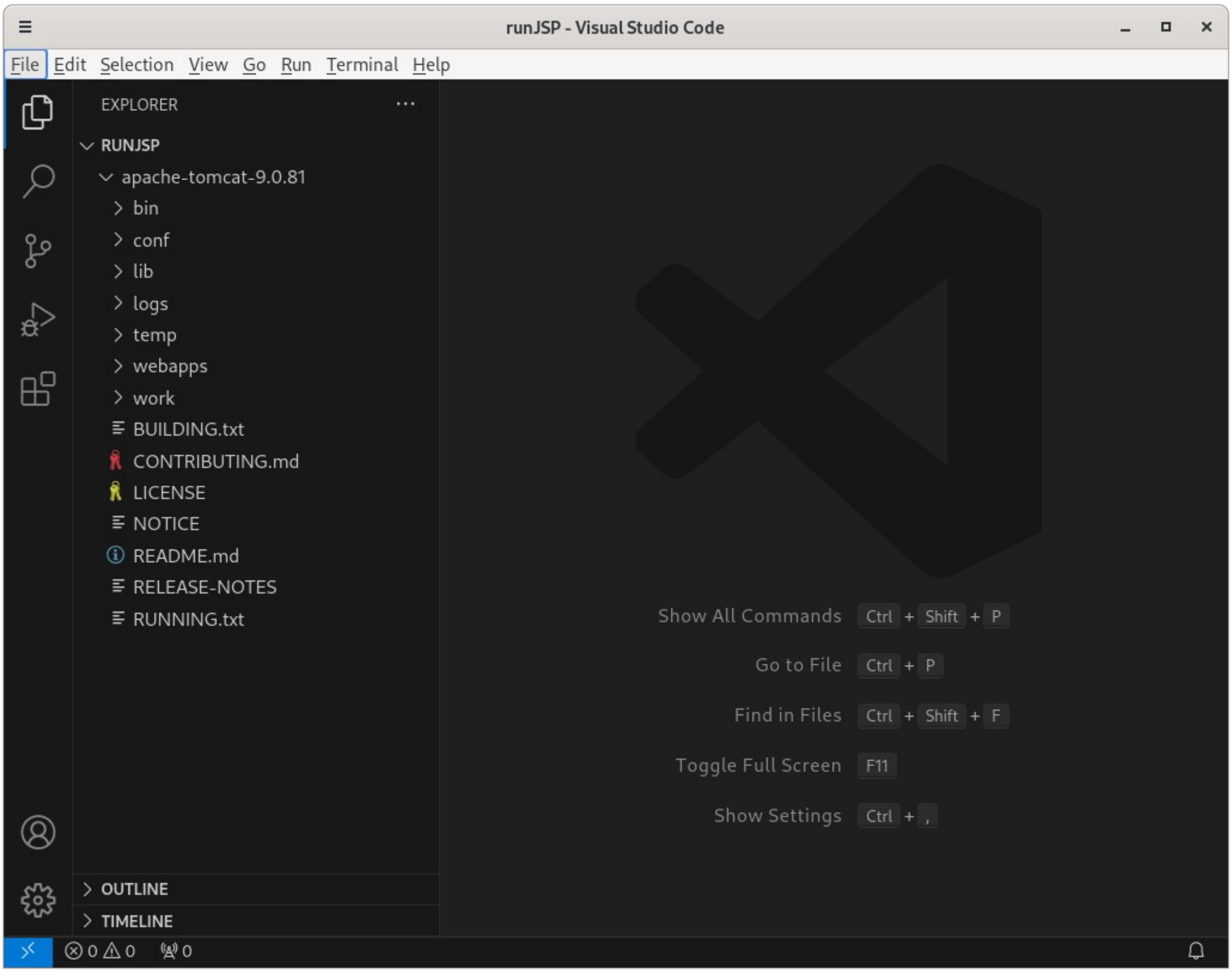
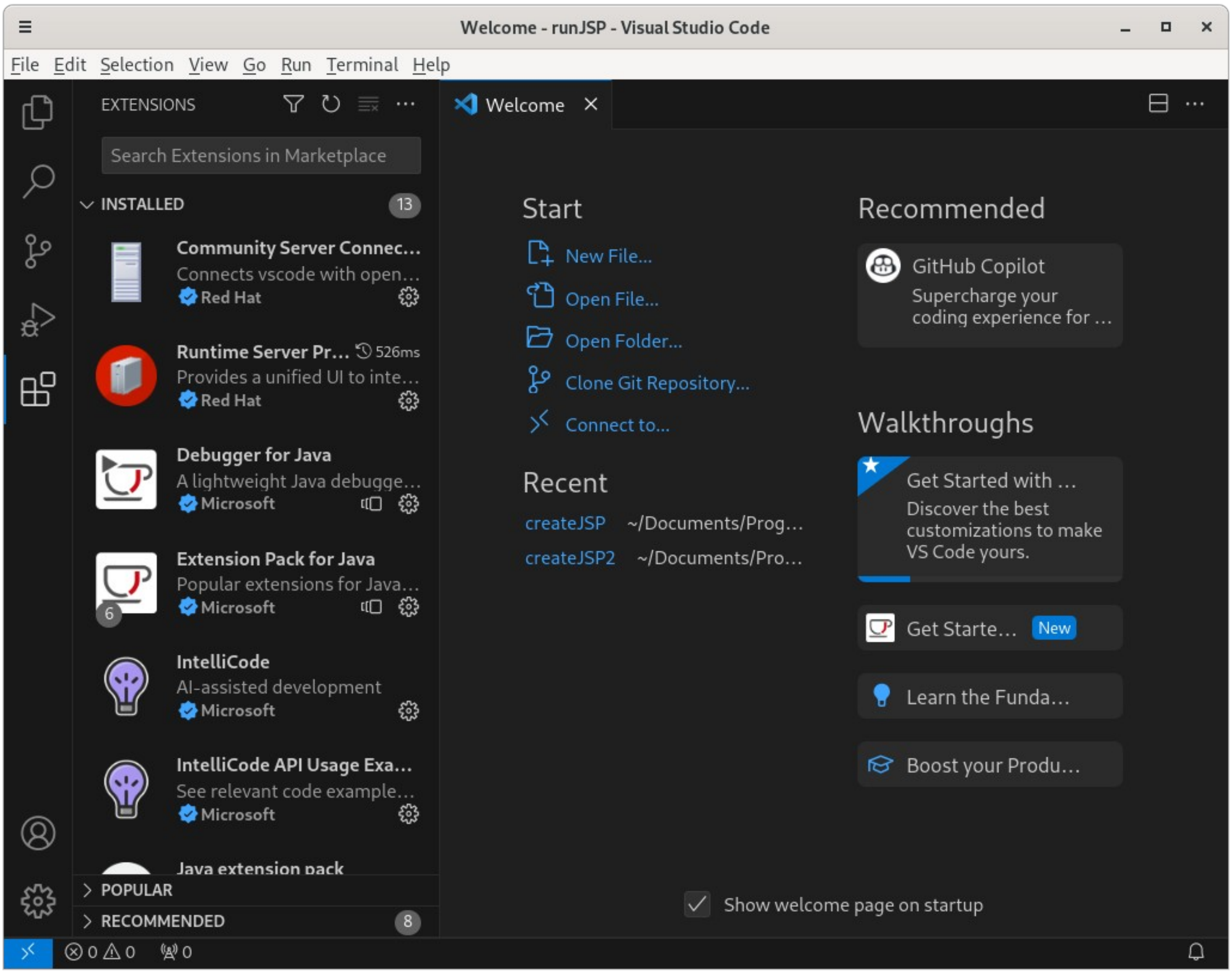
How to run a JSP file in VS Code

1. create a folder "runJSP", download *apache tomcat* into this folder.

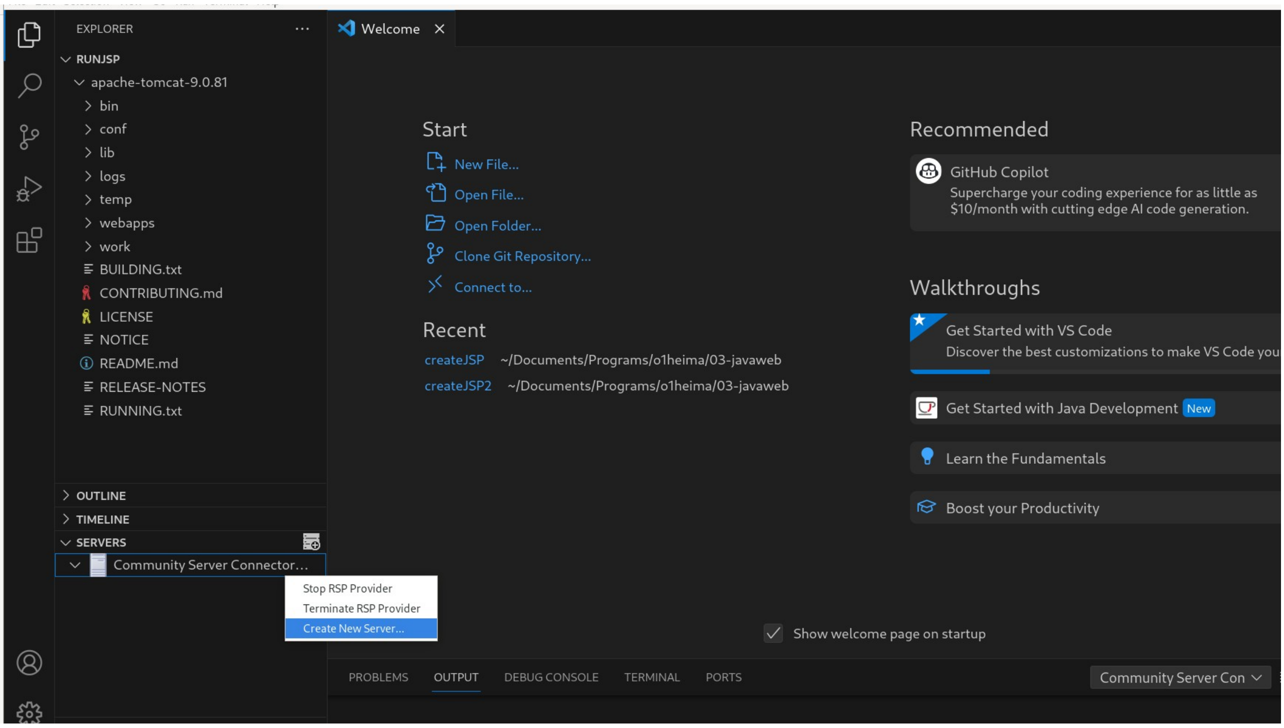
Apache tomcat download website: https://tomcat.apache.org/download-10.cgi



2. install extensions:
“Community Server Connector”, “Java Extension Pack”


Welcome - runJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXTENSIONS
Search Extensions in Marketplace
INSTALLED 13
Community Server Connec…
Connects vscode with open…
Red Hat
Runtime Server Pr… 526ms
Provides a unified UI to inte…
Red Hat
Debugger for Java
A lightweight Java debugge…
Microsoft
Extension Pack for Java
Popular extensions for Java…
Microsoft
6
IntelliCode
AI-assisted development
Microsoft
IntelliCode API Usage Exa…
See relevant code example…
Microsoft
Java extension pack
POPULAR
RECOMMENDED 8
Welcome
Start
New File…
Open File…
Open Folder…
Clone Git Repository…
Connect to…
Recent
createJSP ~/Documents/Prog…
createJSP2 ~/Documents/Pro…
Recommended
GitHub Copilot
Supercharge your coding experience for …
Walkthroughs
Get Started with …
Discover the best customizations to make VS Code yours.
Get Starte… New
Learn the Funda…
Boost your Produ…
Show welcome page on startup
0 0 0

3. “Server” – – right click “Community Server Connector” – – “create new server”



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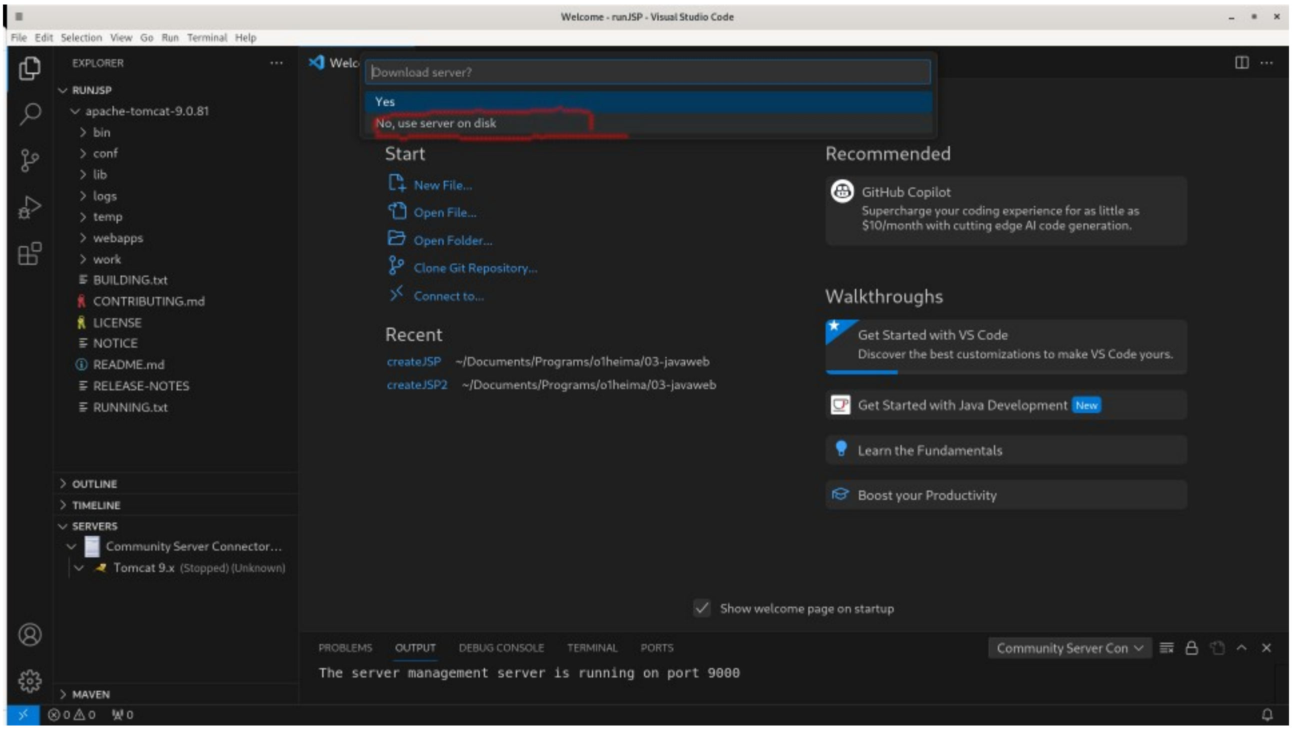

Download server?

Yes

No, use server on disk

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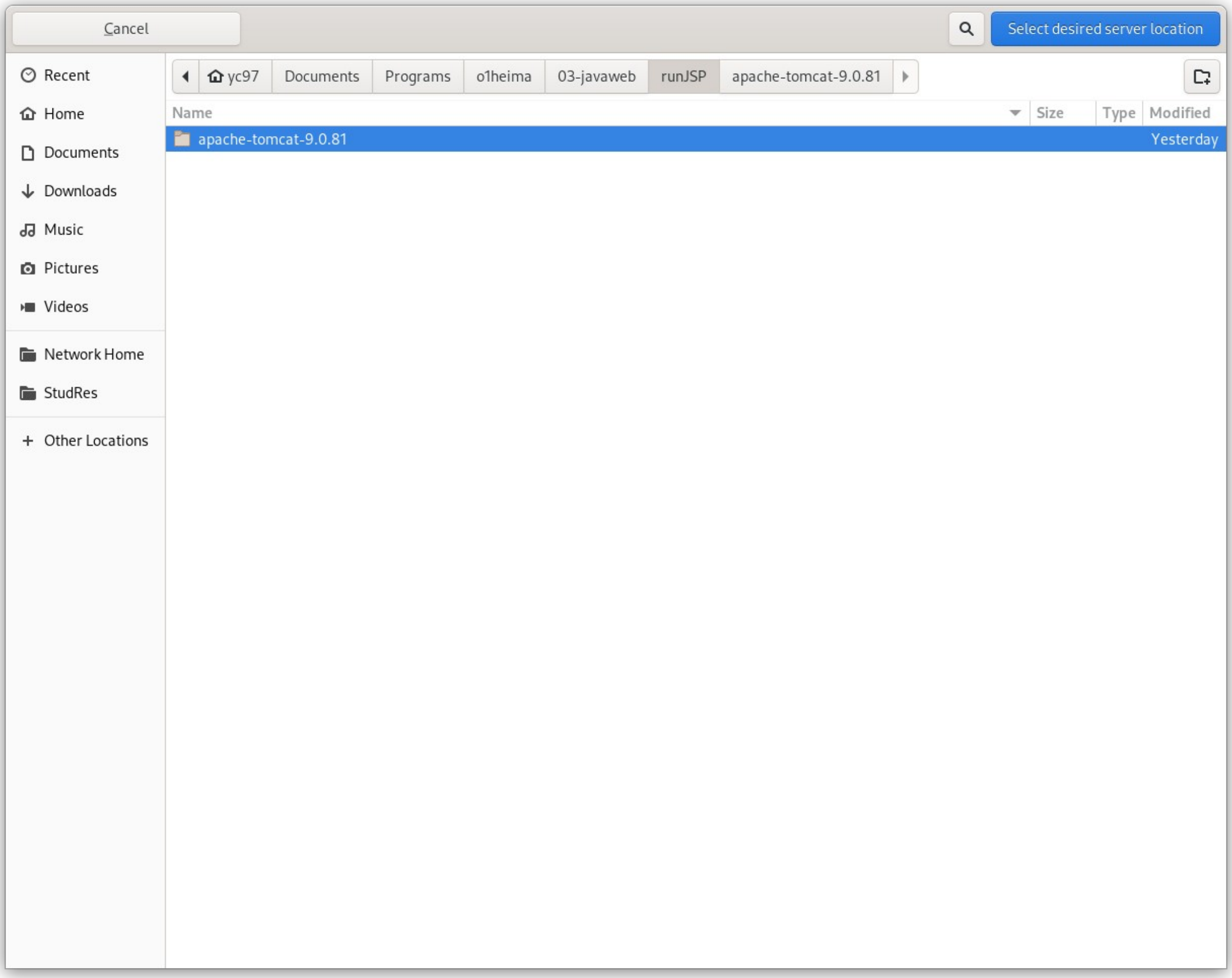
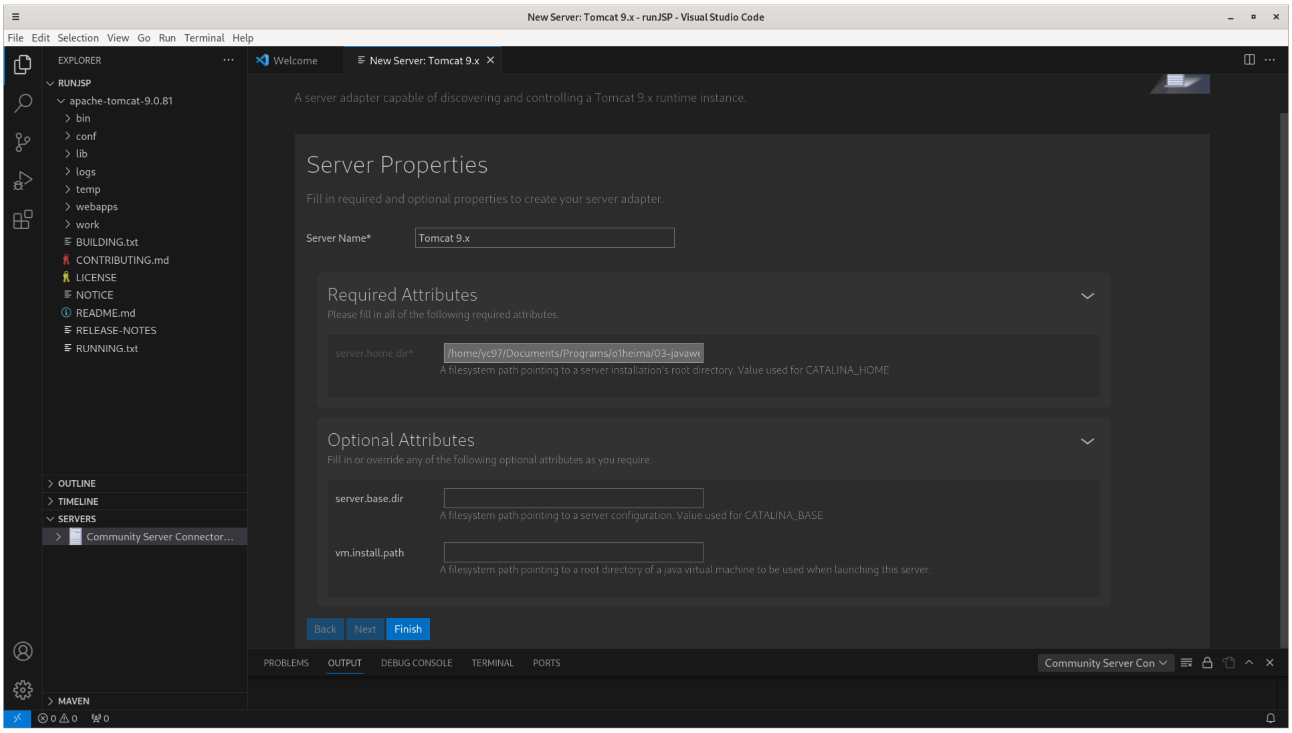
```
The server management server is running on port 9000
```

4. choose the “apache-omcat” file that you download – – “select desired server location”



5. click “finish”



A server adapter capable of discovering and controlling a Tomcat 9.x runtime instance.

Server Properties

Fill in required and optional properties to create your server adapter.

Server Name* Tomcat 9.x

Required Attributes

Please fill in all of the following required attributes.

server.home.dir* /home/yc97/Documents/Programs/o1heima/03-javawe

A filesystem path pointing to a server installation's root directory. Value used for CATALINA_HOME

Optional Attributes

Fill in or override any of the following optional attributes as you require.

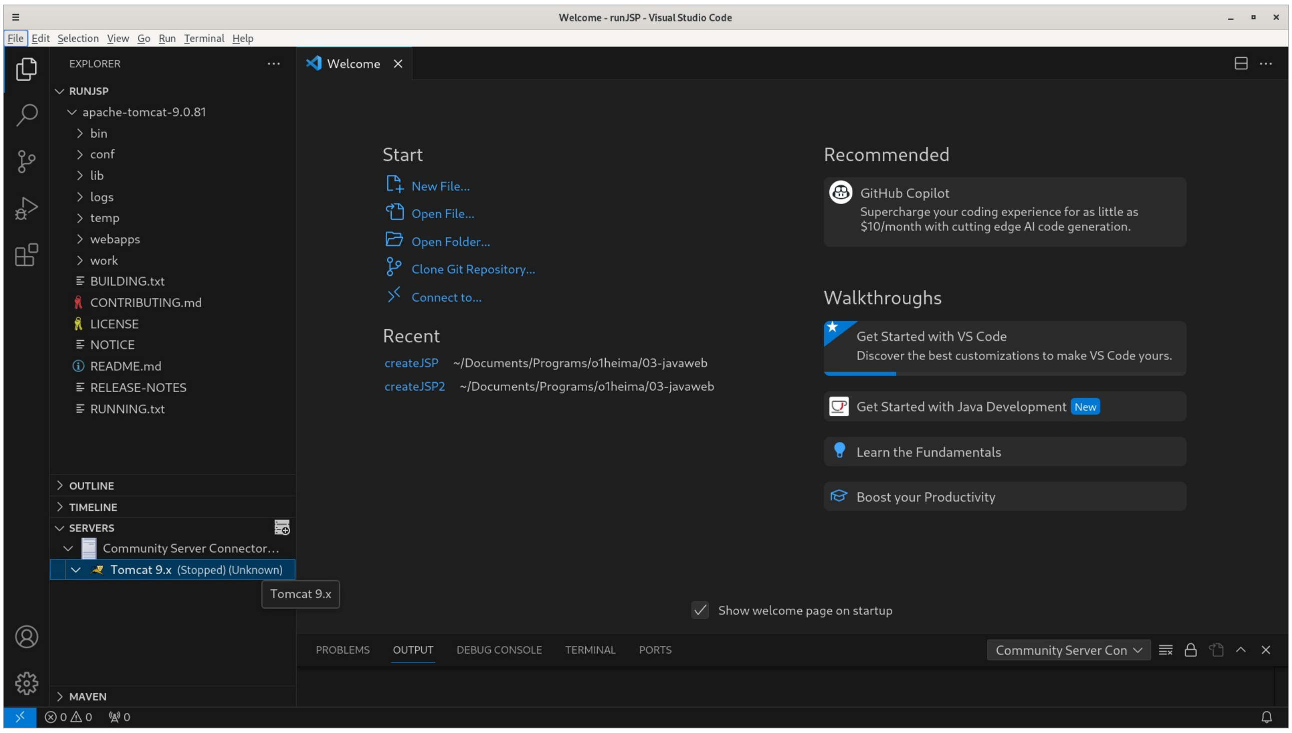
server.base.dir

A filesystem path pointing to a server configuration. Value used for CATALINA_BASE

vm.install.path

A filesystem path pointing to a root directory of a java virtual machine to be used when launching this server.

a new server is created:



Tomcat 9.x (Stopped) (Unknown)

Tomcat 9.x

createJSP ~/Documents/Programs/o1heima/03-javaweb

createJSP2 ~/Documents/Programs/o1heima/03-javaweb

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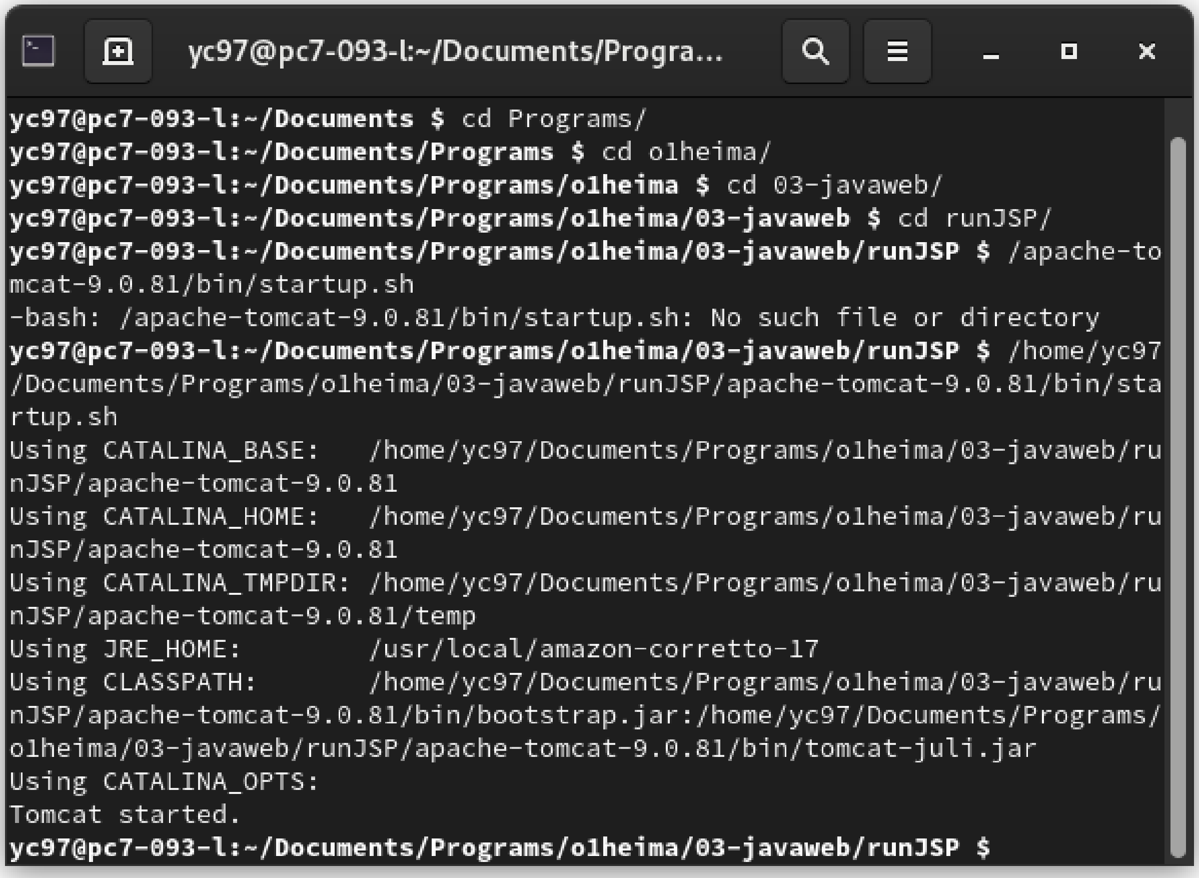
6. start up “apache-tomcat” in terminal
in terminal: $ **cd /runJSP/apache-tomcat-9.0.81/bin/startup.sh**

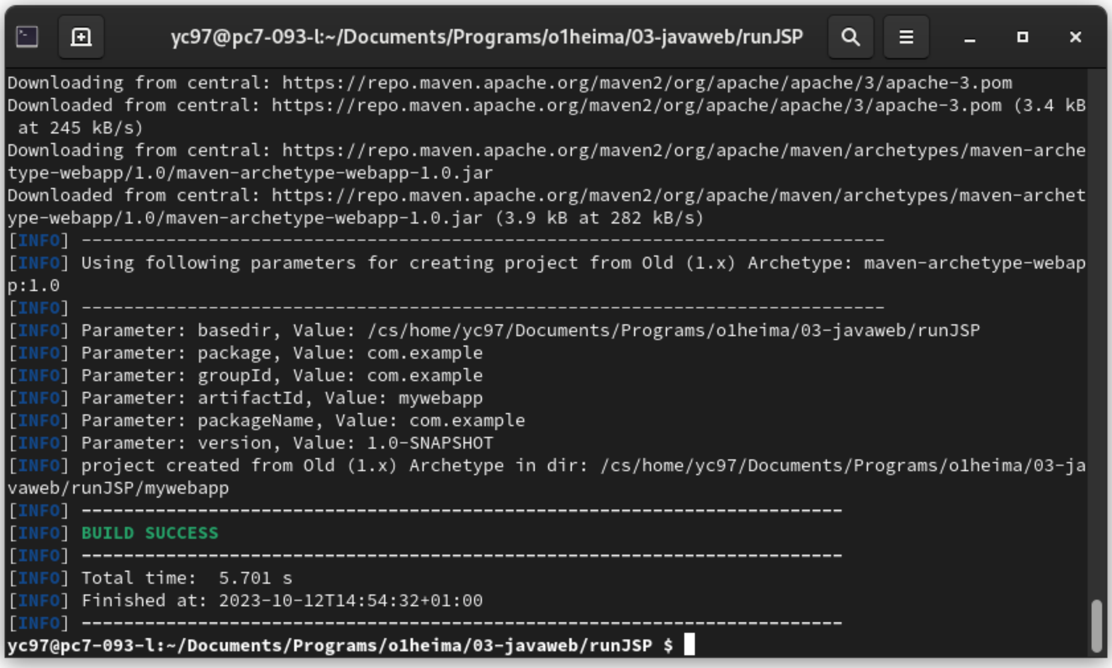


```
yc97@pc7-093-l:~/Documents $ cd Programs/
yc97@pc7-093-l:~/Documents/Programs $ cd o1heima/
yc97@pc7-093-l:~/Documents/Programs/o1heima $ cd 03-javaweb/
yc97@pc7-093-l:~/Documents/Programs/o1heima/03-javaweb $ cd runJSP/
yc97@pc7-093-l:~/Documents/Programs/o1heima/03-javaweb/runJSP $ /apache-to
mcat-9.0.81/bin/startup.sh
-bash: /apache-tomcat-9.0.81/bin/startup.sh: No such file or directory
yc97@pc7-093-l:~/Documents/Programs/o1heima/03-javaweb/runJSP $ /home/yc97
/Documents/Programs/o1heima/03-javaweb/runJSP/apache-tomcat-9.0.81/bin/sta
rtup.sh
Using CATALINA_BASE:   /home/yc97/Documents/Programs/o1heima/03-javaweb/ru
nJSP/apache-tomcat-9.0.81
Using CATALINA_HOME:   /home/yc97/Documents/Programs/o1heima/03-javaweb/ru
nJSP/apache-tomcat-9.0.81
Using CATALINA_TMPDIR: /home/yc97/Documents/Programs/o1heima/03-javaweb/ru
nJSP/apache-tomcat-9.0.81/temp
Using JRE_HOME:        /usr/local/amazon-corretto-17
Using CLASSPATH:       /home/yc97/Documents/Programs/o1heima/03-javaweb/ru
nJSP/apache-tomcat-9.0.81/bin/bootstrap.jar:/home/yc97/Documents/Programs/
o1heima/03-javaweb/runJSP/apache-tomcat-9.0.81/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
yc97@pc7-093-l:~/Documents/Programs/o1heima/03-javaweb/runJSP $
```

it shows “Tomcat started”

7. download maven in terminal:

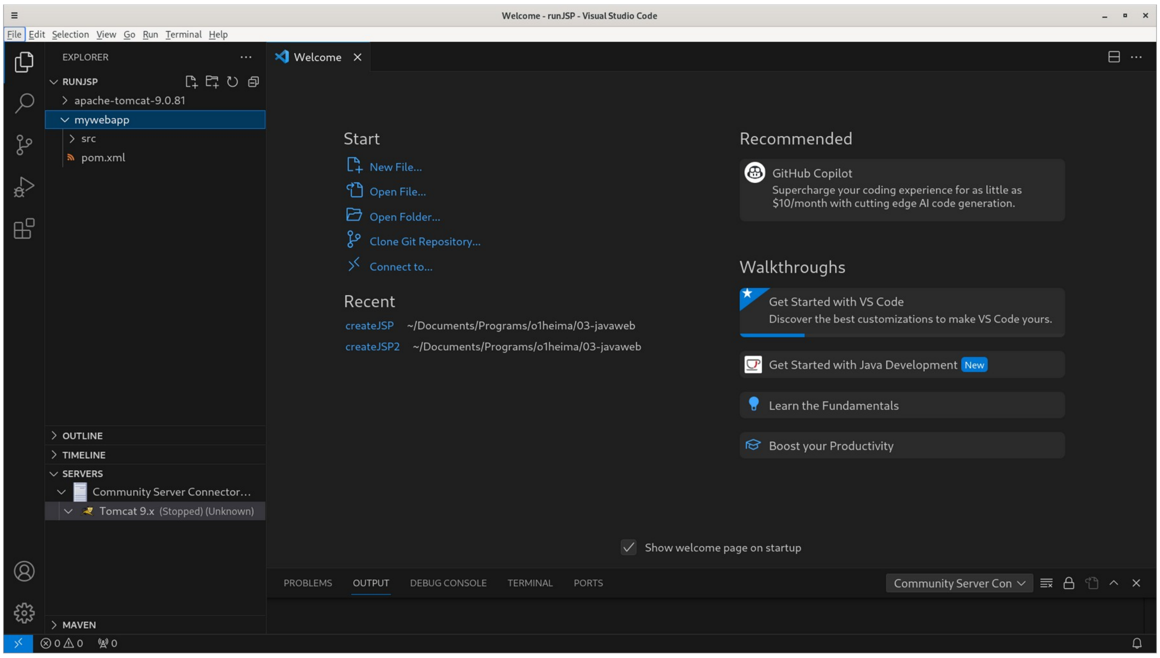
mvn archetype:generate -DgroupId=com.example -DartifactId=mywebapp -DarchetypeArtifactId=maven-archetype-webapp -DinteractiveMode=false



yc97@pc7-093-l:~/Documents/Programs/o1heima/03-javaweb/runJSP

```
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/apache/3/apache-3.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/apache/3/apache-3.pom (3.4 kB
 at 245 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/archetypes/maven-arche
type-webapp/1.0/maven-archetype-webapp-1.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/archetypes/maven-archet
ype-webapp/1.0/maven-archetype-webapp-1.0.jar (3.9 kB at 282 kB/s)
[INFO] ----------------------------------------------------------------------------
[INFO] Using following parameters for creating project from Old (1.x) Archetype: maven-archetype-webap
p:1.0
[INFO] ----------------------------------------------------------------------------
[INFO] Parameter: basedir, Value: /cs/home/yc97/Documents/Programs/olheima/03-javaweb/runJSP
[INFO] Parameter: package, Value: com.example
[INFO] Parameter: groupId, Value: com.example
[INFO] Parameter: artifactId, Value: mywebapp
[INFO] Parameter: packageName, Value: com.example
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] project created from Old (1.x) Archetype in dir: /cs/home/yc97/Documents/Programs/olheima/03-ja
vaweb/runJSP/mywebapp
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  5.701 s
[INFO] Finished at: 2023-10-12T14:54:32+01:00
[INFO] ------------------------------------------------------------------------
yc97@pc7-093-l:~/Documents/Programs/olheima/03-javaweb/runJSP $
```

terminal shows: build success



Welcome - runJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
RUNJSP
apache-tomcat-9.0.81
mywebapp
src
pom.xml
OUTLINE
TIMELINE
SERVERS
Community Server Connector...
Tomcat 9.x (Stopped) (Unknown)
MAVEN
Welcome
Start
New File...
Open File...
Open Folder...
Clone Git Repository...
Connect to...
Recent
createJSP ~/Documents/Programs/o1heima/03-javaweb
createJSP2 ~/Documents/Programs/o1heima/03-javaweb
Recommended
GitHub Copilot
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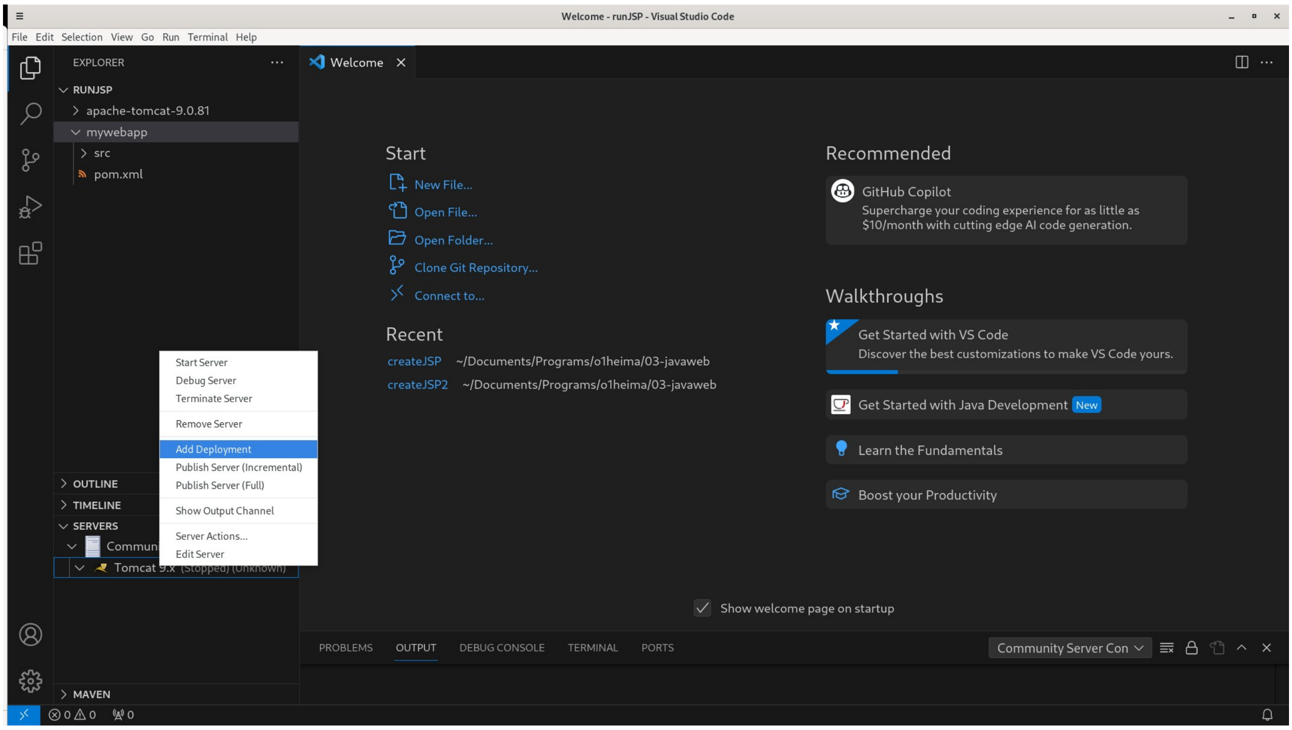
Learn the Fundamentals
Boost your Productivity
Show welcome page on startup
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Community Server Con

a new directory “mywebapp” is created, it contains src direcotry and a pom.xml file.

8. on vscode, “Server” – – “Community Server Connector” – – “Tomcat 9.x” : right click “Tomcat 9.x” and choose “add deployment” – “File”, choose the mywebapp/pom.xml file.


Welcome - runJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
RUNJSP
apache-tomcat-9.0.81
mywebapp
src
pom.xml
Welcome
Start
New File...
Open File...
Open Folder...
Clone Git Repository...
Connect to...
Recent
createJSP ~/Documents/Programs/o1heima/03-javaweb
createJSP2 ~/Documents/Programs/o1heima/03-javaweb
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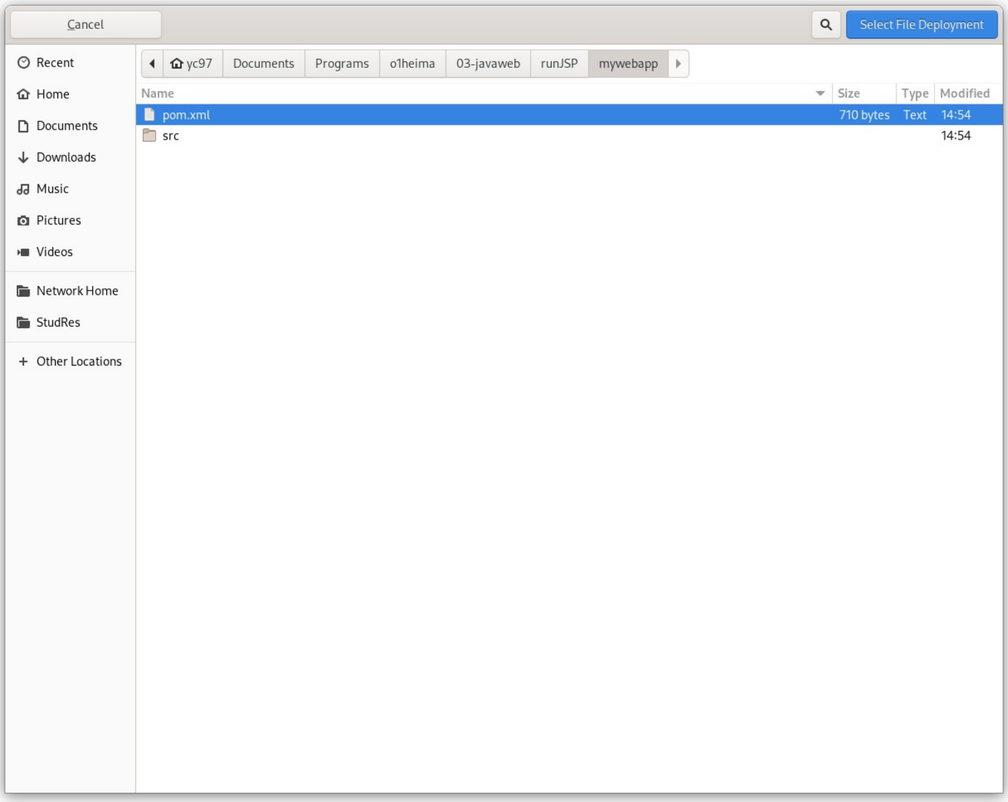
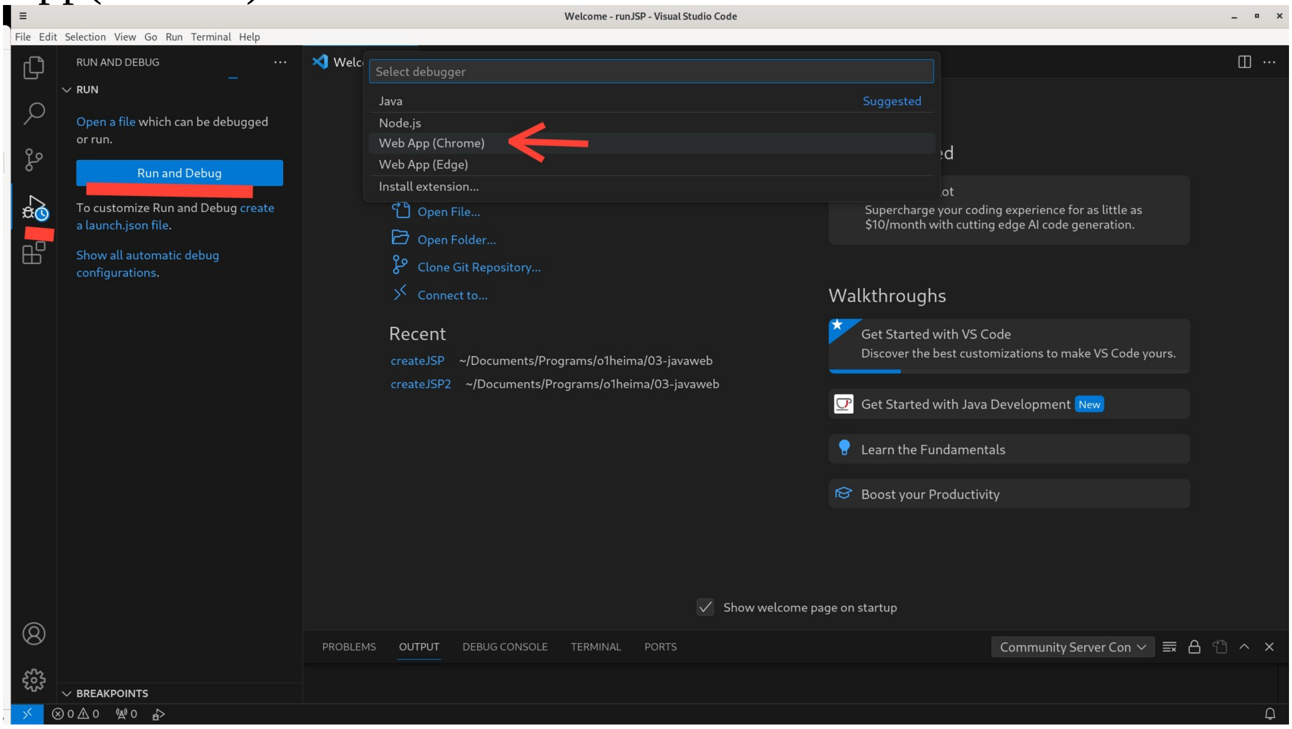
Learn the Fundamentals
Boost your Productivity
Start Server
Debug Server
Terminate Server
Remove Server
Add Deployment
Publish Server (Incremental)
Publish Server (Full)
Show Output Channel
Server Actions...
Edit Server
OUTLINE
TIMELINE
SERVERS
Commun
Tomcat 9.x (Stopped) (Unknown)
Show welcome page on startup
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Community Server Con
MAVEN
⊗ 0 ⚠ 0 0



1

9.
page “run and debug”, click “run and debug”, then click “Web App(chrome)”



Open a file which can be debugged or run.

To customize Run and Debug create a launch.json file.

Show all automatic debug configurations.

createJSP ~/Documents/Programs/o1heima/03-javaweb
createJSP2 ~/Documents/Programs/o1heima/03-javaweb

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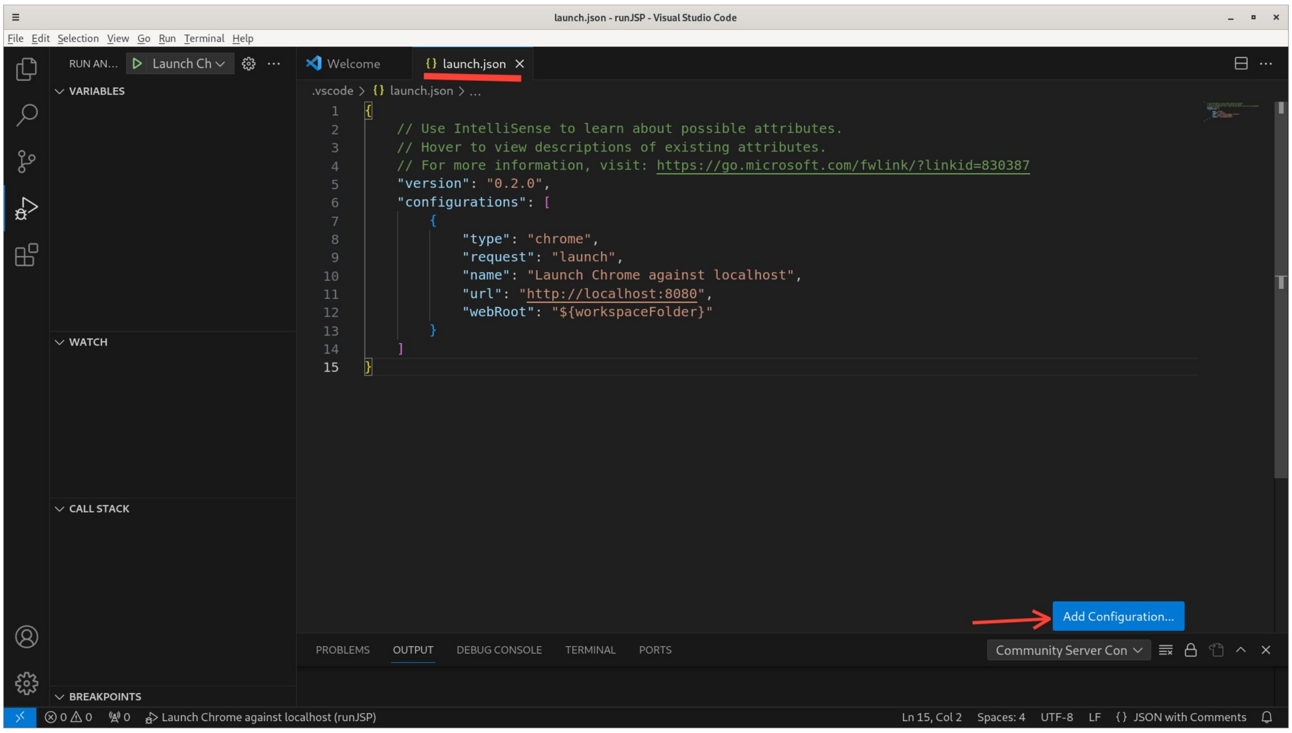
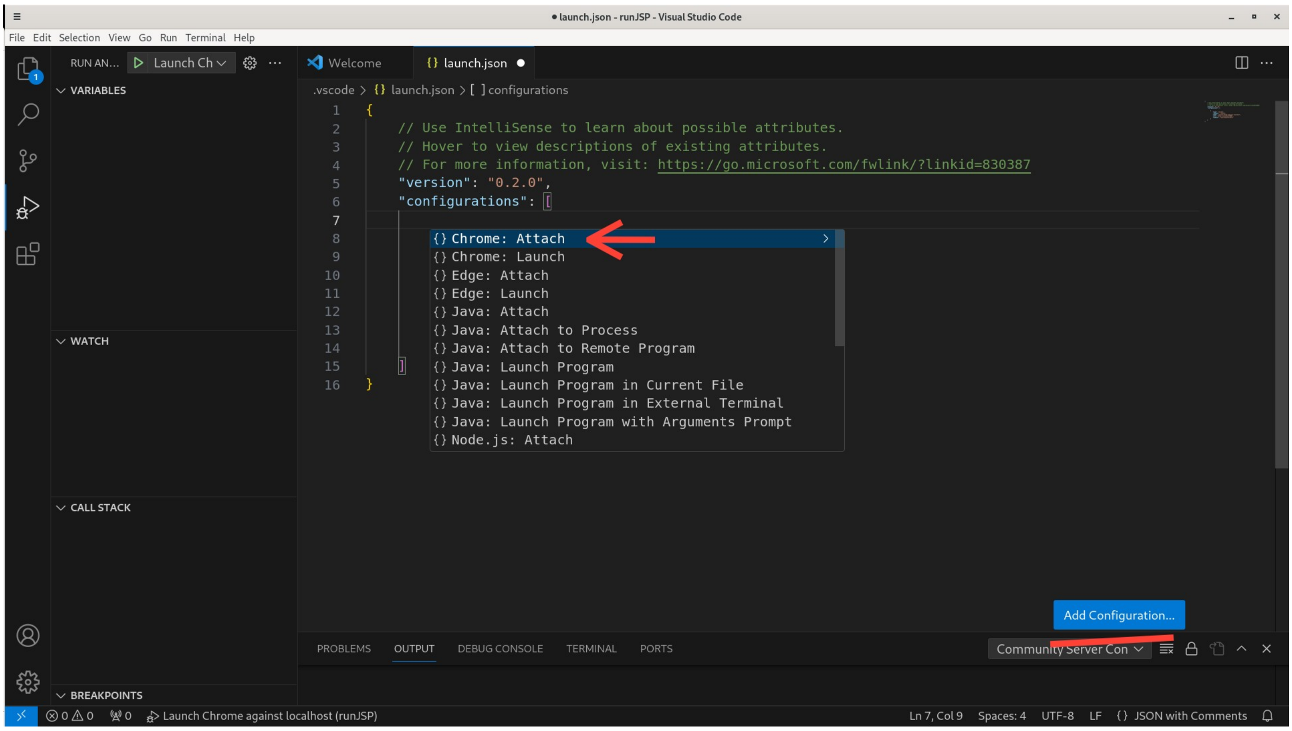
after click it, it shows a new page: “launch.json”, click “add configuration”



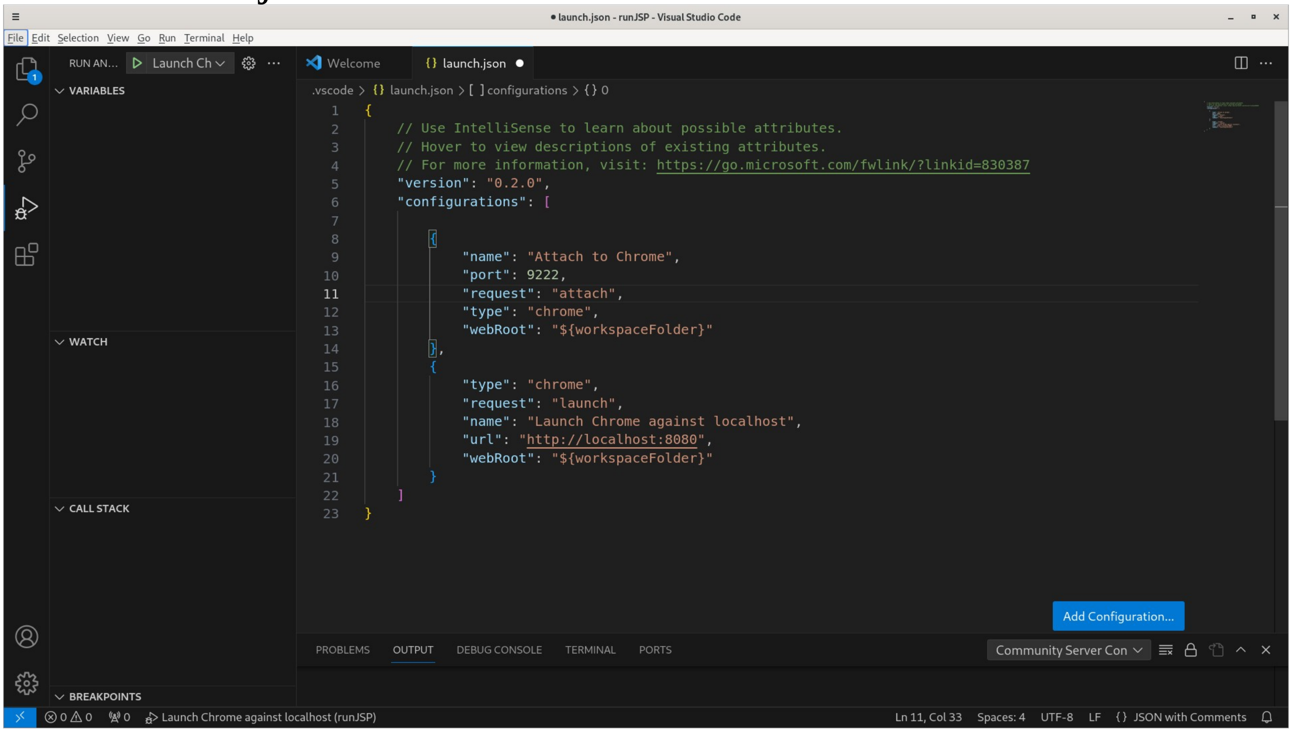
```
{
    // Use IntelliSense to learn about possible attributes.
    // Hover to view descriptions of existing attributes.
    // For more information, visit: https://go.microsoft.com/fwlink/?linkid=830387
    "version": "0.2.0",
    "configurations": [
        {
            "type": "chrome",
            "request": "launch",
            "name": "Launch Chrome against localhost",
            "url": "http://localhost:8080",
            "webRoot": "${workspaceFolder}"
        }
    ]
}
```

10. “add configuration” – “{}chrome: Attach”


• launch.json - runJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
RUN AN... Launch Ch
VARIABLES
WATCH
CALL STACK
BREAKPOINTS
Welcome
launch.json
.vscode > {} launch.json > [ ] configurations
{} Chrome: Attach
{} Chrome: Launch
{} Edge: Attach
{} Edge: Launch
{} Java: Attach
{} Java: Attach to Process
{} Java: Attach to Remote Program
{} Java: Launch Program
{} Java: Launch Program in Current File
{} Java: Launch Program in External Terminal
{} Java: Launch Program with Arguments Prompt
{} Node.js: Attach
Add Configuration...
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Community Server Con
⊗ 0 ⚠ 0 0 Launch Chrome against localhost (runJSP)
Ln 7, Col 9 Spaces: 4 UTF-8 LF {} JSON with Comments

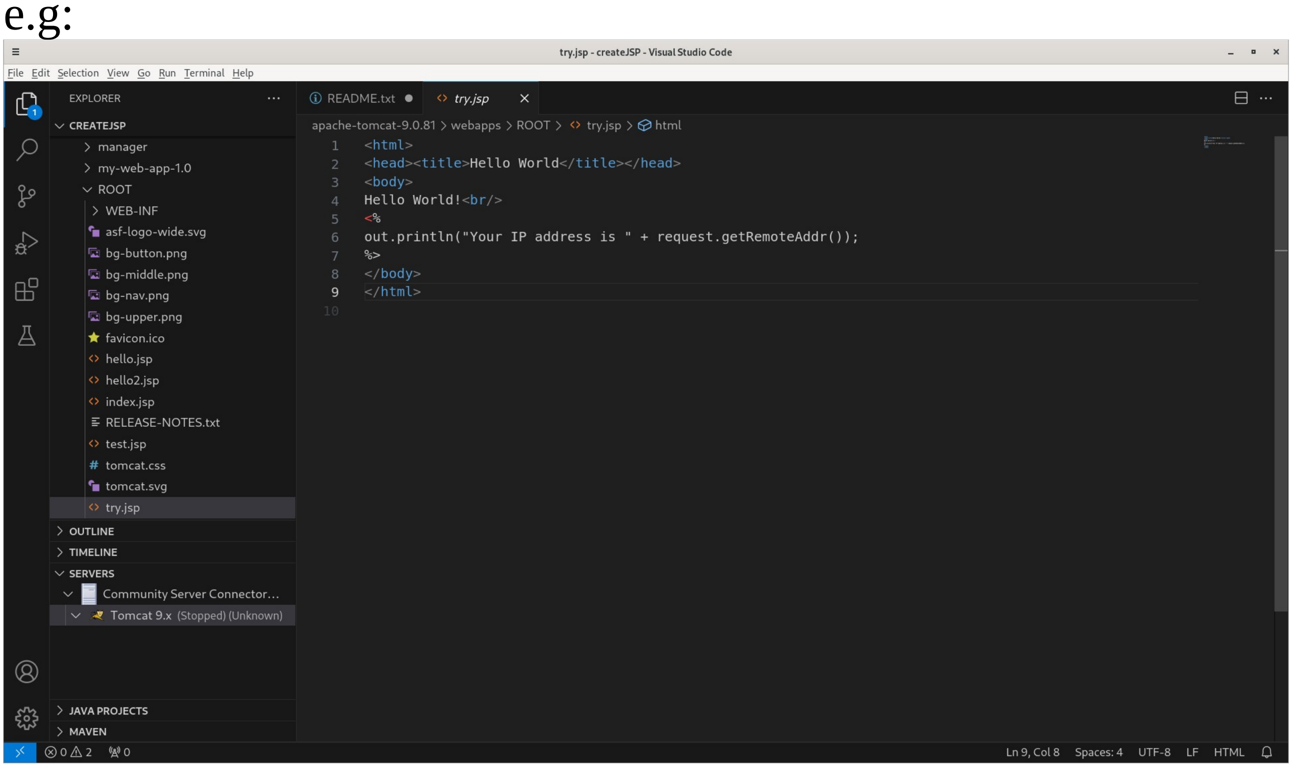
```
{
    // Use IntelliSense to learn about possible attributes.
    // Hover to view descriptions of existing attributes.
    // For more information, visit: https://go.microsoft.com/fwlink/?linkid=830387
    "version": "0.2.0",
    "configurations": [

    ]
}
```

now “launch.json” looks like this:


• launch.json - runJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
RUN AN... Launch Ch
VARIABLES
WATCH
CALL STACK
BREAKPOINTS
Welcome
launch.json
.vscode > {} launch.json > [ ] configurations > {} 0
Add Configuration...
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Community Server Con
⊗ 0 ⚠ 0 0 Launch Chrome against localhost (runJSP)
Ln 11, Col 33 Spaces: 4 UTF-8 LF {} JSON with Comments

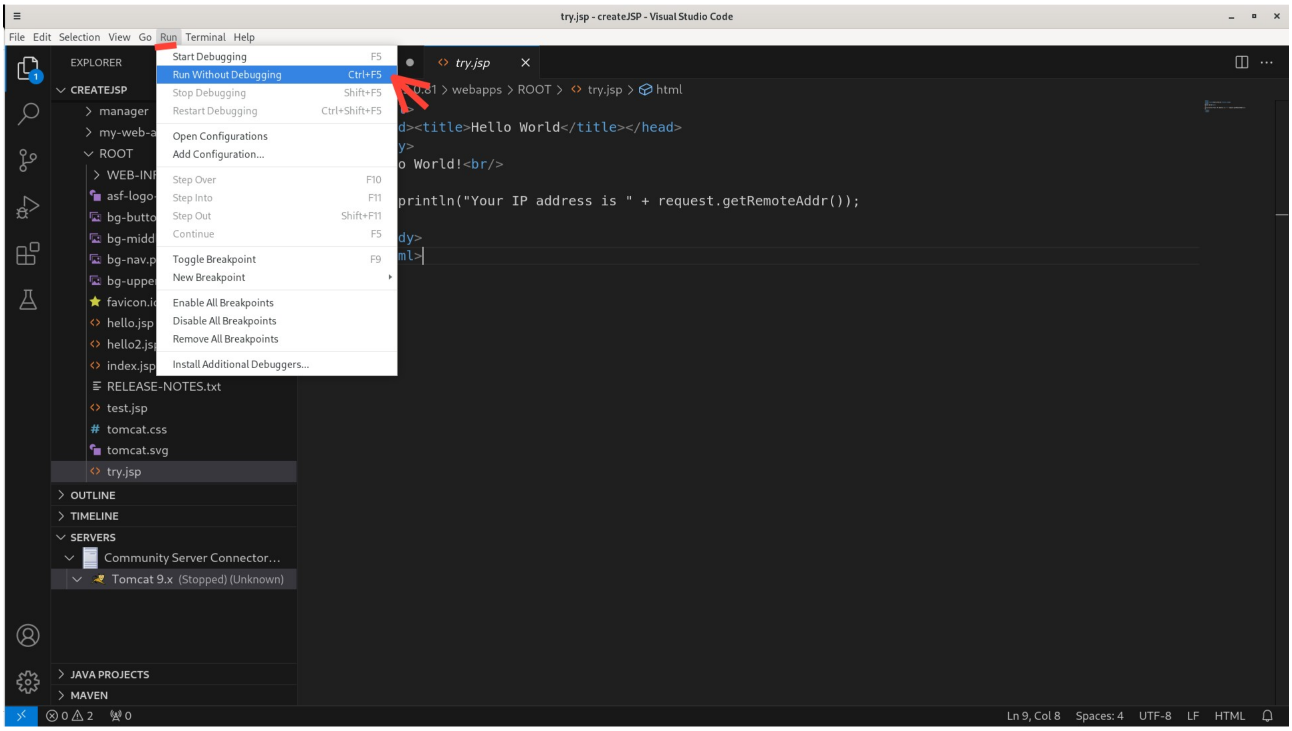
```
{
    // Use IntelliSense to learn about possible attributes.
    // Hover to view descriptions of existing attributes.
    // For more information, visit: https://go.microsoft.com/fwlink/?linkid=830387
    "version": "0.2.0",
    "configurations": [

        {
            "name": "Attach to Chrome",
            "port": 9222,
            "request": "attach",
            "type": "chrome",
            "webRoot": "${workspaceFolder}"
        },
        {
            "type": "chrome",
            "request": "launch",
            "name": "Launch Chrome against localhost",
            "url": "http://localhost:8080",
            "webRoot": "${workspaceFolder}"
        }
    ]
}
```

11.
create .jsp file under /apache-tomcat-9.0.81/webapps/ROOT/ directory.
e.g:



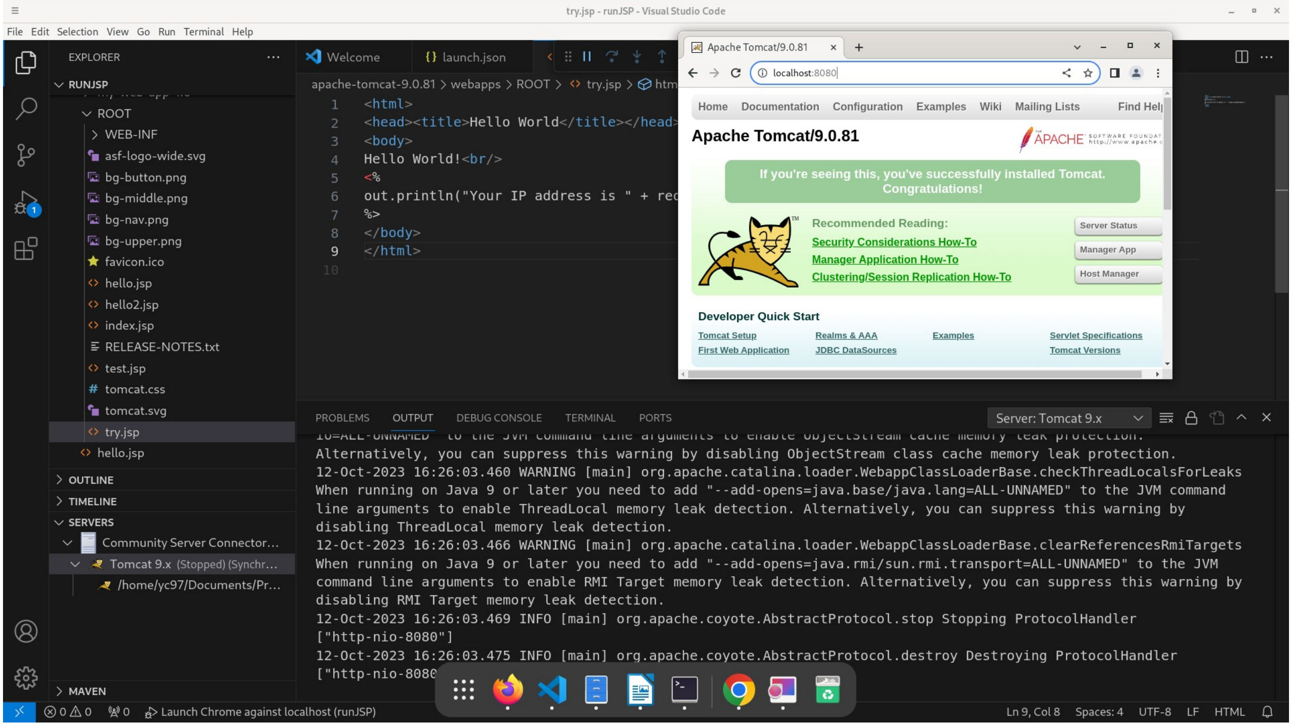
```
<html>
<head><title>Hello World</title></head>
<body>
Hello World!<br/>
<%
out.println("Your IP address is " + request.getRemoteAddr());
%>
</body>
</html>
```

after create the file, click menu “Run” – – “Run without debugging”



try.jsp - createJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
Start Debugging F5
Run Without Debugging Ctrl+F5
Stop Debugging Shift+F5
Restart Debugging Ctrl+Shift+F5
Open Configurations
Add Configuration...
Step Over F10
Step Into F11
Step Out Shift+F11
Continue F5
Toggle Breakpoint F9
New Breakpoint
Enable All Breakpoints
Disable All Breakpoints
Remove All Breakpoints
Install Additional Debuggers...
SERVERS
Community Server Connector...
Tomcat 9.x (Stopped) (Unknown)
Ln 9, Col 8 Spaces: 4 UTF-8 LF HTML

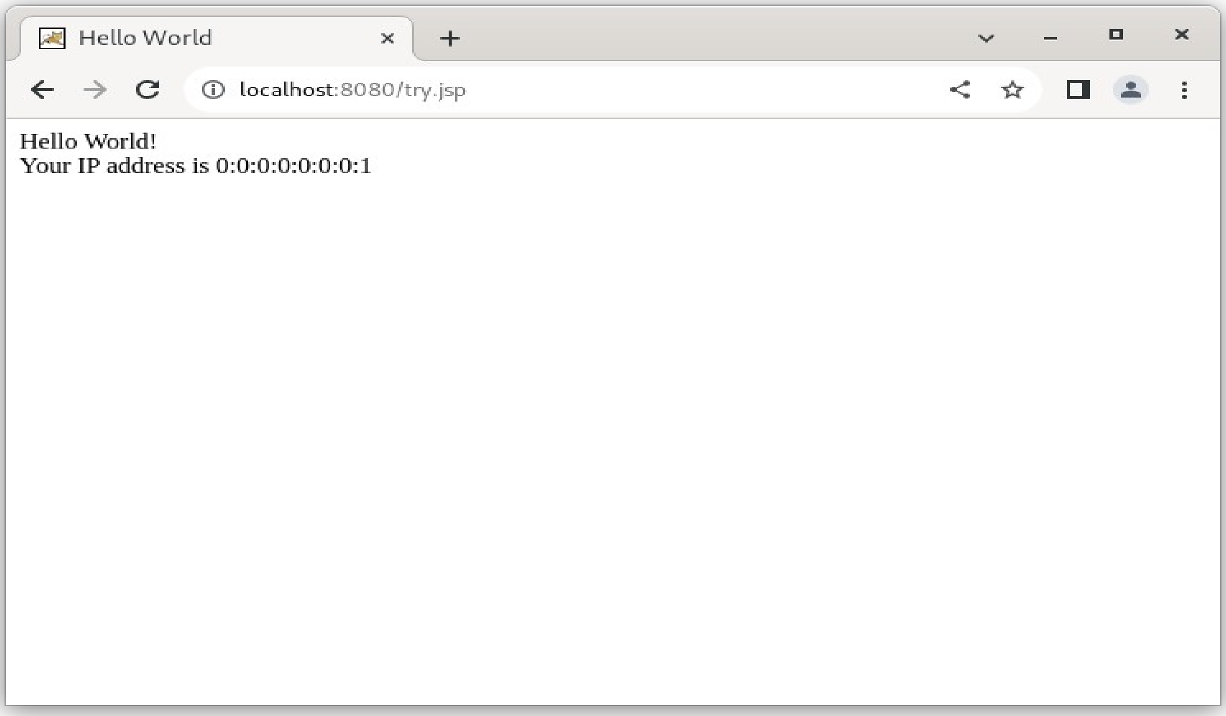
12.
a tomcat page is created when running the .jsp file


try.jsp - runJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
RUNJSP
ROOT
WEB-INF
asf-logo-wide.svg
bg-button.png
bg-middle.png
bg-nav.png
bg-upper.png
favicon.ico
hello.jsp
hello2.jsp
index.jsp
RELEASE-NOTES.txt
test.jsp
tomcat.css
tomcat.svg
try.jsp
hello.jsp
OUTLINE
TIMELINE
SERVERS
Community Server Connector...
Tomcat 9.x (Stopped) (Synchr...
/home/yc97/Documents/Pr...
MAVEN
Welcome
launch.json
apache-tomcat-9.0.81 > webapps > ROOT > try.jsp > htm
Apache Tomcat/9.0.81
localhost:8080
Home Documentation Configuration Examples Wiki Mailing Lists Find Help
Apache Tomcat/9.0.81
APACHE SOFTWARE FOUNDATION http://www.apache.org/
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
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Server: Tomcat 9.x
0 0 0 Launch Chrome against localhost (runJSP)
Ln 9, Col 8 Spaces: 4 UTF-8 LF HTML

```
<html>
<head><title>Hello World</title></head>
<body>
Hello World!<br/>
<%
out.println("Your IP address is " + rec
%>
</body>
</html>
```

```
io=ALL-UNNAMED" to the JVM command line arguments to enable ObjectStream cache memory leak protection.
Alternatively, you can suppress this warning by disabling ObjectStream class cache memory leak protection.
12-Oct-2023 16:26:03.460 WARNING [main] org.apache.catalina.loader.WebappClassLoaderBase.checkThreadLocalsForLeaks
When running on Java 9 or later you need to add "--add-opens=java.base/java.lang=ALL-UNNAMED" to the JVM command
line arguments to enable ThreadLocal memory leak detection. Alternatively, you can suppress this warning by
disabling ThreadLocal memory leak detection.
12-Oct-2023 16:26:03.466 WARNING [main] org.apache.catalina.loader.WebappClassLoaderBase.clearReferencesRmiTargets
When running on Java 9 or later you need to add "--add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED" to the JVM
command line arguments to enable RMI Target memory leak detection. Alternatively, you can suppress this warning by
disabling RMI Target memory leak detection.
12-Oct-2023 16:26:03.469 INFO [main] org.apache.coyote.AbstractProtocol.stop Stopping ProtocolHandler
["http-nio-8080"]
12-Oct-2023 16:26:03.475 INFO [main] org.apache.coyote.AbstractProtocol.destroy Destroying ProtocolHandler
["http-nio-8080
```

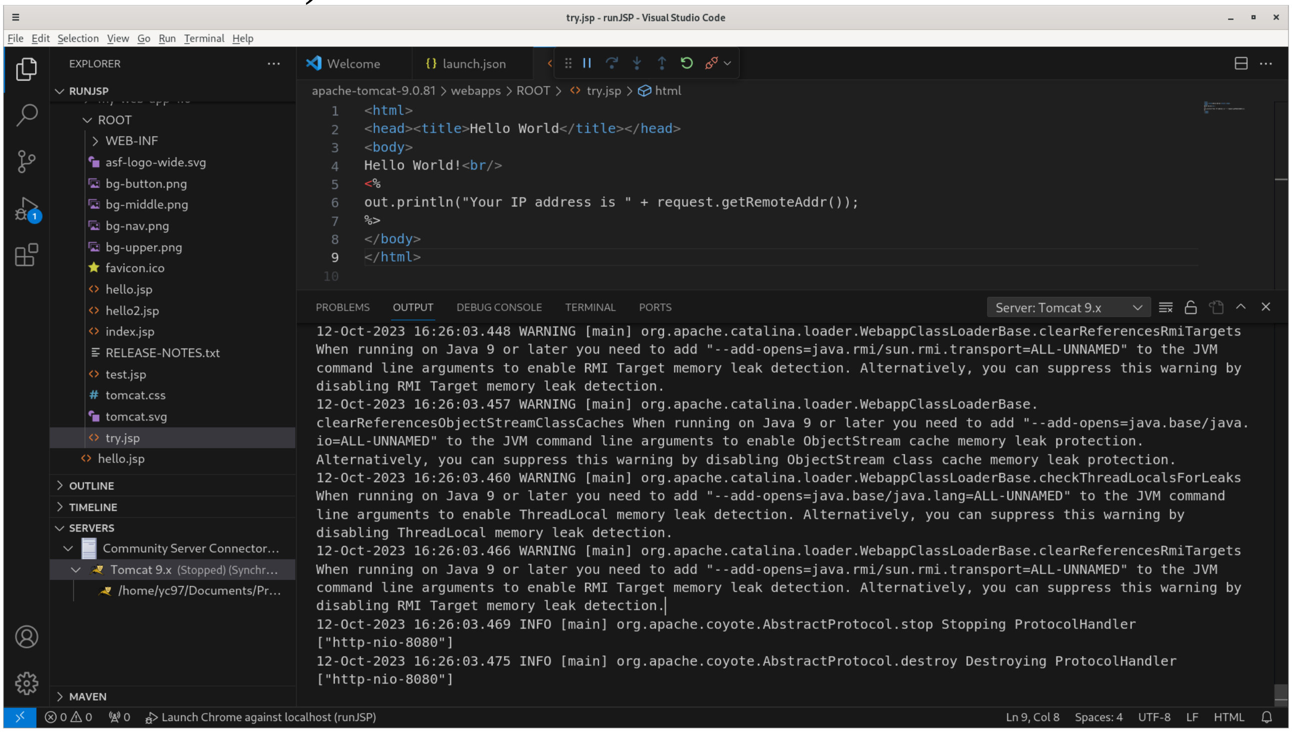
13. in web broswer, if you type : http://localhost:8080/try.jsp



Hello World!
Your IP address is 0:0:0:0:0:0:0:1

14. connect tomcat on vs code successfully!

If something goes wrong, please check :
(1). you start the server (the VS Code terminal looks like this if the server is started)



```
<html>
<head><title>Hello World</title></head>
<body>
Hello World!<br/>
<%
out.println("Your IP address is " + request.getRemoteAddr());
%>
</body>
</html>

```

```
12-Oct-2023 16:26:03.448 WARNING [main] org.apache.catalina.loader.WebappClassLoaderBase.clearReferencesRmiTargets
When running on Java 9 or later you need to add "--add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED" to the JVM
command line arguments to enable RMI Target memory leak detection. Alternatively, you can suppress this warning by
disabling RMI Target memory leak detection.
12-Oct-2023 16:26:03.457 WARNING [main] org.apache.catalina.loader.WebappClassLoaderBase.
clearReferencesObjectStreamClassCaches When running on Java 9 or later you need to add "--add-opens=java.base/java.
io=ALL-UNNAMED" to the JVM command line arguments to enable ObjectStream cache memory leak protection.
Alternatively, you can suppress this warning by disabling ObjectStream class cache memory leak protection.
12-Oct-2023 16:26:03.460 WARNING [main] org.apache.catalina.loader.WebappClassLoaderBase.checkThreadLocalsForLeaks
When running on Java 9 or later you need to add "--add-opens=java.base/java.lang=ALL-UNNAMED" to the JVM command
line arguments to enable ThreadLocal memory leak detection. Alternatively, you can suppress this warning by
disabling ThreadLocal memory leak detection.
12-Oct-2023 16:26:03.466 WARNING [main] org.apache.catalina.loader.WebappClassLoaderBase.clearReferencesRmiTargets
When running on Java 9 or later you need to add "--add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED" to the JVM
command line arguments to enable RMI Target memory leak detection. Alternatively, you can suppress this warning by
disabling RMI Target memory leak detection.
12-Oct-2023 16:26:03.469 INFO [main] org.apache.coyote.AbstractProtocol.stop Stopping ProtocolHandler
["http-nio-8080"]
12-Oct-2023 16:26:03.475 INFO [main] org.apache.coyote.AbstractProtocol.destroy Destroying ProtocolHandler
["http-nio-8080"]
```

(2) the .jsp file is in correct location:
/runJSP/apache-tomcat-9.0.81/webapps/ROOT/

(3) make sure you download maven and a pom.xml is created.

(4) the http address format is correct.
e.g: http://localhost:8080/try.jsp

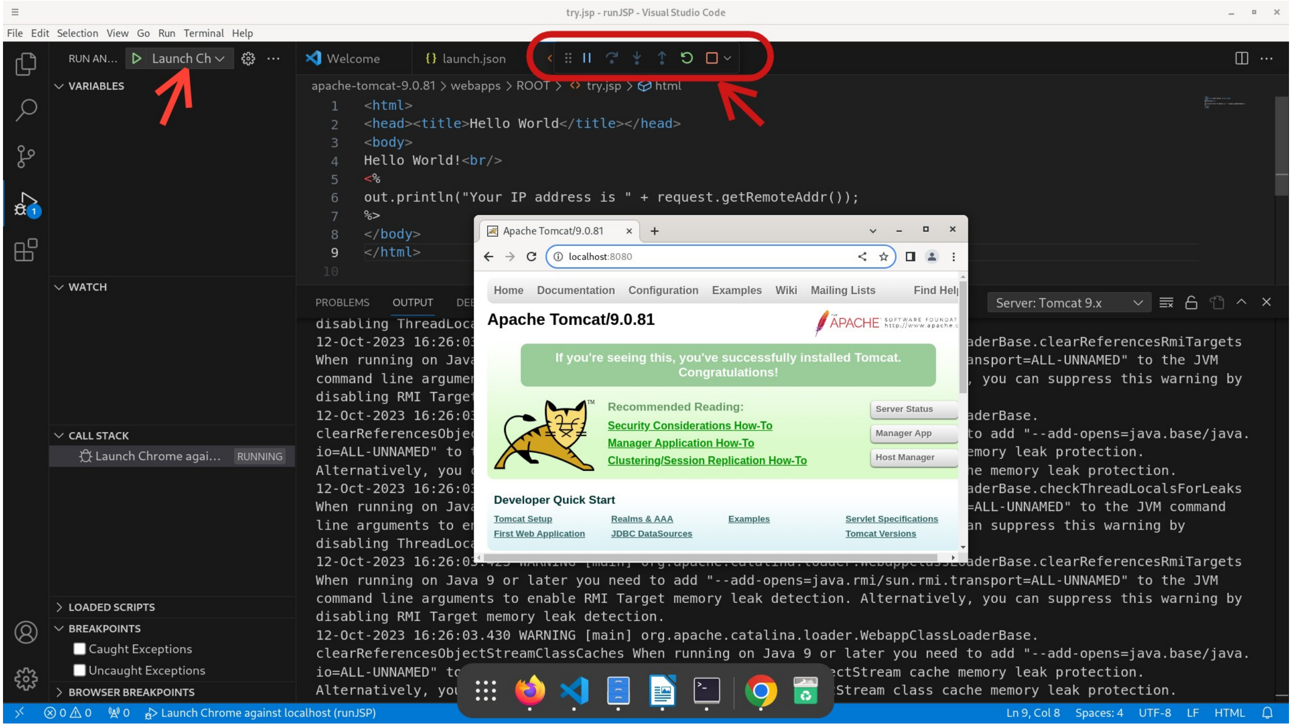
(5) make sure you add deployment(pom.xml)

(6) make sure you install all required extensions.

(7) make sure you add configuration in “launch.json”

(8) please make sure you click “Run and Debug” in “Run and Debug” page.

(9) please make sure there is a “running label” when running your .jsp file. If not, tomcat does not be connected.


try.jsp - runJSP - Visual Studio Code
File Edit Selection View Go Run Terminal Help
RUN AN... Launch Ch
Welcome
launch.json
apache-tomcat-9.0.81 > webapps > ROOT > try.jsp > html
VARIABLES
WATCH
CALL STACK
Launch Chrome agai... RUNNING
LOADED SCRIPTS
BREAKPOINTS
Caught Exceptions
Uncaught Exceptions
BROWSER BREAKPOINTS
PROBLEMS
OUTPUT
Server: Tomcat 9.x
Apache Tomcat/9.0.81
localhost:8080
Home Documentation Configuration Examples Wiki Mailing Lists Find Help
Apache Tomcat/9.0.81
APACHE SOFTWARE FOUNDATION http://www.apache.org
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
0 0
0
Launch Chrome against localhost (runJSP)
Ln 9, Col 8 Spaces: 4 UTF-8 LF HTML

```
<html>
<head><title>Hello World</title></head>
<body>
Hello World!<br/>
<%
out.println("Your IP address is " + request.getRemoteAddr());
%>
</body>
</html>
```

```
disabling ThreadLoca
12-Oct-2023 16:26:03                                              aderBase.clearReferencesRmiTargets
When running on Java                                              ansport=ALL-UNNAMED" to the JVM
command line argumen                                              , you can suppress this warning by
disabling RMI Target
12-Oct-2023 16:26:03                                              aderBase.
clearReferencesObjec                                              to add "--add-opens=java.base/java.
io=ALL-UNNAMED" to t                                              emory leak protection.
Alternatively, you c                                              he memory leak protection.
12-Oct-2023 16:26:03                                              aderBase.checkThreadLocalsForLeaks
When running on Java                                              =ALL-UNNAMED" to the JVM command
line arguments to en                                              an suppress this warning by
disabling ThreadLoca
12-Oct-2023 16:26:03                                              aderBase.clearReferencesRmiTargets
When running on Java 9 or later you need to add "--add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED" to the JVM
command line arguments to enable RMI Target memory leak detection. Alternatively, you can suppress this warning by
disabling RMI Target memory leak detection.
12-Oct-2023 16:26:03.430 WARNING [main] org.apache.catalina.loader.WebappClassLoaderBase.
clearReferencesObjectStreamClassCaches When running on Java 9 or later you need to add "--add-opens=java.base/java.
io=ALL-UNNAMED" to                                   ectStream cache memory leak protection.
Alternatively, you                                   Stream class cache memory leak protection.
```