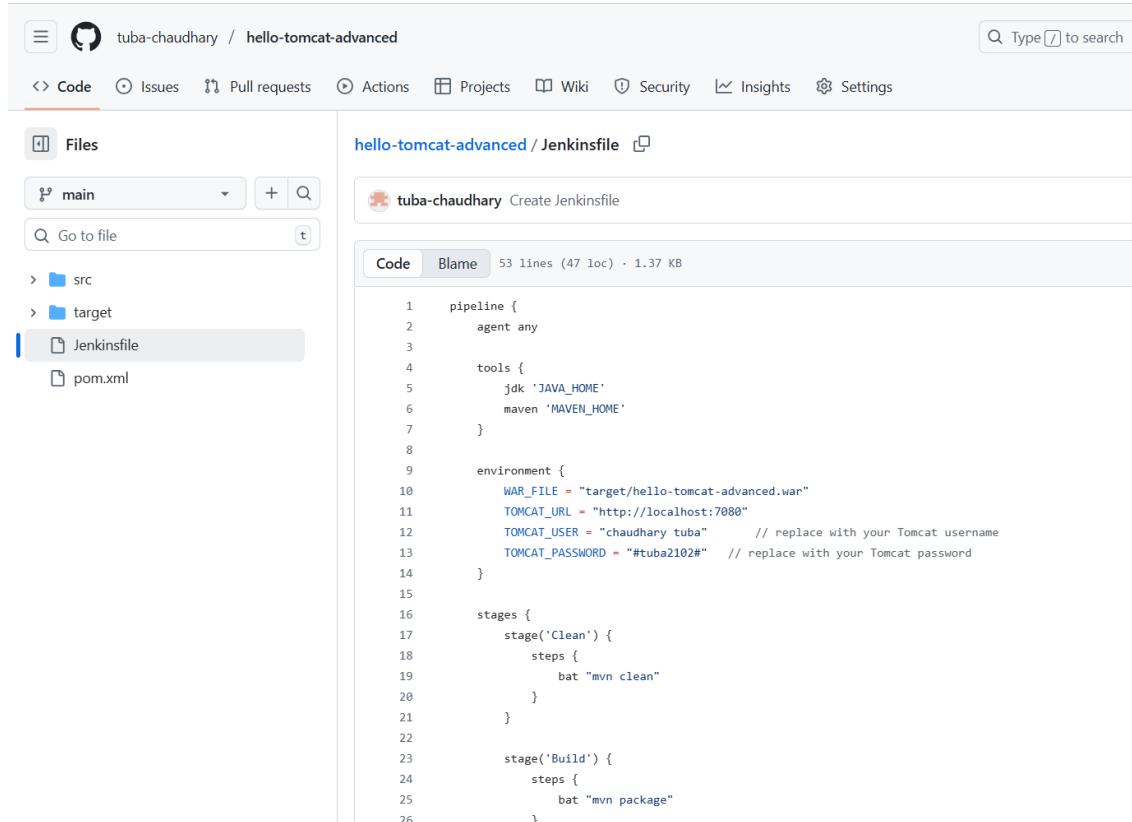
target

Jenkinsfile

pom.xml



I have taken a simple project which includes .xml file now add a Jenkins file to it containing username and password of tomcat.



The screenshot shows a GitHub repository named 'tuba-chaudhary / hello-tomcat-advanced'. The 'Code' tab is selected. On the left, there's a sidebar with 'Files' and a tree view showing 'main', 'src', 'target', 'Jenkinsfile' (which is selected), and 'pom.xml'. The main area displays the Jenkinsfile content:

```
pipeline {
    agent any

    tools {
        jdk 'JAVA_HOME'
        maven 'MAVEN_HOME'
    }

    environment {
        WAR_FILE = "target/hello-tomcat-advanced.war"
        TOMCAT_URL = "http://localhost:7080"
        TOMCAT_USER = "chaudhary tuba"           // replace with your Tomcat username
        TOMCAT_PASSWORD = "#tuba2102#"         // replace with your Tomcat password
    }

    stages {
        stage('Clean') {
            steps {
                bat "mvn clean"
            }
        }
        stage('Build') {
            steps {
                bat "mvn package"
            }
        }
    }
}
```

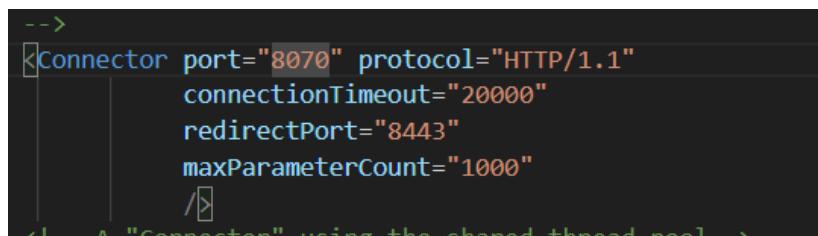
Step 2:

Download ZIP from Tomcat 9 Downloads → Core ZIP.

-Extract to c:/

-Open the C:\apache-tomcat-9.0.108\conf\server.xml file and edit port="7080"

Make sure that Jenkins and tomcat are running on different port no.



go to C:\apache-tomcat-9.0.108\conf\tomcat-users.xml file and add <role rolename="manager-gui"/>

<role rolename="manager-script"/>

<user username="tomcatuser" password="yourpassword" roles="manager-gui,manager-script"/> Inside the users tag;

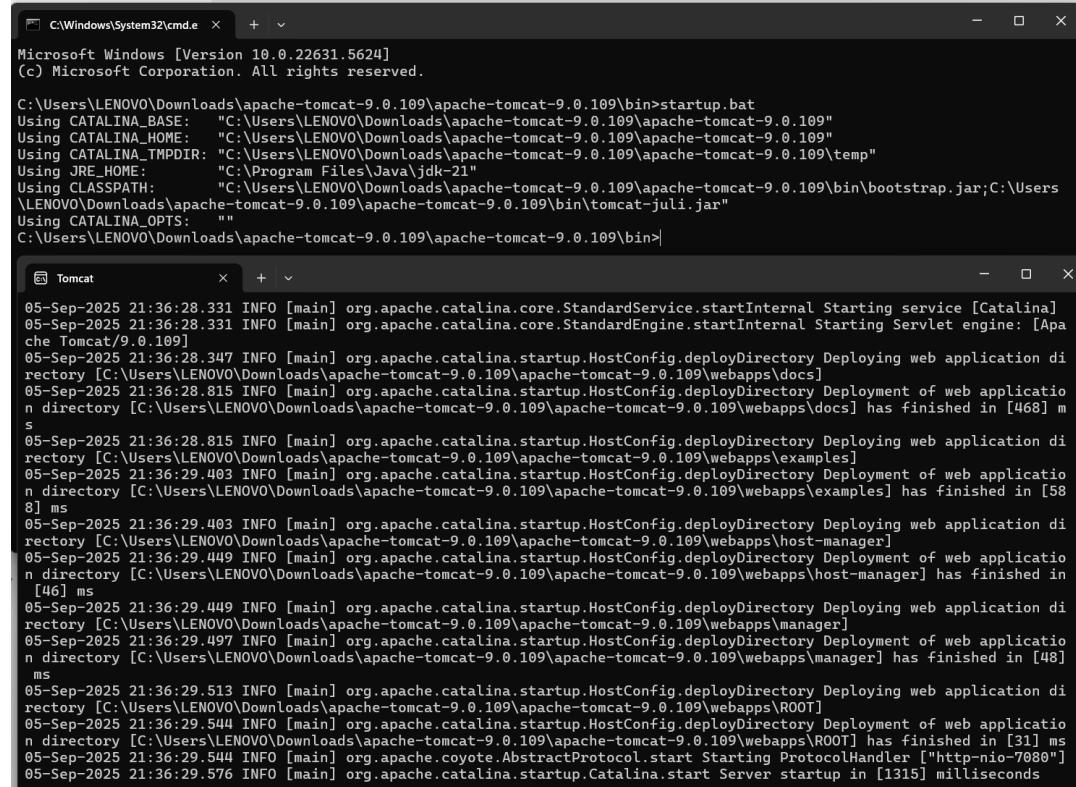
```
6 | limitations under the License.
7 | ->
8 | <tomcat-users xmlns="http://tomcat.apache.org/xml"
9 |   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
10|   xsi:schemaLocation="http://tomcat.apache.org/xml tomcat-users.xsd"
11|   version="1.0">
12|     <role rolename="manager-gui"/>
13|     <role rolename="manager-script"/>
14|     <user username="tomcatuser" password="yourpassword" roles="manager-gui,manager-script"/>
15| 
```

go to C:\apache-tomcat-9.0.108\webapps\manager\META-INF\context.xml and comment out <valve> code

```
<Context antiResourceLocking="false" privileged="true" >
    <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
        sameSiteCookies="strict" />
    <!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
        allow="127\.\d+\.\d+\.\d+|\:1|0\:0\:0\:0\:0\:1" /> -->
    <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|Number|String)|o
</Context>
```

Go to C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\bin and open cmd

Type command startup.bat



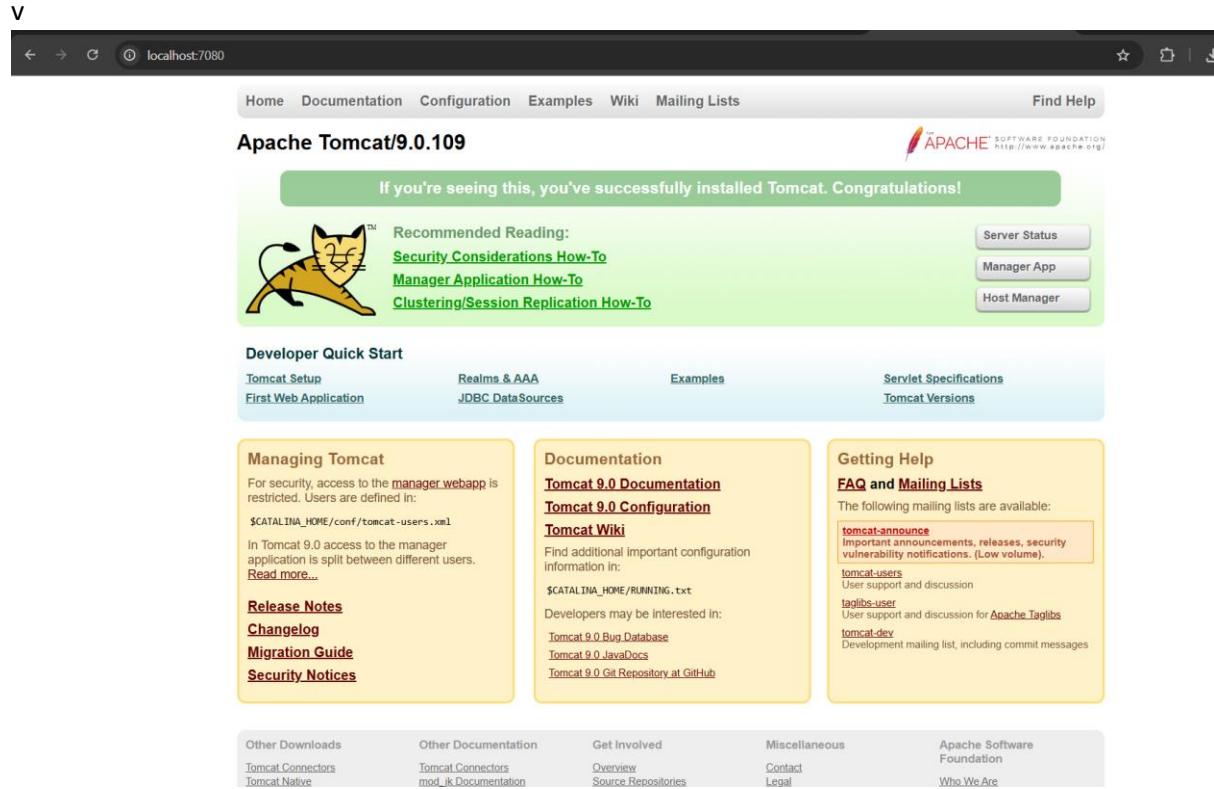
```
C:\Windows\System32\cmd.e + ^
Microsoft Windows [Version 10.0.22631.5624]
(c) Microsoft Corporation. All rights reserved.

C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\bin>startup.bat
Using CATALINA_BASE:  "C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109"
Using CATALINA_HOME:  "C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109"
Using CATALINA_TMPDIR: "C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\temp"
Using JRE_HOME:       "C:\Program Files\Java\jdk-21"
Using CLASSPATH:      "C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\bin\bootstrap.jar;C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\bin\tomcat-juli.jar"
Using CATALINA_OPTS:  ""

C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\bin>

[5-Sep-2025 21:36:28.331 INFO [main] org.apache.catalina.core.StandardService.startInternal Starting service [Catalina]
[5-Sep-2025 21:36:28.331 INFO [main] org.apache.catalina.core.StandardEngine.startInternal Starting Servlet engine: [Apache Tomcat/9.0.109]
[5-Sep-2025 21:36:28.347 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\docs]
[5-Sep-2025 21:36:28.815 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\docs] has finished in [468] ms
[5-Sep-2025 21:36:28.815 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\examples]
[5-Sep-2025 21:36:29.403 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\examples] has finished in [58] ms
[5-Sep-2025 21:36:29.403 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\host-manager]
[5-Sep-2025 21:36:29.449 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\host-manager] has finished in [46] ms
[5-Sep-2025 21:36:29.449 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\manager]
[5-Sep-2025 21:36:29.497 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\manager] has finished in [48] ms
[5-Sep-2025 21:36:29.497 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\ROOT]
[5-Sep-2025 21:36:29.544 INFO [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\apache-tomcat-9.0.109\webapps\ROOT] has finished in [31] ms
[5-Sep-2025 21:36:29.544 INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["http-nio-7080"]
[5-Sep-2025 21:36:29.576 INFO [main] org.apache.catalina.startup.Catalina.start Server startup in [1315] milliseconds
```

go to <http://localhost:7080/> and open tomcat



step 3: go to Jenkins and manage Jenkins --→plugins

Install a Pulgin DEPLOY TO CONTAINER.

A screenshot of the Jenkins plugin management interface. The search bar at the top contains the text 'deploy'. On the left, there are filters for 'Install' and 'Name ↓'. The main list shows the 'Deploy to container' plugin, which is checked and highlighted with a blue border. The plugin details are shown: Name: Deploy to container 1.17, Type: Artifact Uploader, Description: This plugin allows you to deploy a war to a container after a successful build. Glassfish 3.x remote deployment, Released: 3 mo 25 days ago, and a Health status of 91. There is also a 'Install' button with a downward arrow icon.

Step 4: now go to new item give it a name and select pipeline option

New Item

Enter an item name

231410exp5

» A job already exists with the name '231410exp5'

Select an item type



Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Maven project

Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.



Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

Give a description fill the required fields and give URL of the repository created earlier

General

Enabled

Description

demo

Plain text [Preview](#)

Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

Definition

Pipeline script from SCM

SCM ?

Git

Repositories ?

Repository URL ?

`https://github.com/tuba-chaudhary/hello-tomcat-advanced.git`



Credentials ?

tuba-chaudhary/*****



+ Add

Advanced ▾

Click on build now and wait till the build is sucessfull

✓ #4 (Sep 5, 2025, 10:01:41 PM)



Started by user Chaudhary Tuba



This run spent:

- 14 ms waiting;
- 17 sec build duration;
- 17 sec total from scheduled to completion.



Revision: a86f0a5ef3a07a5cdc8335280e333c9089b0670b

Repository: <https://github.com/tuba-chaudhary/hello-tomcat-advanced.git>

- refs/remotes/origin/main



Changes

1. Update Jenkinsfile ([details](#) / [githubweb](#))

Step 5: go to C:\Users\LENOVO\Downloads\apache-tomcat-9.0.109\webapps you will see that a .war file is generated.

✓ Today

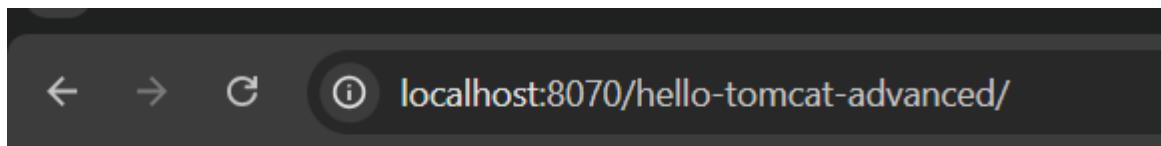
	hello-tomcat-advanced.war	05-09-2025 22:01	WAR File	2 KB
	hello-tomcat-advanced	05-09-2025 22:01	File folder	
	examples	05-09-2025 21:06	File folder	
	host-manager	05-09-2025 21:06	File folder	
	manager	05-09-2025 21:06	File folder	
	docs	05-09-2025 21:06	File folder	
	ROOT	05-09-2025 21:06	File folder	

Step 6: go to tomcat manager app you will see the name of your project click on it.

Tomcat Web Application Manager

Message:	OK			
Manager				
List Applications	HTML Manager Help			
Applications				
Path	Version	Display Name	Running	Sessions
/	<i>None specified</i>	Welcome to Tomcat	true	0
/docs	<i>None specified</i>	Tomcat Documentation	true	0
/examples	<i>None specified</i>	Servlet and JSP Examples	true	0
/hello-tomcat-advanced	<i>None specified</i>	Archetype Created Web Application	true	0
/host-manager	<i>None specified</i>	Tomcat Host Manager Application	true	0
/manager	<i>None specified</i>	Tomcat Manager Application	true	1

This shows that the project is successfully deployed.



Hello World!

Conclusion: In this experiment, we integrated Apache Tomcat with Jenkins to automate deployment from a provided Git repository, ensuring smooth code fetch, build, and deployment to the server.

This setup demonstrates a practical CI/CD pipeline for real-world web application deployment.