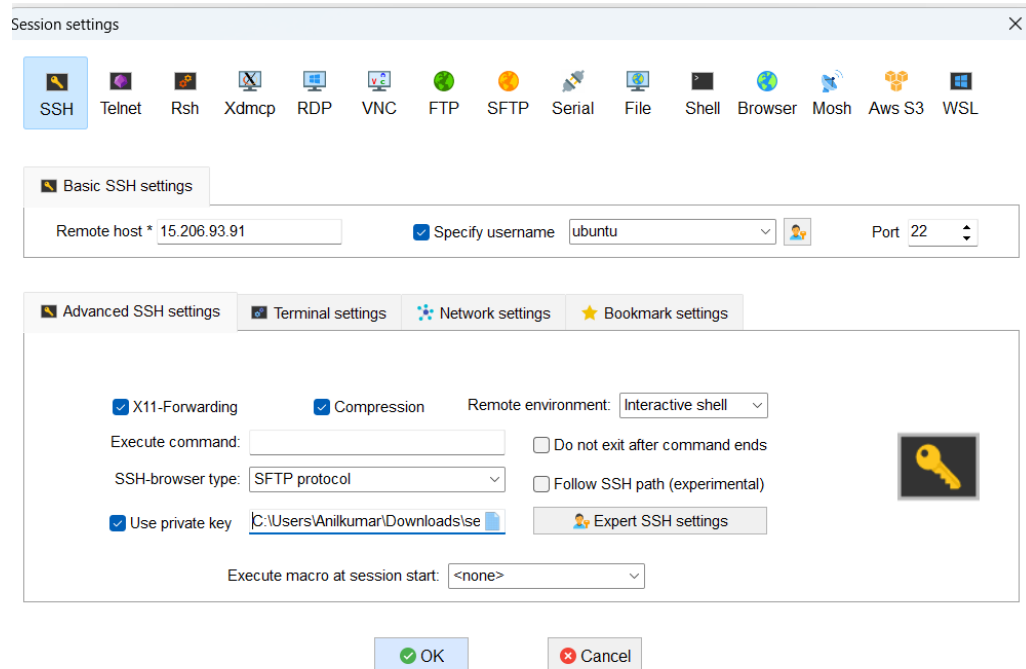
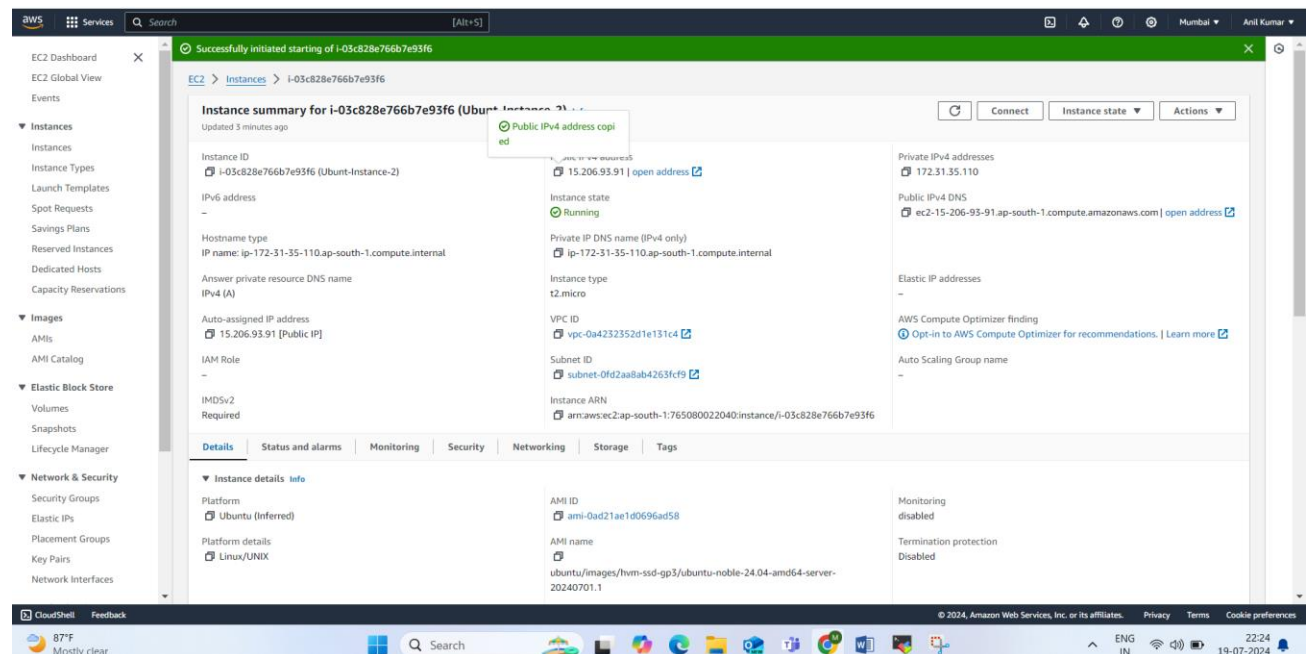


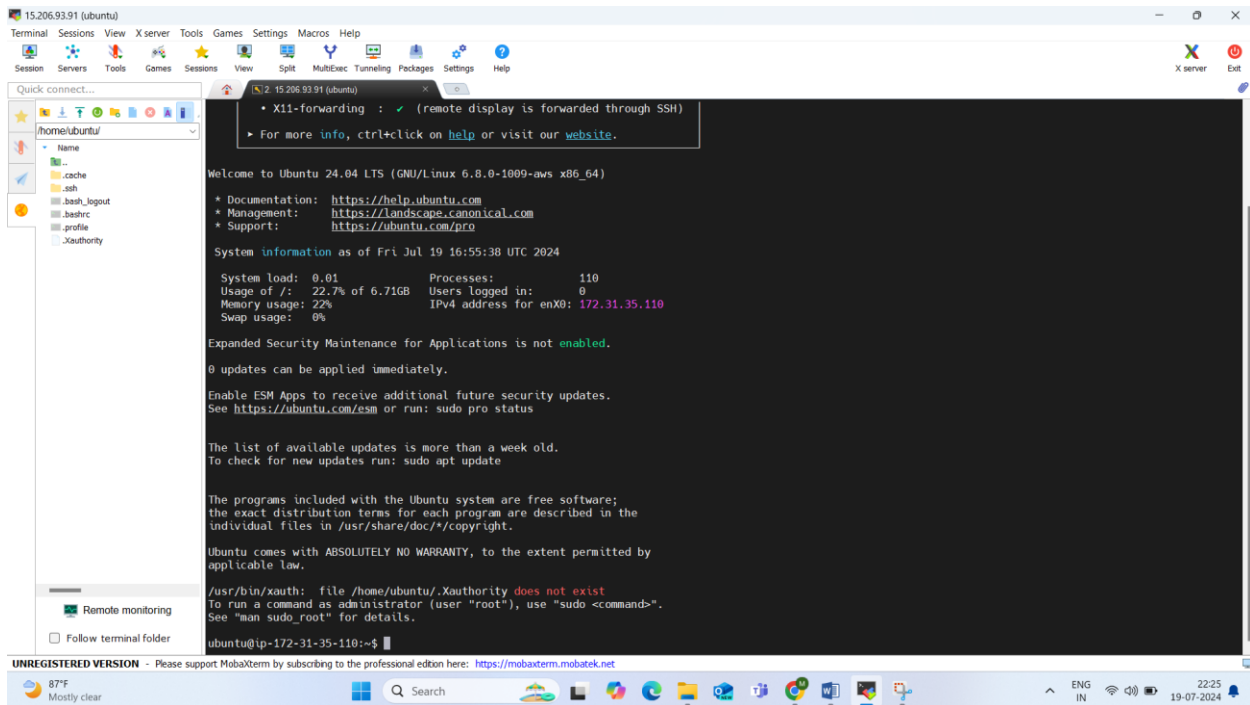
5. L5 - Install Tomcat web application server in AWS EC2 Ubuntu Instance and access Tomcat using a web browser.

Ans:-

First of all login your credential and aws console.

Steps1:- Create EC2 Ubuntu Instance





Step 2: update and install tomcat in Ubuntu

Make system as root user by command “**sudo -i**”

```
ubuntu@ip-172-31-35-110:~$ sudo -i
root@ip-172-31-35-110:~#
```

Update the system server by command “**apt update -y**”

```
root@ip-172-31-35-110:~# apt update -y
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
```

Installing the java command “**apt update -y**”

```
root@ip-172-31-35-110:~# apt-get install openjdk-11-jdk -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  also-technology-conf also-vm-conf at-spi2-common at-spi2-core ca-c
root@ip-172-31-35-110:~# java -version
openjdk version "11.0.23" 2024-04-16
OpenJDK Runtime Environment (build 11.0.23+9-post-Ubuntu-1ubuntu1)
OpenJDK 64-Bit Server VM (build 11.0.23+9-post-Ubuntu-1ubuntu1, mixed mode, sharing)
root@ip-172-31-35-110:~#
```

Download the tomcat from official website by wget command

wget <https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.91/bin/apache-tomcat-9.0.91.tar.gz>

```
root@ip-172-31-35-110:~# wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.91/bin/apache-tomcat-9.0.91.tar.gz
--2024-07-19 17:08:06-- https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.91/bin/apache-tomcat-9.0.91.tar.gz
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 11762988 (11M) [application/x-gzip]
Saving to: 'apache-tomcat-9.0.91.tar.gz'

apache-tomcat-9.0.91.tar.gz      100%[=====]
2024-07-19 17:08:07 (142 MB/s) - 'apache-tomcat-9.0.91.tar.gz' saved [11762988/11762988]

root@ip-172-31-35-110:~#
```

Now extract the tar file by command “tar xvf apache-tomcat-9.0.91.tar.gz”

```
root@ip-172-31-35-110:~# ls
apache-tomcat-9.0.91.tar.gz  snap
root@ip-172-31-35-110:~# tar xvf apache-tomcat-9.0.91.tar.gz
apache-tomcat-9.0.91/conf/
apache-tomcat-9.0.91/conf/catalina.policy
apache-tomcat-9.0.91/conf/catalina.properties
apache-tomcat-9.0.91/conf/context.xml
apache-tomcat-9.0.91/conf/jaspic-providers.xml
```

Now go to “cd apache-tomcat-9.0.91/conf/” and edit the server.xml file and edit port no. as you want to run tomcat in 8080 port no. and save.

```
root@ip-172-31-35-110:~# ls
apache-tomcat-9.0.91  apache-tomcat-9.0.91.tar.gz  snap
root@ip-172-31-35-110:~# cd apache-tomcat-9.0.91/conf/
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/conf# ls
catalina.policy      context.xml          jaspic-providers.xsd  server.xml           tomcat-users.xsd
catalina.properties jaspic-providers.xml logging.properties    tomcat-users.xml     web.xml
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/conf#
```

Vi server.xml

```
Documentation at /docs/config/server.html
-->
<Server port="8080" shutdown="SHUTDOWN">
  <Listener className="org.apache.catalina.startup.VersionLoggerListener" />
  <!-- Security listener. Documentation at /docs/config/listeners.html
  <Listener className="org.apache.catalina.security.SecurityListener" />
```

Now here in this directory of “conf” edit the “tomcat-users.xml” to give admin rights. And save.

```
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/conf# vi tomcat-users.xml
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/conf#
```

```
<role rolename="manager-gui" />
<user username="tomcat" password="tomcat" roles="manager-gui" />
<role rolename="admin-gui" />
<user username="admin" password="admin" roles="manager-gui,admin-gui"/>
```

```
<!--
  <role rolename="tomcat"/>
  <role rolename="role1"/>
  <user username="tomcat" password="<must-be-changed>" roles="tomcat"/>
  <user username="both" password="<must-be-changed>" roles="tomcat,role1"/>
  <user username="role1" password="<must-be-changed>" roles="role1"/>
-->
<role rolename="manager-gui" />
<user username="tomcat" password="tomcat" roles="manager-gui" />
<role rolename="admin-gui" />
<user username="admin" password="admin" roles="manager-gui,admin-gui"/>

</tomcat-users>
"tomcat-users.xml" 61L, 2956B
```

Now go to previous directory

Cd ..

```
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/conf# cd ..
root@ip-172-31-35-110:~/apache-tomcat-9.0.91#
```

Now go to cd webapps/manager/META-INF/ and edit context.xml file to add permission

```
root@ip-172-31-35-110:~/apache-tomcat-9.0.91# ls
BUILDING.txt CONTRIBUTING.md LICENSE NOTICE README.md RELEASE-NOTES RUNNING.txt bin conf lib logs temp webapps work
root@ip-172-31-35-110:~/apache-tomcat-9.0.91# cd webapps/manager/META-INF/
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/webapps/manager/META-INF# ls
context.xml
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/webapps/manager/META-INF# vi context.xml
```

```
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|0:0:0:0:0:0:0:1" />
  <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|
    che(?:\s|$)?|java\.util\.(?:Linked)?HashMap"/>
```

To

```
<Valve className="org.apache.catalina.valves.RemoteAddrValve"
      allow=".*" />
```

```
<Context antiResourceLocking="false" privileged="true" >
  <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
  <Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow=".*" />
  <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|
    apache(?:\$1)?|java\.util\.(?:Linked)?HashMap"/>
</Context>
```

Now again go to bin directory to start stop and start the tomcat

```
cd ../../..
```

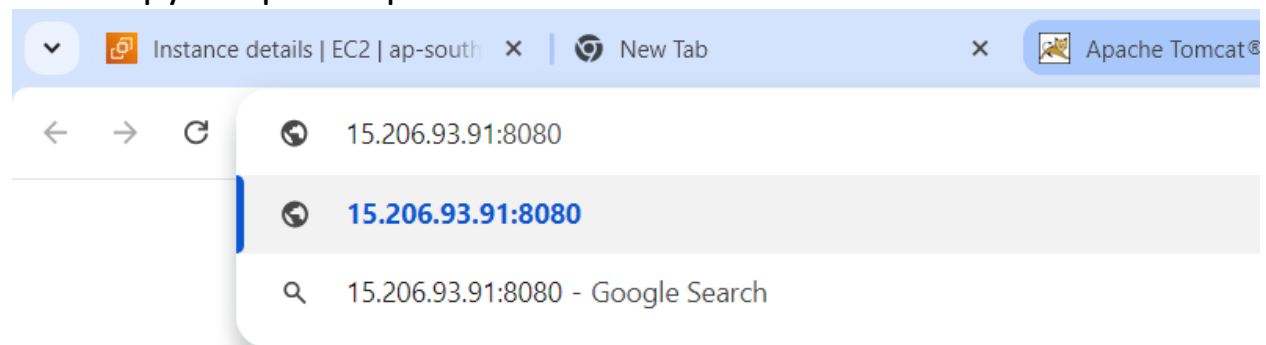
```
cd bin/
```

```
./shutdown.sh
```

```
./startup.sh
```

```
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/bin# ./startup.sh
Using CATALINA_BASE:   /root/apache-tomcat-9.0.91
Using CATALINA_HOME:   /root/apache-tomcat-9.0.91
Using CATALINA_TMPDIR: /root/apache-tomcat-9.0.91/temp
Using JRE_HOME:        /usr
Using CLASSPATH:        /root/apache-tomcat-9.0.91/bin/bootstrap.jar:/root/apache-tomcat-9.0.91/bin
Using CATALINA_OPTS:
Tomcat started.
root@ip-172-31-35-110:~/apache-tomcat-9.0.91/bin#
```

Now copy the public ip of instance:8080 in chrom browser




← → ↻ http://15.206.93.91:8080

Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/9.0.91

If you're seeing this, you've successfully installed Tomcat. Congratulations!

 Recommended Reading:
[Security Considerations How-To](#)
[Manager Application How-To](#)
[Clustering/Session Replication How-To](#)

Server Status
Manager App
Host Manager

Developer Quick Start

Tomcat Setup
First Web Application

Realms & AAA
JDBC DataSources

Examples

Servlet Specifications
Tomcat Versions

Managing Tomcat

For security, access to the **manager webapp** is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 9.0 access to the manager application is split between different users.
[Read more...](#)

[Release Notes](#)
[Changelog](#)
[Migration Guide](#)
[Security Notices](#)

Documentation

[Tomcat 9.0 Documentation](#)
[Tomcat 9.0 Configuration](#)
[Tomcat Wiki](#)

Find additional important configuration information in:

```
$CATALINA_HOME/RUNNING.txt
```

Developers may be interested in:

- Tomcat 9.0 Bug Database
- Tomcat 9.0 JavaDocs
- Tomcat 9.0 Git Repository at GitHub

Getting Help

FAQ and Mailing Lists



The following mailing lists are available:

- tomcat-announce**
Important announcements, releases, security vulnerability notifications. (Low volume).
- tomcat-users**
User support and discussion
- tomcat-dev**
User support and discussion for [Apache Tomcat](#)
- tomcat-dev**
Development mailing list, including commit messages

86°F Mostly clear Search 23:27 19-07-2024

Go to server status ad type credential

← → ↻ http://15.206.93.91:8080/manager/status

Server Status

Manager
[List Applications](#) [HTML Manager Help](#) [Manager Help](#) [Complete Server Status](#)

Server Information

Tomcat Version	JVM Version	JVM Vendor	OS Name	OS Version	OS Architecture	Hostname	IP Address
Apache Tomcat/9.0.91	11.0.23-b-post-Ubuntu-1ubuntu1	Ubuntu	Linux	6.8.0-1009-aws	amd64	ip-172-31-45-226	172.31.45.226

JVM

Free Memory: 11.64 MB Total Memory: 25.51 MB Max Memory: 232.00 MB

Memory Pool	Type	Initial	Total	Maximum	Used
Eden Space	Heap memory	4.31 MIB	7.06 MIB	64.00 MIB	3.32 MIB (5%)
Survivor Space	Heap memory	0.50 MIB	0.87 MIB	8.00 MIB	0.00 MIB (0%)
Tenured Gen	Heap memory	10.68 MIB	17.57 MIB	160.00 MIB	10.54 MIB (6%)
CodeHeap 'non-nmethods'	Non-heap memory	2.43 MIB	2.43 MIB	5.55 MIB	1.21 MIB (21%)
CodeHeap 'non-profiled nmethods'	Non-heap memory	2.43 MIB	2.43 MIB	117.22 MIB	1.14 MIB (0%)
CodeHeap 'profiled nmethods'	Non-heap memory	2.43 MIB	6.37 MIB	117.21 MIB	6.32 MIB (5%)
Compressed Class Space	Non-heap memory	0.00 MIB	2.25 MIB	1024.00 MIB	1.91 MIB (0%)
Metaspace	Non-heap memory	0.00 MIB	10.00 MIB	-0.00 MIB	18.14 MIB

"http-nio-8080"

Max threads: 200 Current thread count: 10 Current threads busy: 1 Keep alive sockets count: 1
Max processing time: 302 ms Processing time: 0.369 s Request count: 12 Error count: 0.00 MB Bytes sent: 0.07 MB

Go to list of application

Message: OK - Undeployed application at context path [/01-Haven-WebApp-StarAgile]

Manager
[List Applications](#) [HTML Manager Help](#) [Manager Help](#) [Server Status](#)

Applications

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/docs	None specified	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/host-manager	None specified	Tomcat Host Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

Deploy

Deploy directory or WAR file located on server

86°F Mostly clear Search 23:30 19-07-2024

No go to war file to deploy → choose file and deploy

Deploy

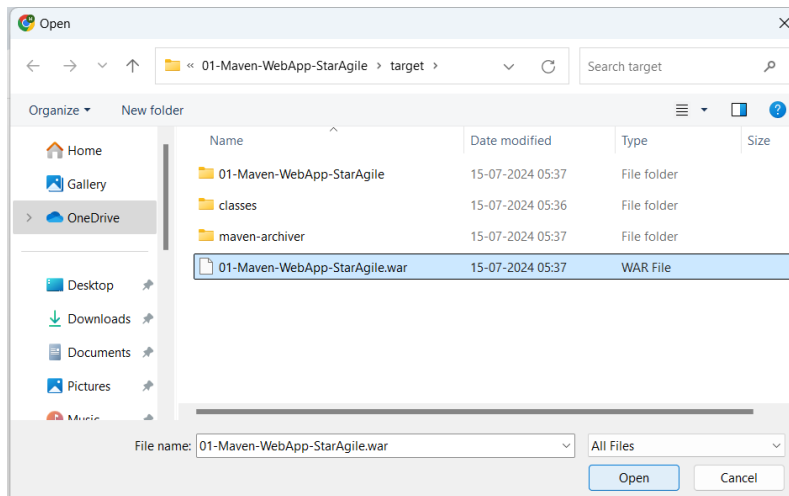
WAR file to deploy

Select WAR file to upload

Choose File

 No file chosen

Deploy



Applications					
Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	<div>Start Stop Reload Undeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/01-Maven-WebApp-StarAgile	None specified	Archetype Created Web Application	true	0	<div>Start Stop Reload Undeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/docs	None specified	Tomcat Documentation	true	0	<div>Start Stop Reload Undeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/examples	None specified	Servlet and JSP Examples	true	0	<div>Start Stop Reload Undeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/host-manager	None specified	Tomcat Host Manager Application	true	0	<div>Start Stop Reload Undeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/manager	None specified	Tomcat Manager Application	true	1	<div>Start Stop Reload Undeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>

Finally you can get desired output

← → ↺

http://15.206.93.91:8080/01-Maven-WebApp-StarAgile/

Hello World!