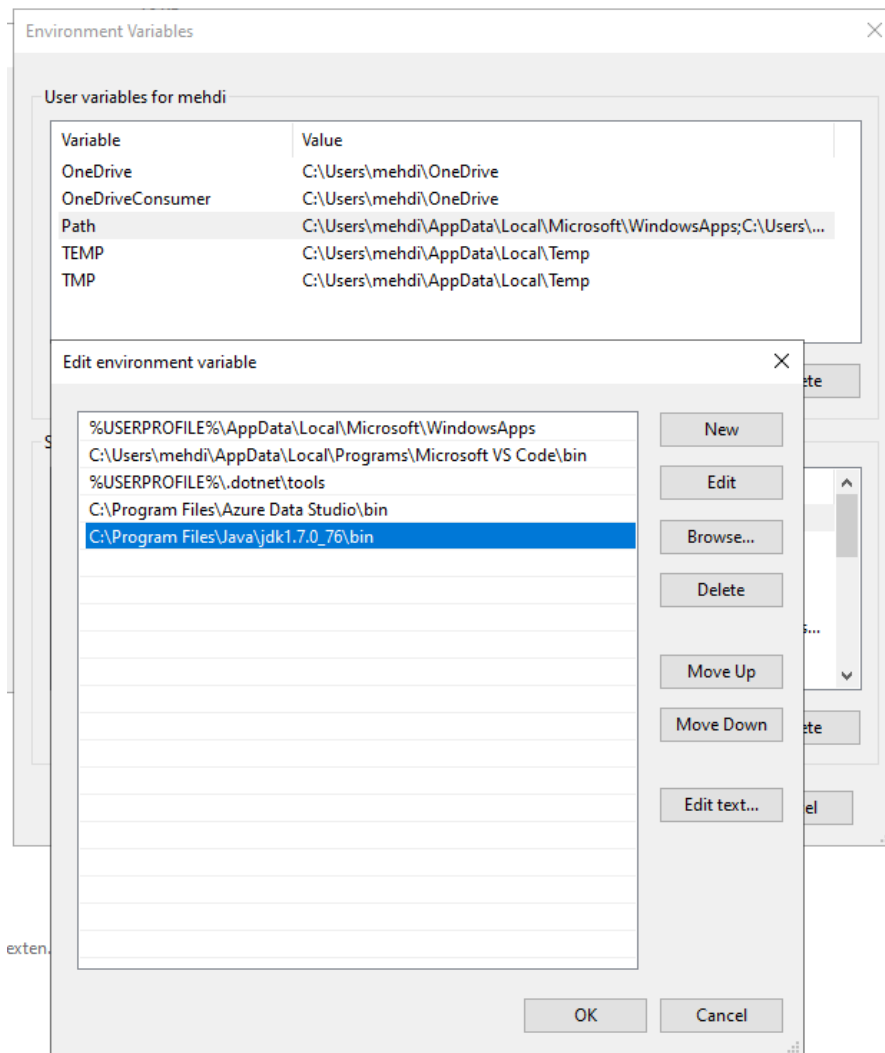
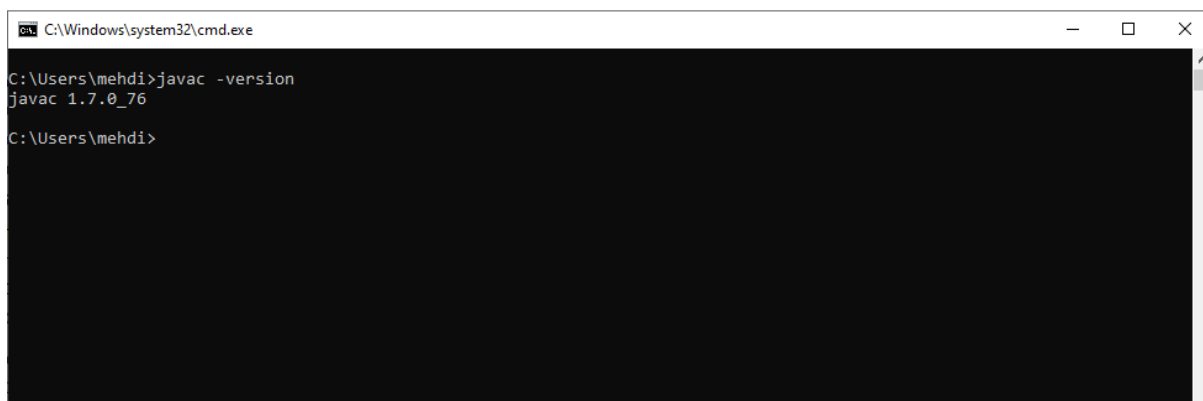


Practical 1

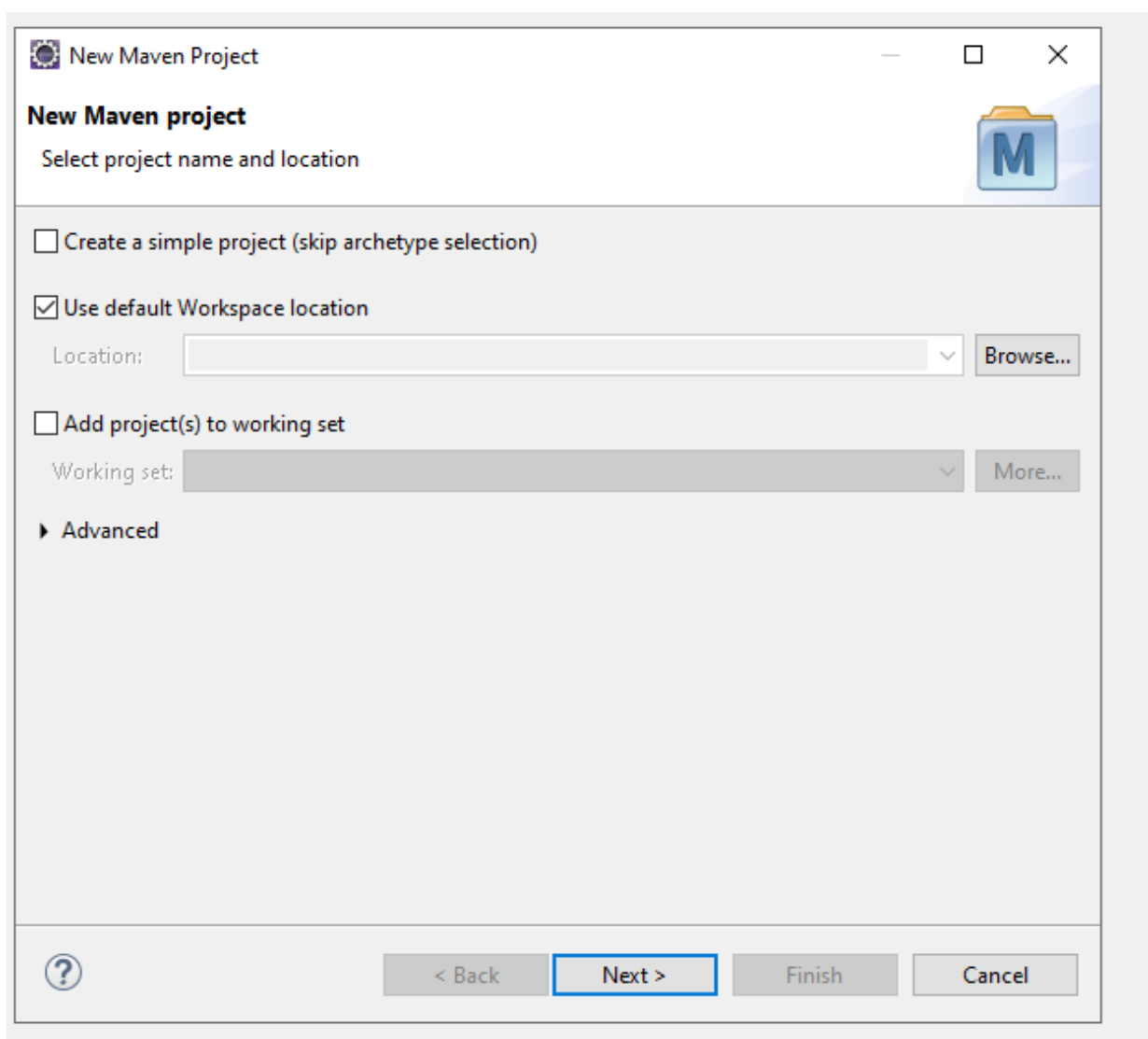
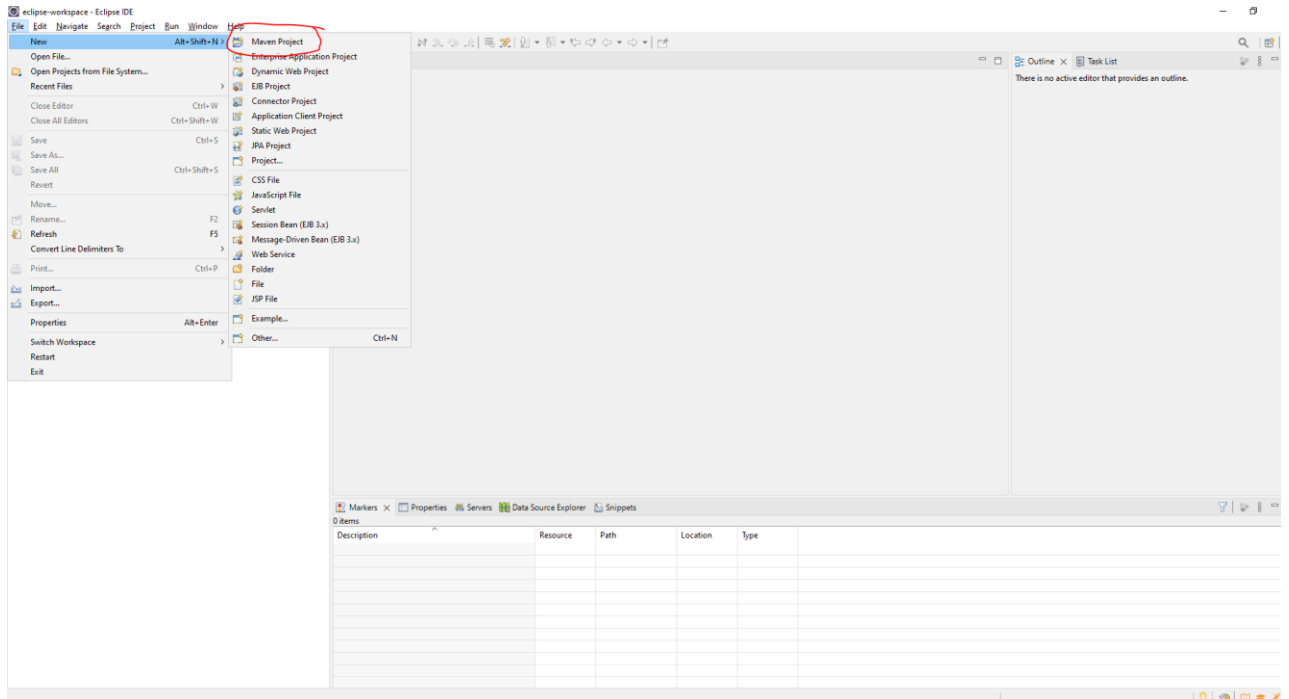
Aim: Using the software like / API / Tools JDK 1.7/1.8, Eclipse IDE, Dropbox API, Apache tomcat server 7.0/8.0, Google AppEngine API, Servlets, Struts, Spring framework design and develop Web applications using MVC Framework



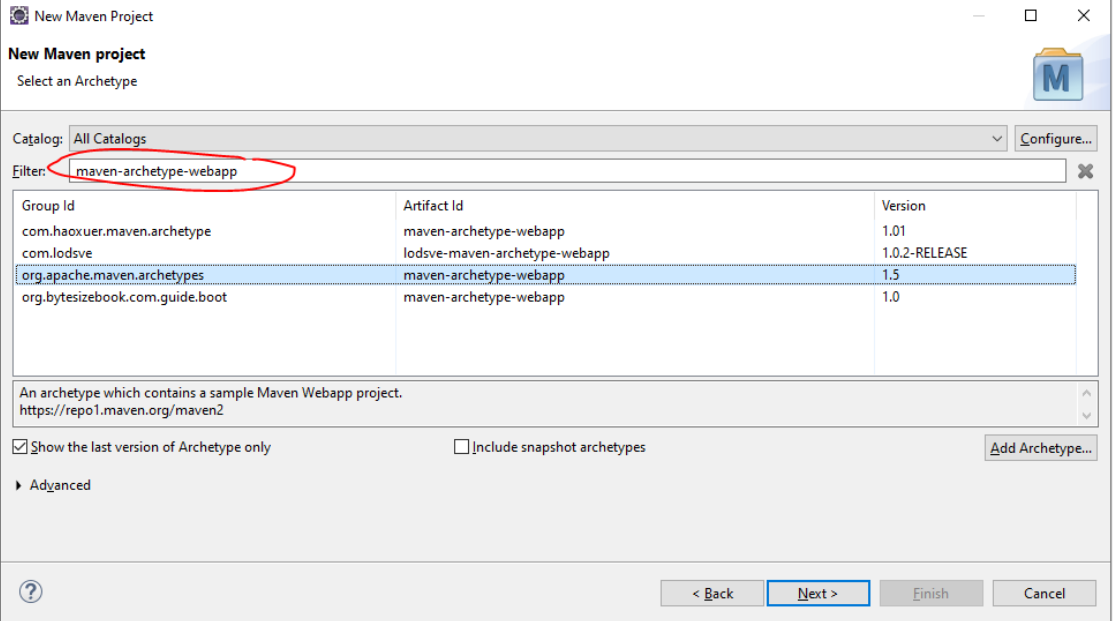
Check the version of the java installed



Create new Maven Project



Search the architecture type



New Maven Project
Select an Archetype

Catalog: All Catalogs Configure...

Filter: maven-archetype-webapp

Group Id	Artifact Id	Version
com.haoxuer.maven.archetype	maven-archetype-webapp	1.01
com.lodsve	lodsve-maven-archetype-webapp	1.0.2-RELEASE
org.apache.maven.archetypes	maven-archetype-webapp	1.5
org.bytesizebook.com.guide.boot	maven-archetype-webapp	1.0

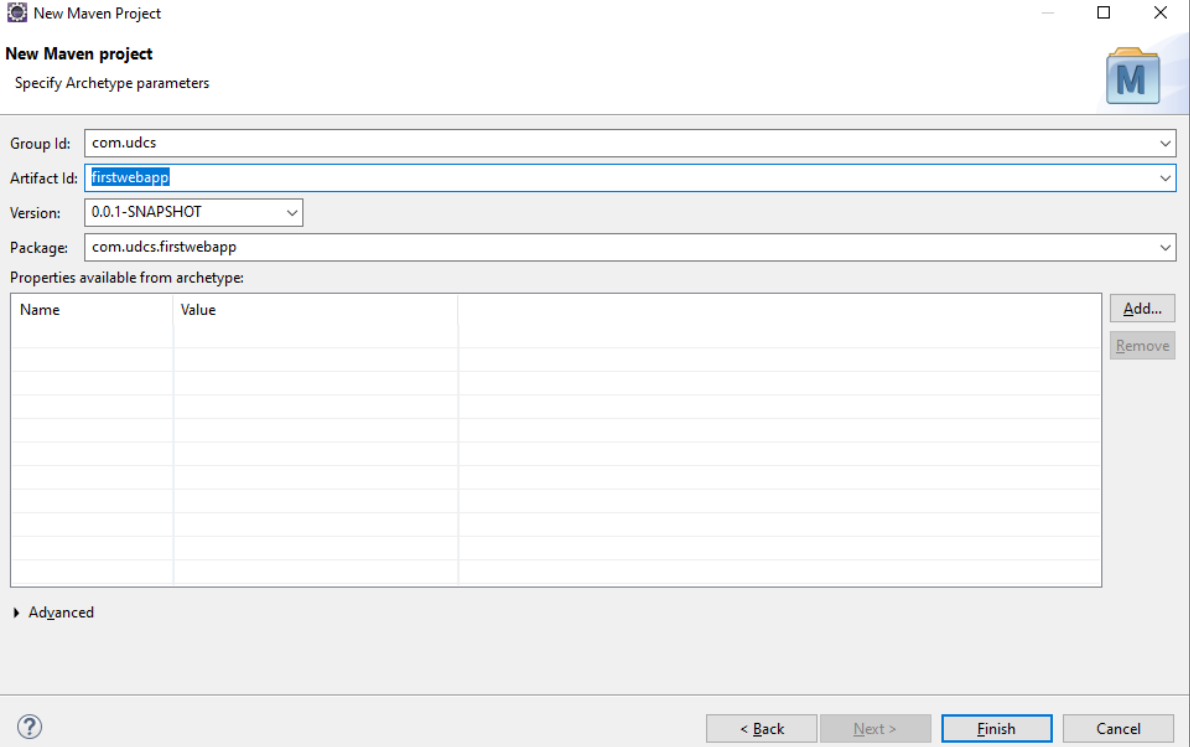
An archetype which contains a sample Maven Webapp project.
<https://repo1.maven.org/maven2>

☒ Show the last version of Archetype only ☐ Include snapshot archetypes Add Archetype...

Advanced

< Back **Next >** Finish Cancel

Add the project name as Artifact Id



New Maven Project
Specify Archetype parameters

Group Id: com.udcs

Artifact Id: firstwebapp

Version: 0.0.1-SNAPSHOT

Package: com.udcs.firstwebapp

Properties available from archetype:

Name	Value

Advanced

< Back Next > **Finish** Cancel

Test run your project with default files and select the Tomcat server

The image shows a two-step process in an IDE for running a project on a Tomcat server.

Step 1: Run As Dialog

The top screenshot shows a code editor with an HTML file containing the following code:

```
1 <html>
2 <body>
3 <h2><%= "Hello World!" %></h2>
4 </body>
5 </html>
6
```

A "Run As" dialog box is open, titled "Select a way to run 'firstwebapp':". The list of options includes:

- Run on Server (highlighted)
- Java Application
- JUnit Test
- Maven build
- Maven build...
- Maven clean
- Maven generate-sources
- Maven install
- Maven test

The description for "Run on Server" is "Run the current selection on a server". The "OK" button is highlighted.

Step 2: Run On Server Wizard

The bottom screenshot shows the "Run On Server" wizard. The title is "Run On Server". The subtitle is "Select which server to use".

The first question is "How do you want to select the server?". The options are:

- ☐ Choose an existing server
- ☒ Manually define a new server

The second question is "Select the server type:". There is a search bar with the text "type filter text". Below the search bar is a list of server types:

- Tomcat v3.2 Server
- Tomcat v4.0 Server
- Tomcat v4.1 Server
- Tomcat v5.0 Server
- Tomcat v5.5 Server
- Tomcat v6.0 Server
- Tomcat v7.0 Server
- Tomcat v8.0 Server
- Tomcat v8.5 Server
- Tomcat v9.0 Server** (highlighted with a red circle)
- Tomcat v10.0 Server
- Basic
- J2EE Preview
- IBM
- OW2
- Oracle
- Red Hat JBoss Middleware
- Resin
- SAP

Below the list, there is a description: "Publishes and runs J2EE and Java EE Web projects and server configurations to a local Tomcat server."

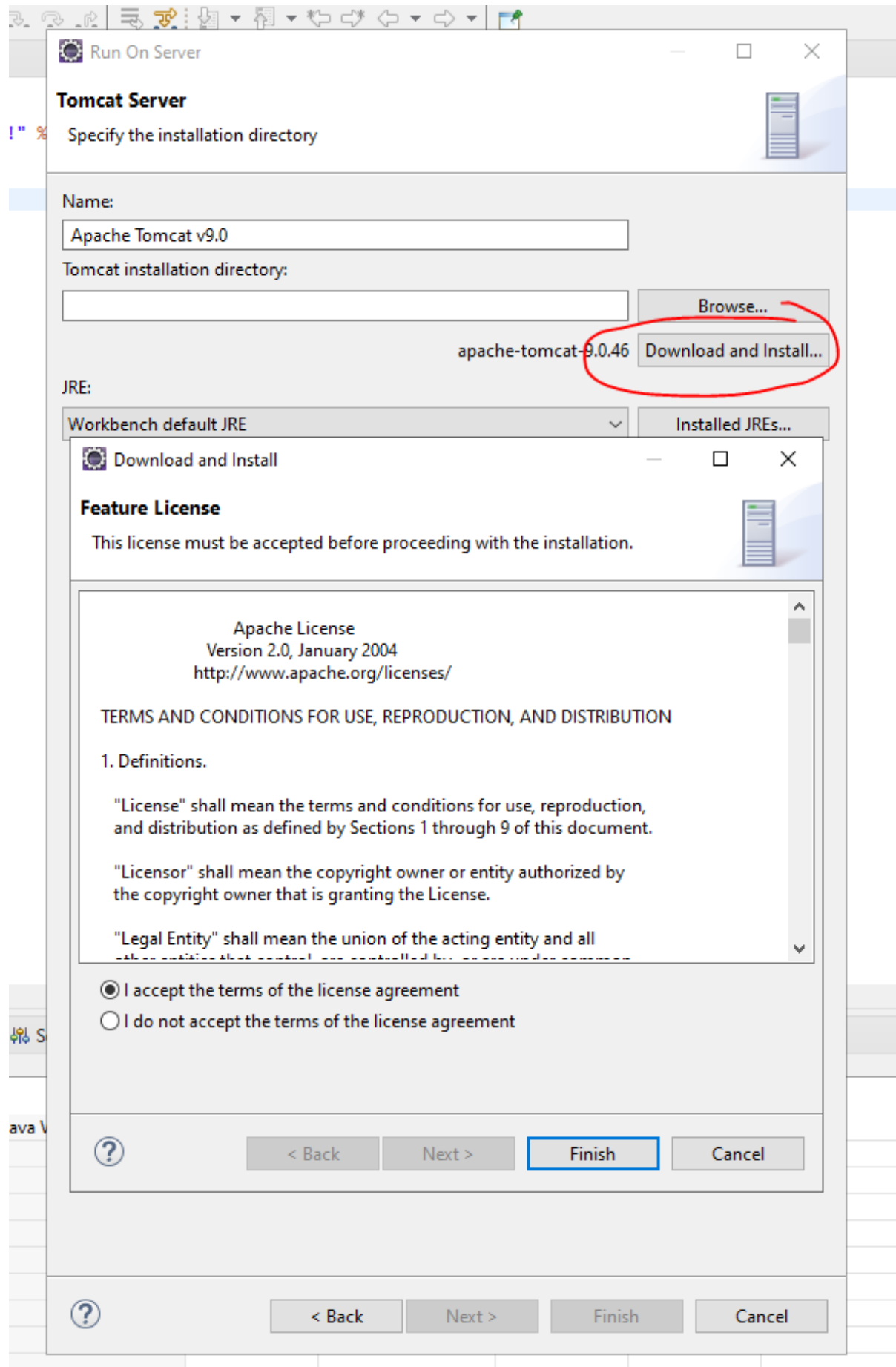
The third question is "Server's host name:". The text "localhost" is entered in the field.

The fourth question is "Server name:". The text "Tomcat v9.0 Server at localhost" is entered in the field.

At the bottom, there is a checkbox labeled "Always use this server when running this project" which is checked.

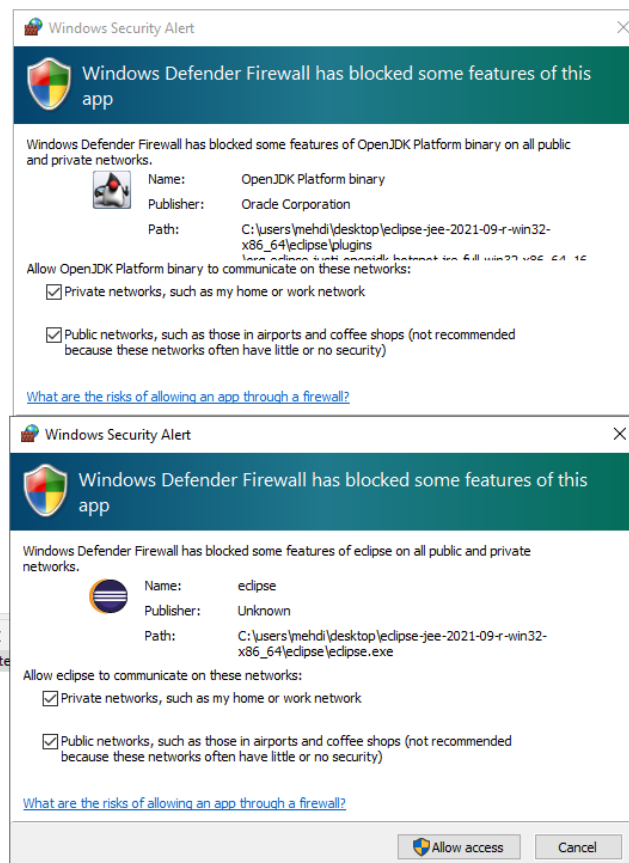
The "Next >" button is highlighted.

Download and Install the Tomcat server

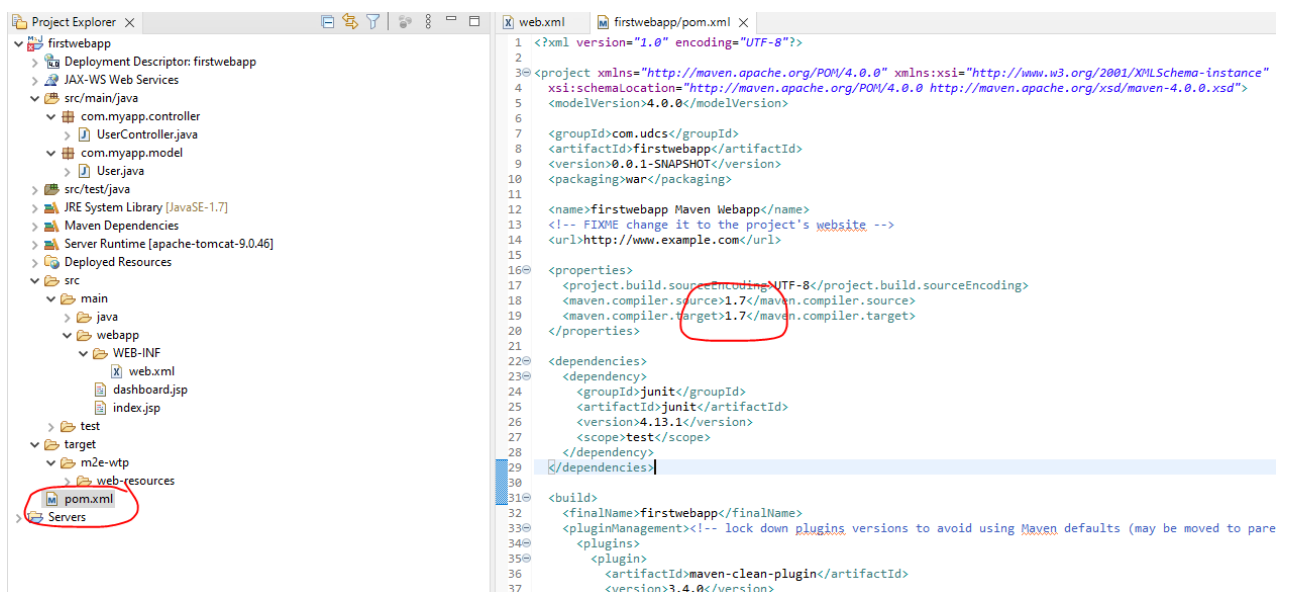


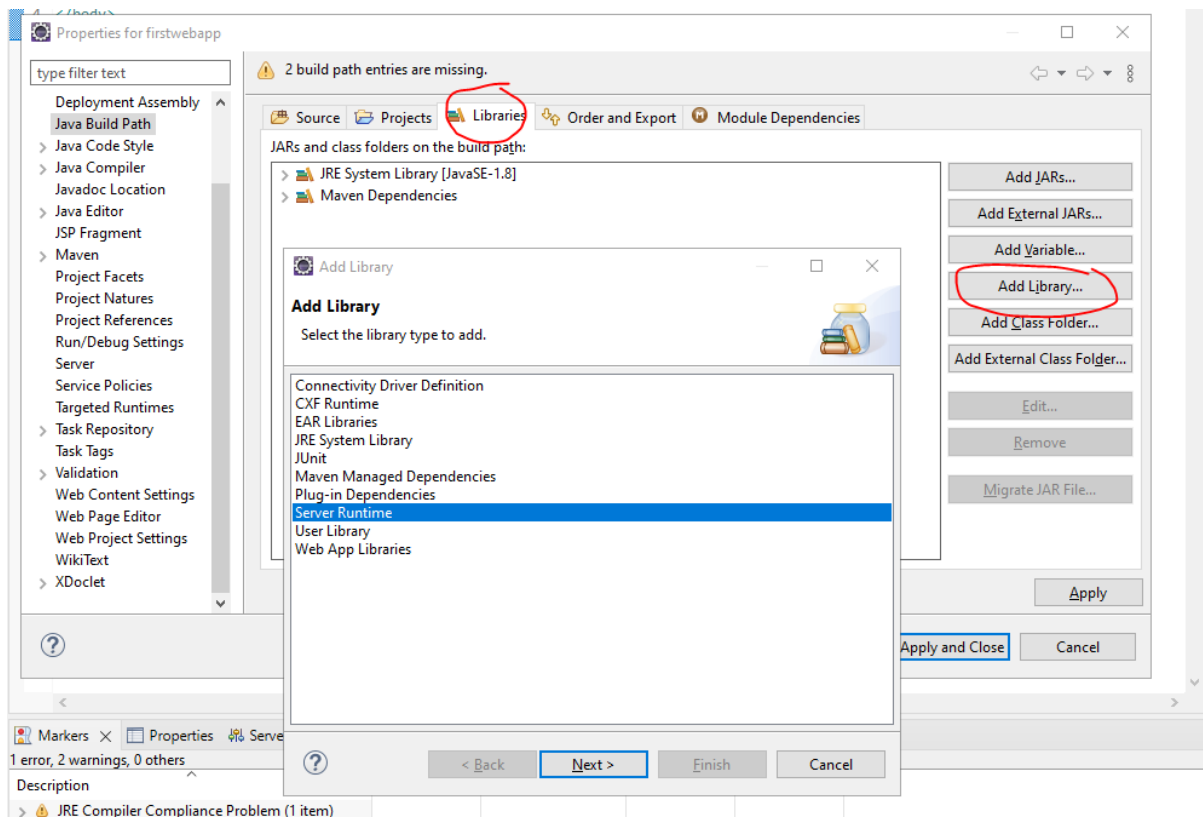
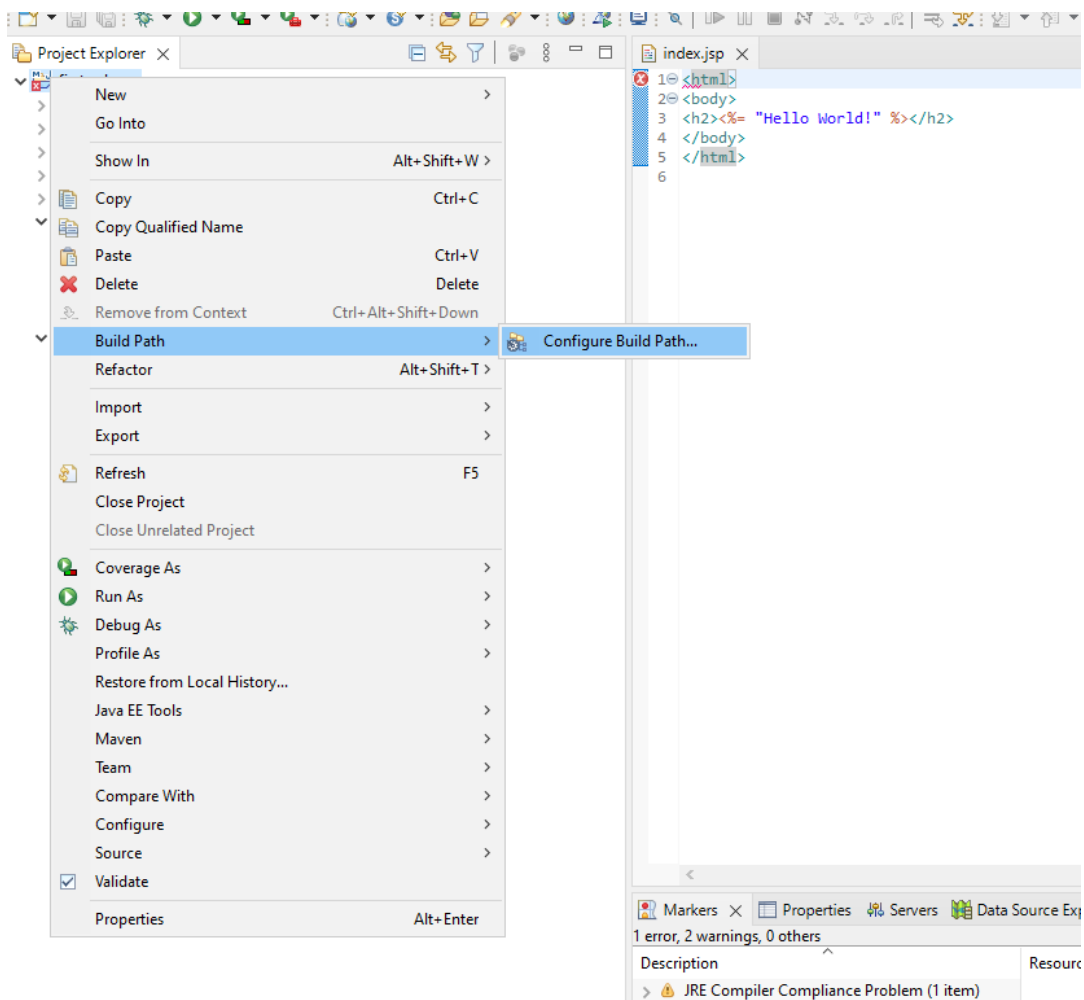
Allow firewall permission

Hello World!

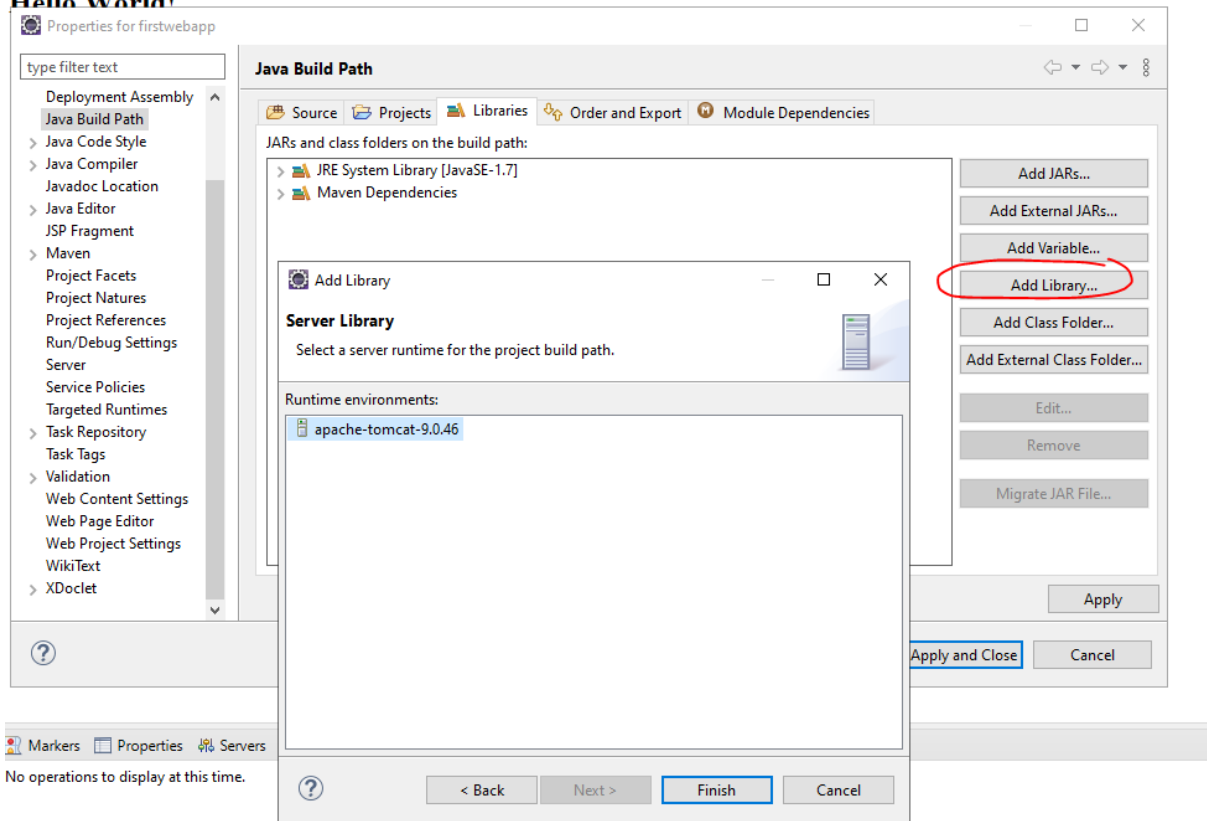


Fix the error issue by correcting the Java version

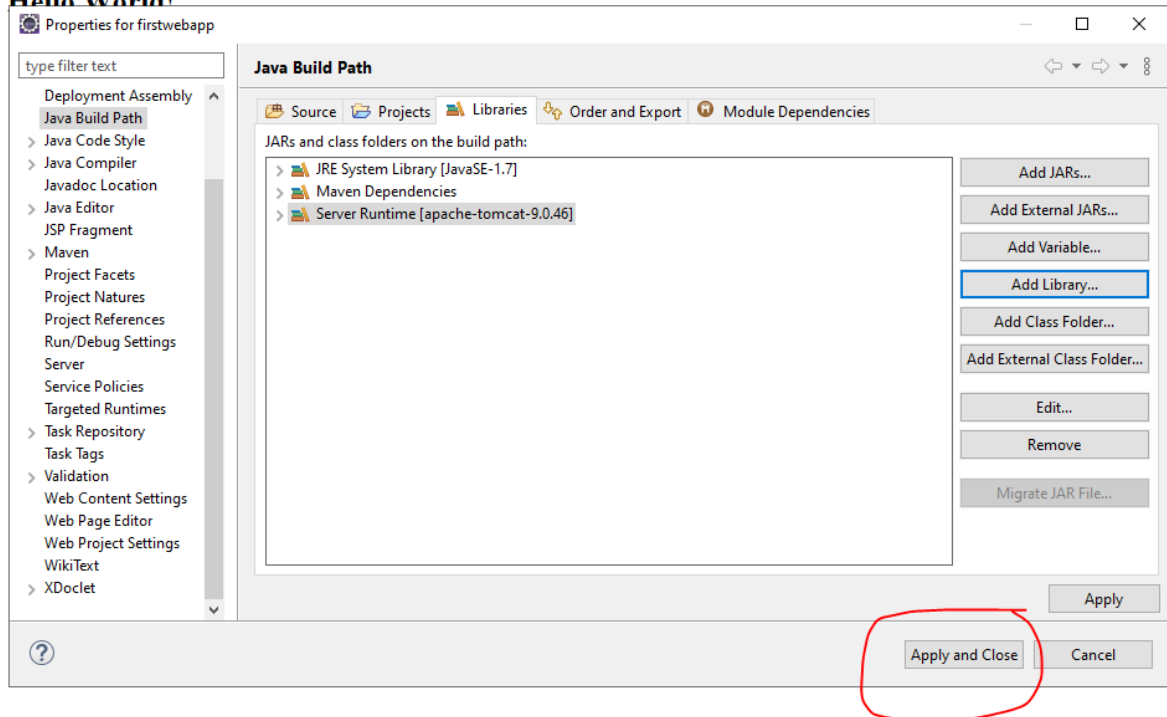




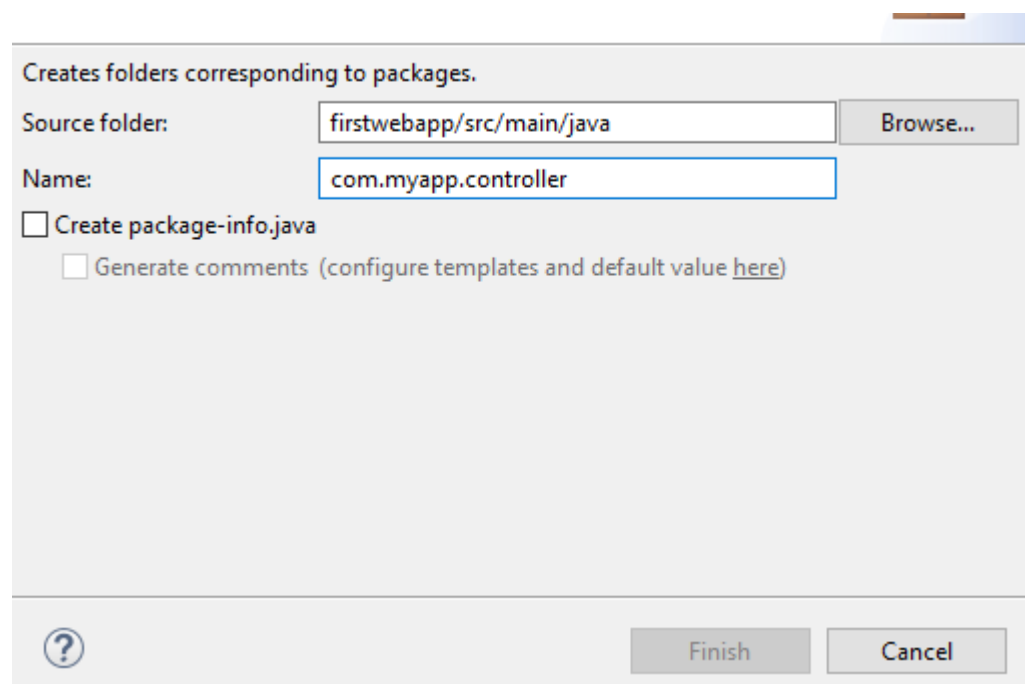
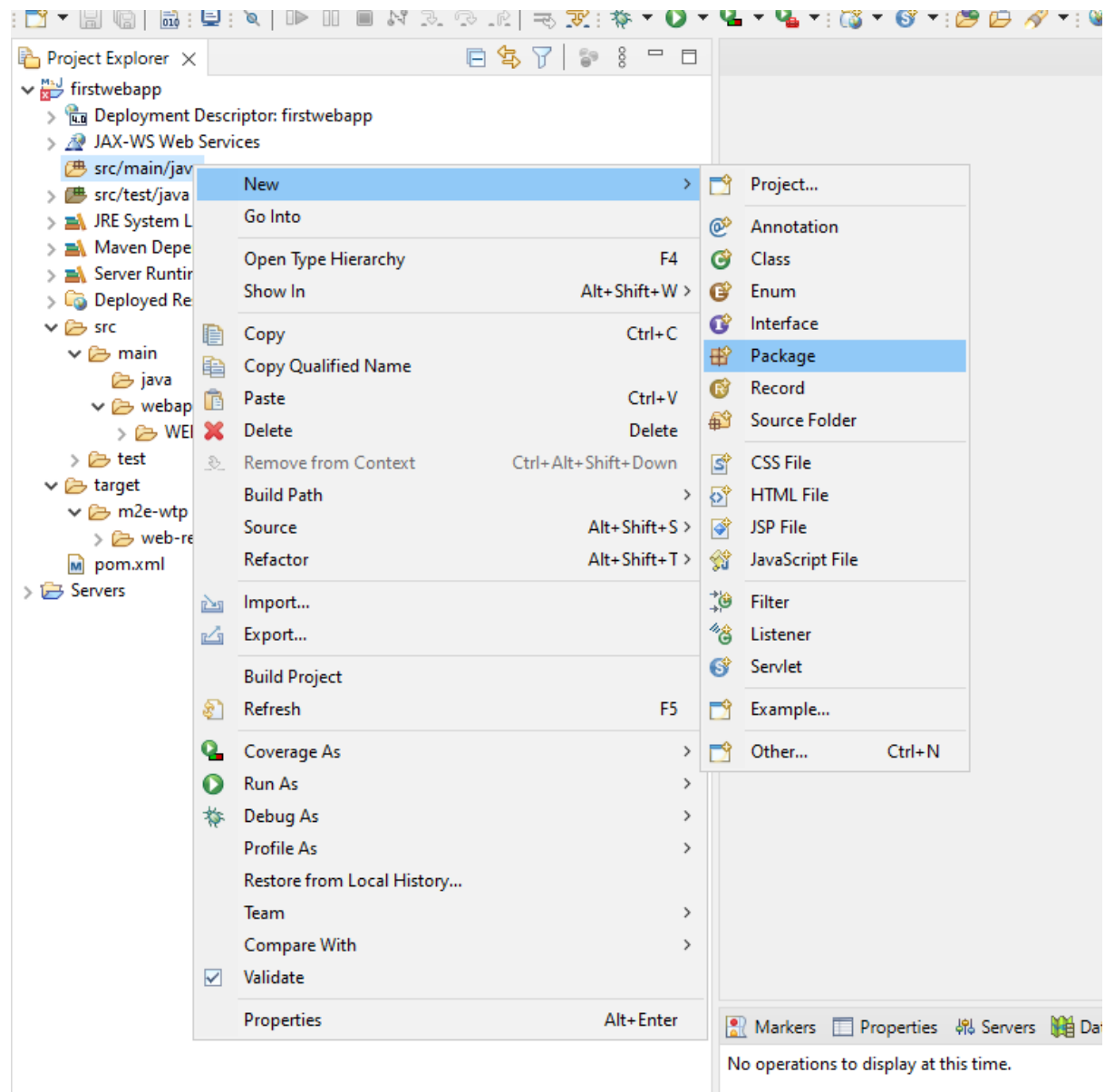
Hello World!

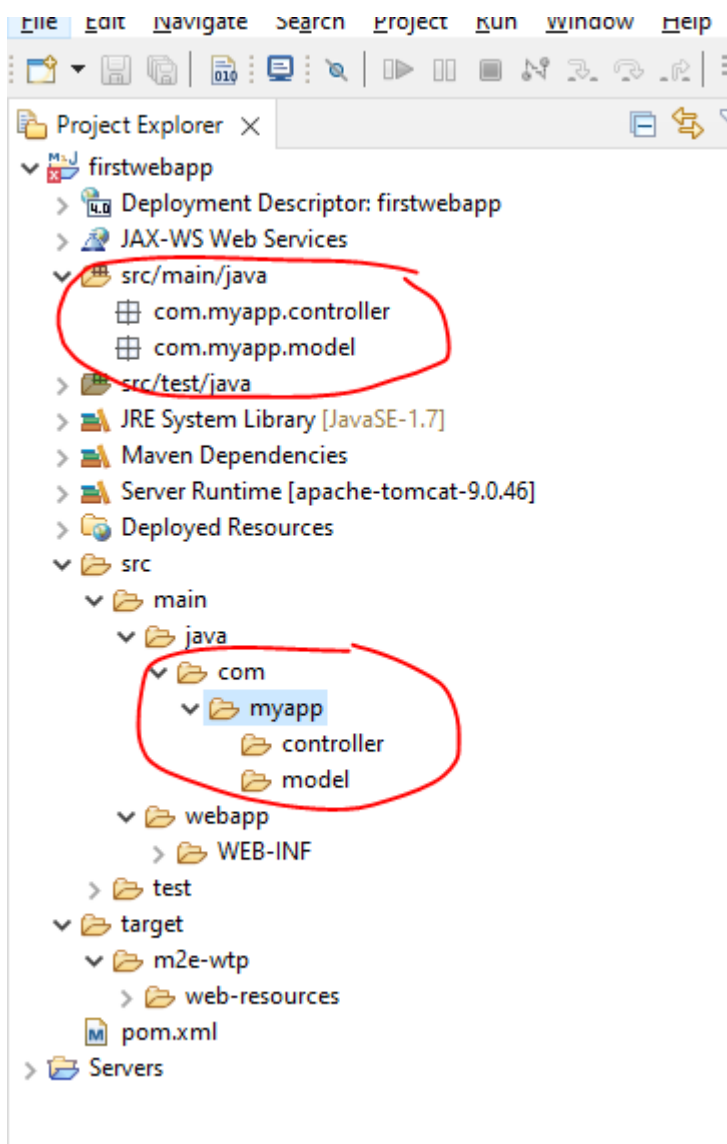
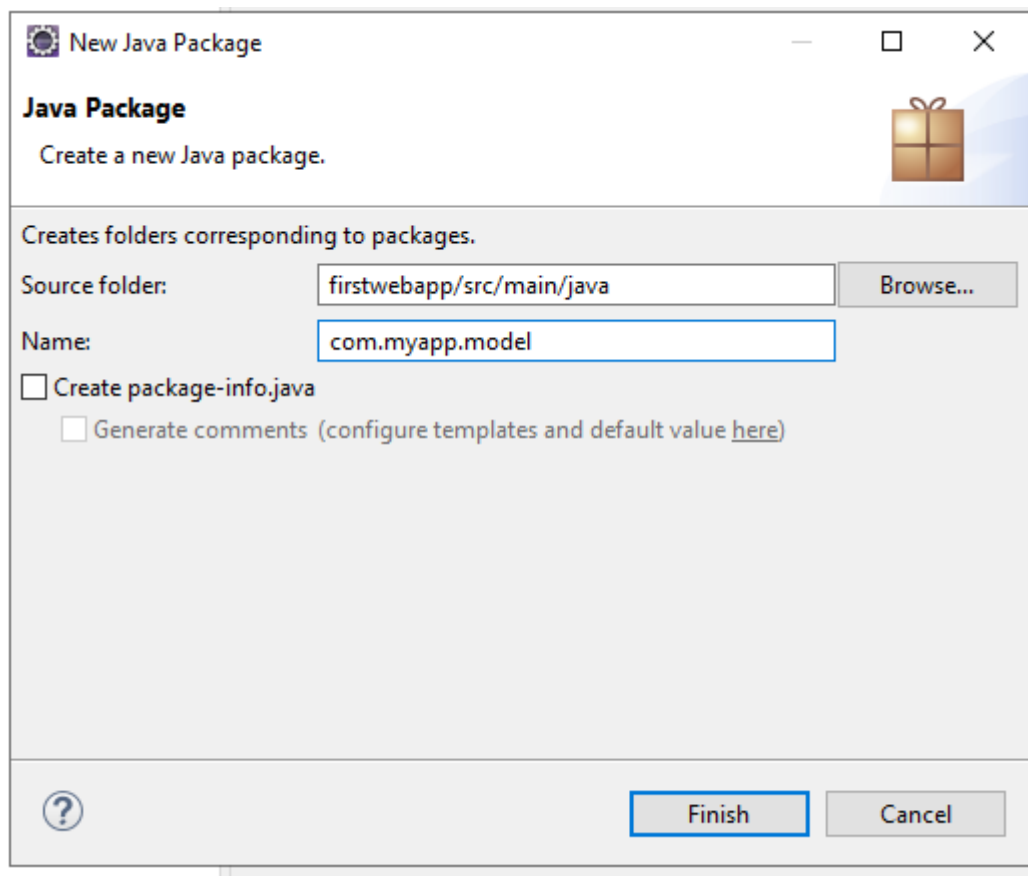


Hello World!

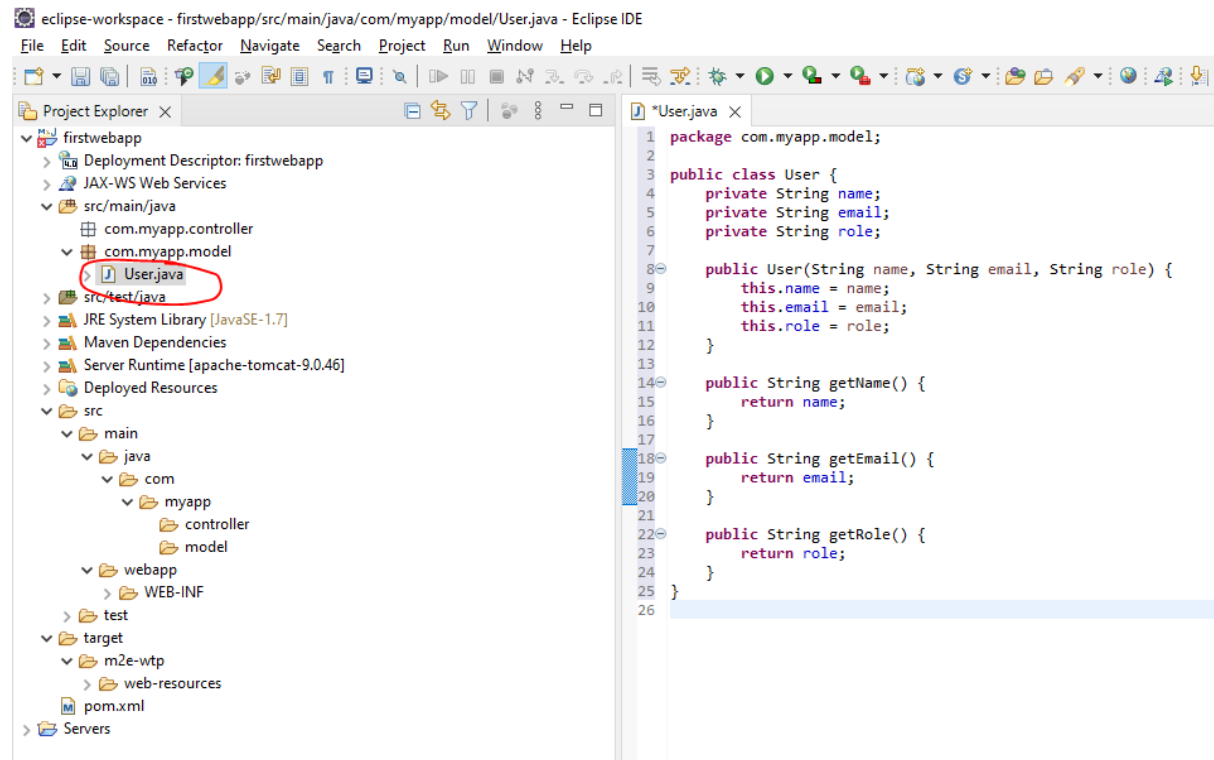


Now lets create the MVC Structure, First start with by creating packages for Model and Controller

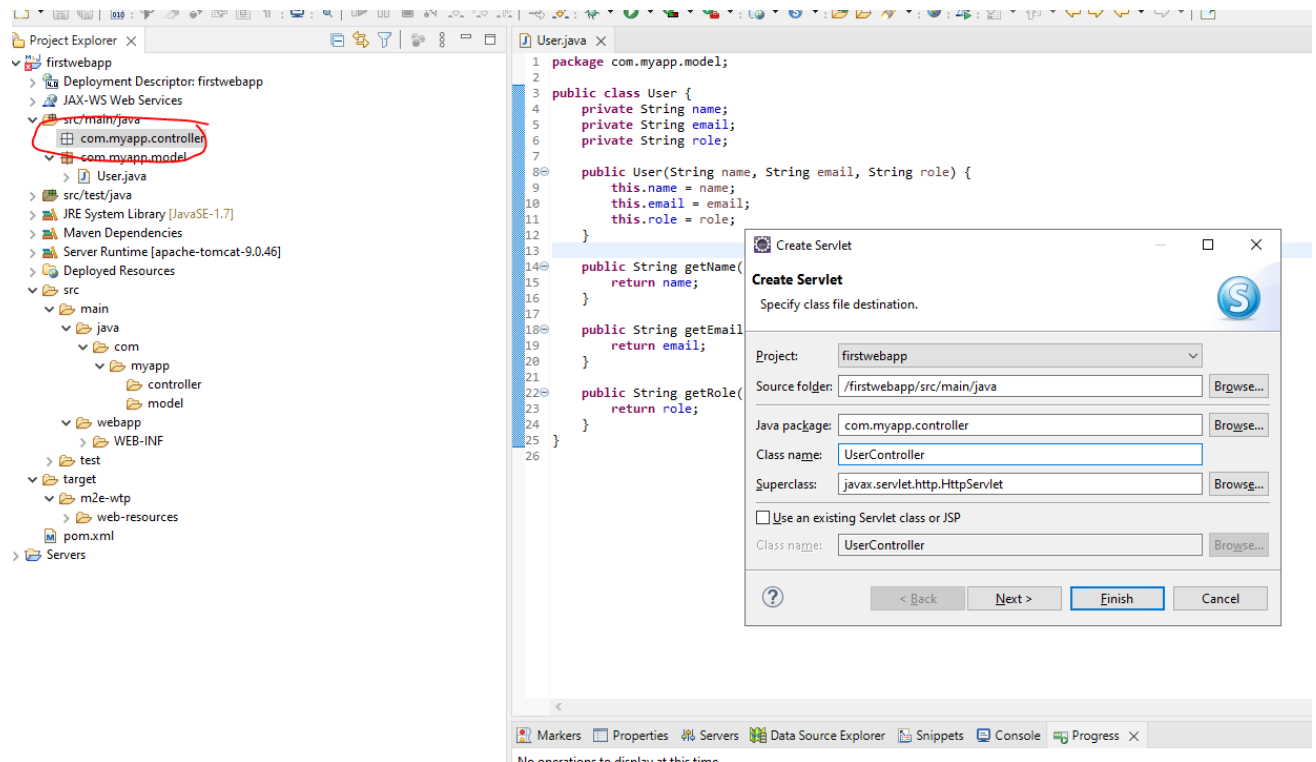


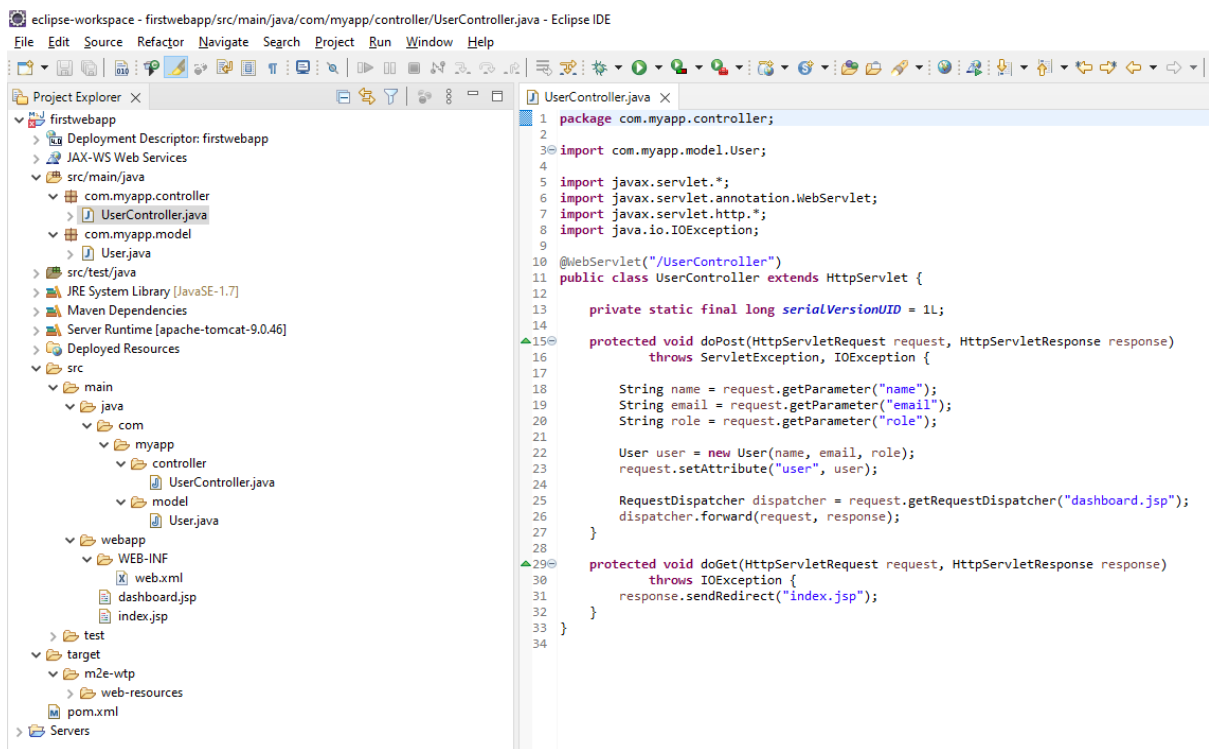


Create the Model User.java

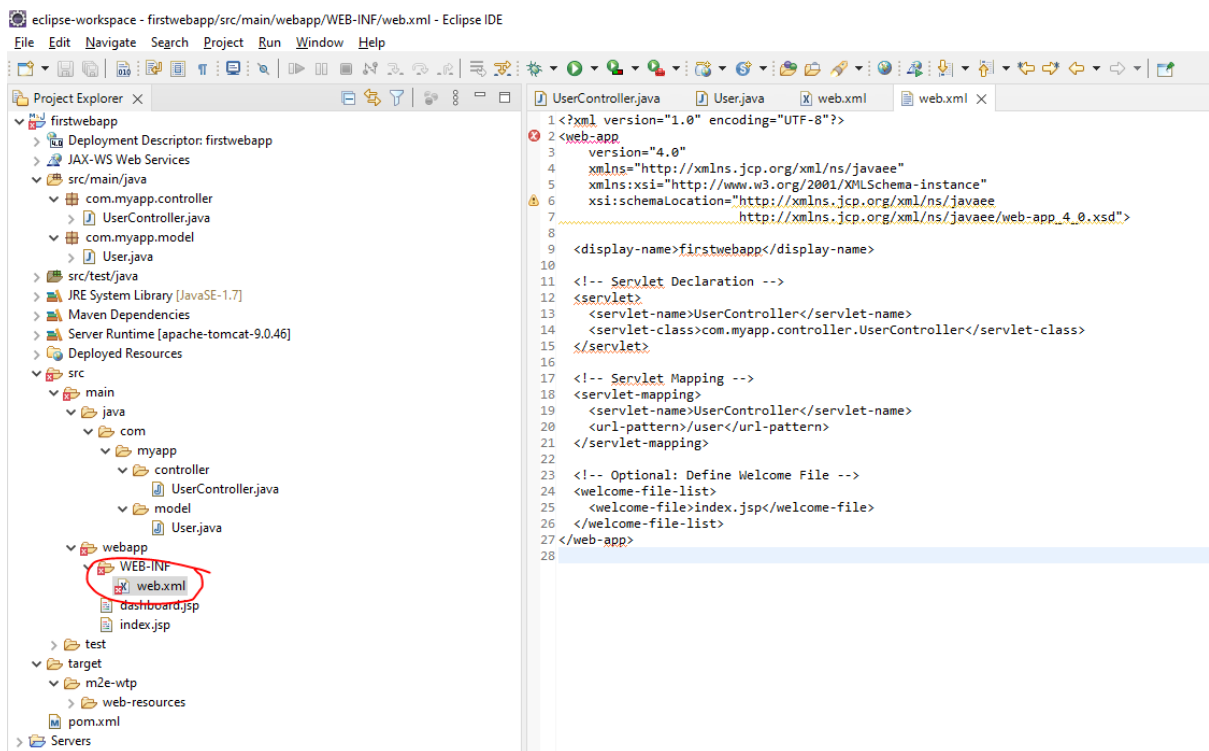


Create the Controller UserController.java (Can be a simple class file or a servlet)





Edit the web.xml file to include the controller and views



Create the second view for displaying the output (dashboard.jsp)

eclipse-workspace - firstwebapp/src/main/webapp/dashboard.jsp - Eclipse IDE

File Edit Navigate Search Project Run Window Help

Project Explorer

- firstwebapp
 - Deployment Descriptor: firstwebapp
 - JAX-WS Web Services
 - src/main/java
 - com.myapp.controller
 - UserController.java
 - com.myapp.model
 - User.java
 - src/test/java
 - JRE System Library [JavaSE-1.7]
 - Maven Dependencies
 - Server Runtime [apache-tomcat-9.0.46]
 - Deployed Resources
 - src
 - main
 - java
 - webapp
 - WEB-INF
 - web.xml
 - dashboard.jsp
 - index.jsp
 - test
 - target
 - m2e-wtp
 - web-resources
 - pom.xml
- Servers

dashboard.jsp

```
1 <%@ page contentType="text/html; charset=UTF-8" language="java" %>
2 <html>
3 <head>
4   <title>User Dashboard</title>
5 </head>
6 <body>
7   <h2>Welcome, ${user.name}</h2>
8   <p>Email: ${user.email}</p>
9   <p>Role: ${user.role}</p>
10
11   <br><a href="index.jsp">Back to Home</a>
12 </body>
13 </html>
14
```

Create the view for accepting inputs (index.jsp)

eclipse-workspace - firstwebapp/src/main/webapp/index.jsp - Eclipse IDE

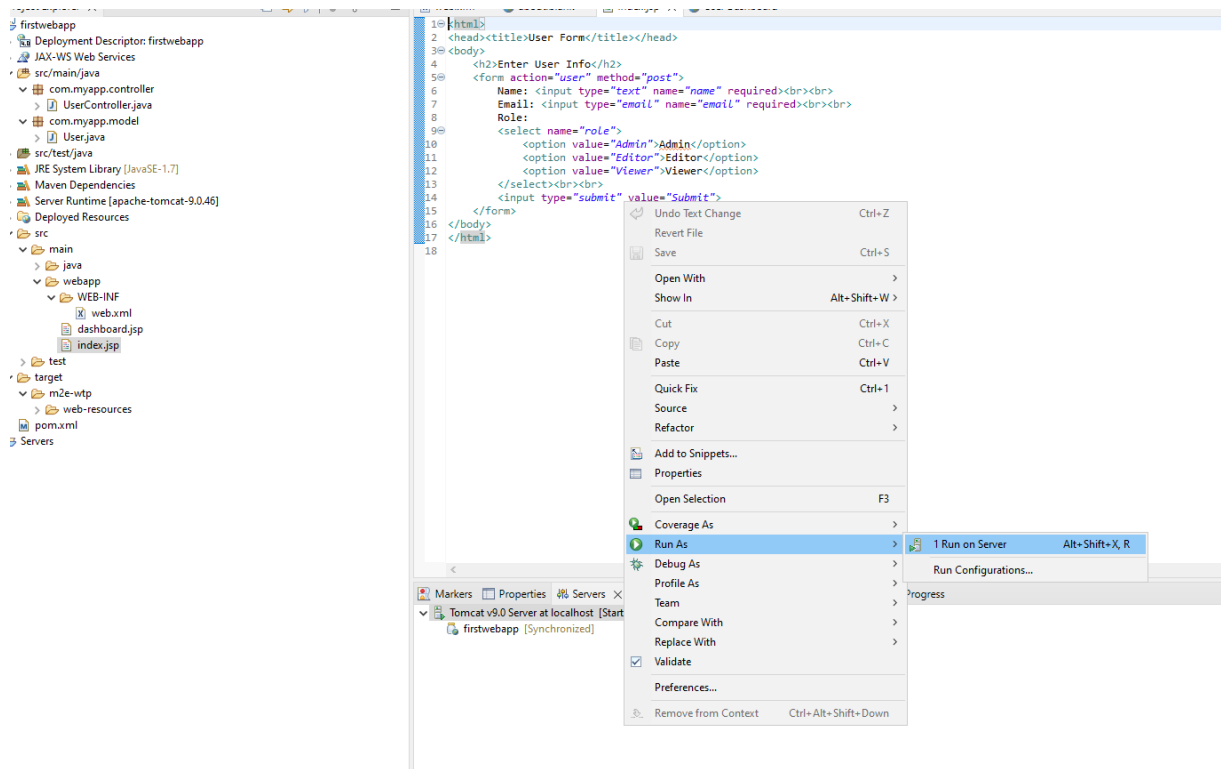
File Edit Navigate Search Project Run Window Help

Project Explorer

- firstwebapp
 - Deployment Descriptor: firstwebapp
 - JAX-WS Web Services
 - src/main/java
 - com.myapp.controller
 - UserController.java
 - com.myapp.model
 - User.java
 - src/test/java
 - JRE System Library [JavaSE-1.7]
 - Maven Dependencies
 - Server Runtime [apache-tomcat-9.0.46]
 - Deployed Resources
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 - main
 - java
 - webapp
 - WEB-INF
 - web.xml
 - dashboard.jsp
 - index.jsp
 - test
 - target
 - m2e-wtp
 - web-resources
 - pom.xml
- Servers

index.jsp

```
1 <html>
2 <head><title>User Form</title></head>
3 <body>
4   <h2>Enter User Info</h2>
5   <form action="user" method="post">
6     Name: <input type="text" name="name" required><br><br>
7     Email: <input type="email" name="email" required><br><br>
8     Role:
9     <select name="role">
10       <option value="Admin">Admin</option>
11       <option value="Editor">Editor</option>
12       <option value="Viewer">Viewer</option>
13     </select><br><br>
14     <input type="submit" value="Submit">
15   </form>
16 </body>
17 </html>
18
```



Final Outputs

