

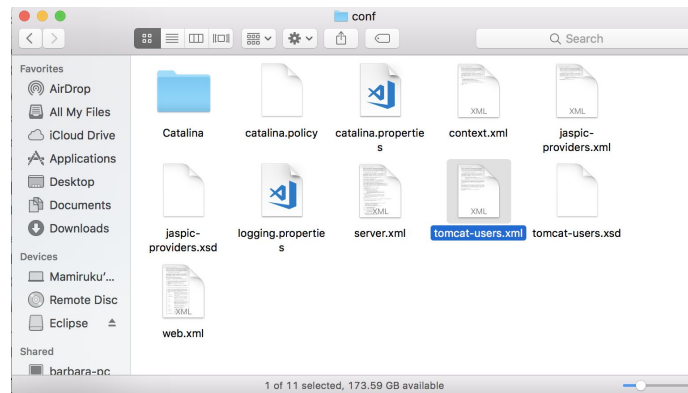
OS: Mac OS

SourceCode: <https://github.com/kamolchanokTa/AITLabExercise3To6>

## Lab exercise 3 - Tomcat

### Steps

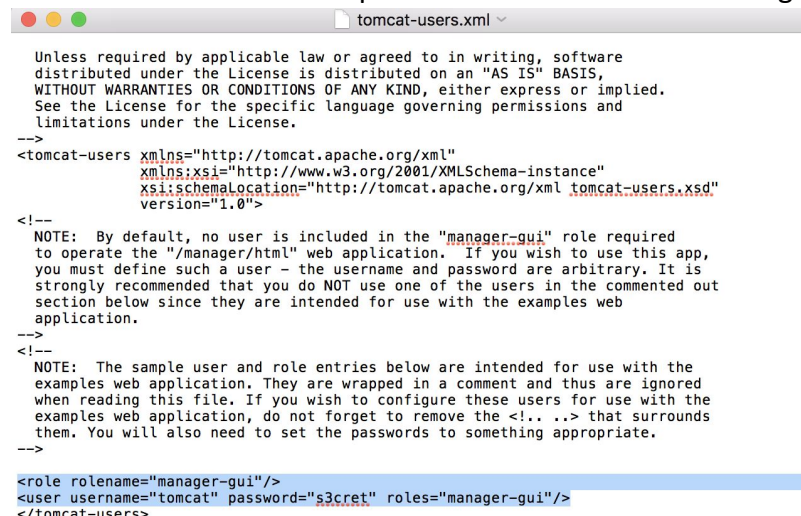
1. Go to terminal and type command  
Brew install tomcat
2. Change the configuration file to create the permission
  - a. Go to /usr/local/Cellar/tomcat/9.0.6/libexec/conf/tomcat-users.xml



- b. Add the tags below and save it

```
<role rolename="manager-gui"/>
```

```
<user username="tomcat" password="s3cret" roles="manager-gui"/>
```



3. Start the apache using command below

```
catalina run &
```

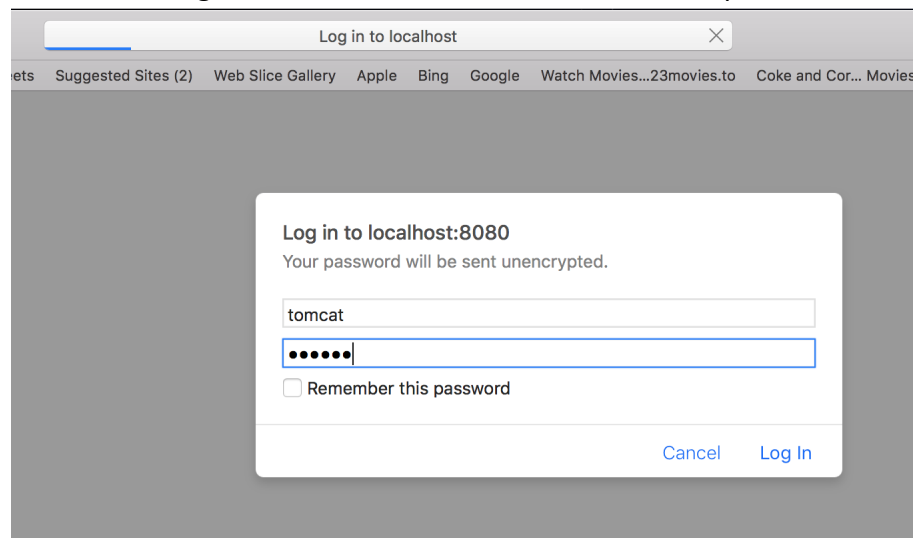
- a. The result in terminal

```

cgi-bin — java -Djava.util.logging.config.file=/usr/local/Cellar/tomcat/9.0.6/libe...
oyDirectory Deploying web application directory [/usr/local/Cellar/tomcat/9.0.6/
libexec/webapps/host-manager]
13-Mar-2018 20:10:22.243 INFO [main] org.apache.catalina.startup.HostConfig.depl
oyDirectory Deployment of web application directory [/usr/local/Cellar/tomcat/9.
0.6/libexec/webapps/host-manager] has finished in [22] ms
13-Mar-2018 20:10:22.243 INFO [main] org.apache.catalina.startup.HostConfig.depl
oyDirectory Deploying web application directory [/usr/local/Cellar/tomcat/9.0.6/
libexec/webapps/manager]
13-Mar-2018 20:10:22.259 INFO [main] org.apache.catalina.startup.HostConfig.depl
oyDirectory Deployment of web application directory [/usr/local/Cellar/tomcat/9.
0.6/libexec/webapps/manager] has finished in [16] ms
13-Mar-2018 20:10:22.259 INFO [main] org.apache.catalina.startup.HostConfig.depl
oyDirectory Deploying web application directory [/usr/local/Cellar/tomcat/9.0.6/
libexec/webapps/ROOT]
13-Mar-2018 20:10:22.274 INFO [main] org.apache.catalina.startup.HostConfig.depl
oyDirectory Deployment of web application directory [/usr/local/Cellar/tomcat/9.
0.6/libexec/webapps/ROOT] has finished in [15] ms
13-Mar-2018 20:10:22.277 INFO [main] org.apache.coyote.AbstractProtocol.start St
arting ProtocolHandler ["http-nio-8080"]
13-Mar-2018 20:10:22.283 INFO [main] org.apache.coyote.AbstractProtocol.start St
arting ProtocolHandler ["ajp-nio-8009"]
13-Mar-2018 20:10:22.285 INFO [main] org.apache.catalina.startup.Catalina.start
Server startup in 578 ms

```

- b. go to url <http://localhost:8080/manager/html>
- c. Enter username and password that you create in configuration file. In my case, I am using "tomcat" as username and "s3cret" as password



- d. The result after successful login

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

- Stop the apache using command below  
`catalina stop`

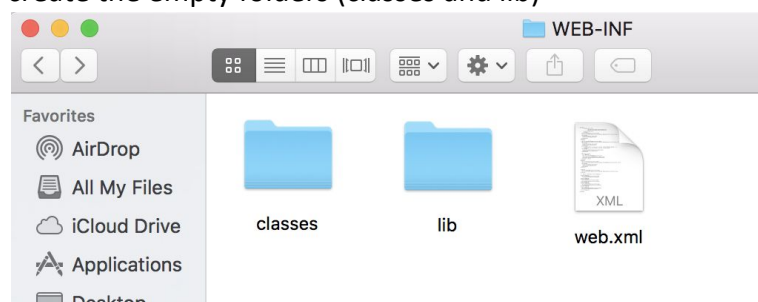
### Problem

- Cannot login to the localhost:8080 due to create incorrect xml tags. Thus, I solved as steps 2.b

## Lab exercise 4 – Servlets 1

### Steps(Servlets Java)

- Create folder Exercise4 under path  
`"/usr/local/Cellar/tomcat/9.0.6/libexec/webapps/Exercise4"`
- create folder WEB-INF inside the folder Exercise4
  - create the empty folders (classes and lib)



- create web.xml file as below

```
<web-app>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
  </welcome-file-list>
  <servlet>
    <servlet-name>Exercise4</servlet-name>
    <servlet-class>Exercise4</servlet-class>
  </servlet>
  <!-- Define the Manager Servlet Mapping -->
  <servlet-mapping>
    <servlet-name>Exercise4</servlet-name>
    <url-pattern>/ait/Exercise4</url-pattern>
  </servlet-mapping>
</web-app>
```

### 3. create java file under classes folder

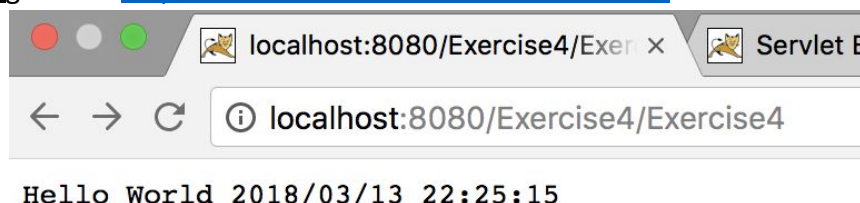
```
4. protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
5.     // TODO Auto-generated method stub
6.     DateFormat dateFormat = new SimpleDateFormat("yyyy/MM/dd HH:mm:ss");
7.     Date date = new Date();
8.     System.out.println(dateFormat.format(date));
9.     response.getWriter().append("Hello World").append(" " + dateFormat.format(date) + "");
10. }
```

### 11. compile java file using the command below

```
javac -cp /usr/local/Cellar/tomcat/9.0.6/libexec/lib/servlet-api.jar Exercise4.java
```

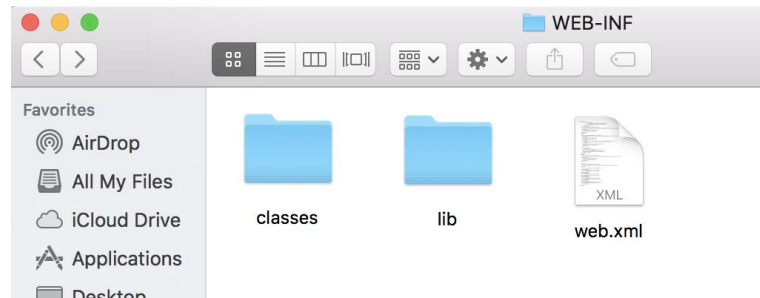
### 12. run apache tomcat again

### 13. go to url <http://localhost:8080/Exercise4/Exercise4>



**Steps(JSP)**

1. Create folder Exercise4 under path  
“/usr/local/Cellar/tomcat/9.0.6/libexec/webapps/Exercise4”
2. create folder WEB-INF inside the folder Exercise4
  - a. create the empty folders (classes and lib)



- b. create web.xml file where copy from the existing app and edit some tags.  
Please see the code in more detail in Git

3. create the index.jsp file as code below

```

4. <%@ page language="java" contentType="text/html; charset=UTF-8"
5.   pageEncoding="UTF-8"%>
6. <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
   "http://www.w3.org/TR/html4/loose.dtd">
7. <html>
8. <head>
9. <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
10. <%@ page import = "java.io.*, java.util.*, javax.servlet.*" %>
11. <title>Exercise 4</title>
12. </head>
13. <body>
14.   <center>
15.     <h1>Hello world</h1>
16.     <p>Current time</p>
17.   </center>
18.   <%
19.     Date date = new Date();
20.     out.print( "<h2 align = \"center\">" +date.toString()+"</h2>");
21.   %>
22. </body>
23. </html>

```

24. Go to url “http://localhost:8080/Exercise4/index.jsp”



# Hello world

Current time

**Tue Mar 13 21:05:42 CET 2018**

## Problem

1. Cannot run the app "Exercise4" due to incorrect Configure the <servlet> and <servlet-mapping> tags. Thus, I solved the problem by correct the class name.



Tomcat Web Application Manager

Message:OK - Stopped application at context path [/Exercise4]

Manager

List ApplicationsHTML Manager HelpManager HelpServer Status

Applications

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	<div>StartStopReloadUndeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/Exercise4	None specified		false	0	<div>StartStopReloadUndeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/docs	None specified	Tomcat Documentation	true	0	<div>StartStopReloadUndeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/examples	None specified	Servlet and JSP Examples	true	0	<div>StartStopReloadUndeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/host-manager	None specified	Tomcat Host Manager Application	true	0	<div>StartStopReloadUndeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>
/manager	None specified	Tomcat Manager Application	true	1	<div>StartStopReloadUndeploy</div> <div>Expire sessions with idle ≥ 30 minutes</div>

2. Wrong path to compile servlet-api.jar., Thus, find the correct path that install .jar files where homebrew install them

## Lab exercise 5 – Servlets 2

1. Copy Exercise4 folder and rename to Exercise5
2. Create .jsp file which have a form to pass 3 parameter

```

<!-- Please enter your information -->
<form method="GET" action="registerServlet">
  <p>
    First name <input type="text" name="FirstName" size="50">
  </p>
  <p>
    Last name <input type="text" name="LastName" size="20">
  </p>
  <p>
    Age<input type="text" name="Age" size="20">
  </p>
  <p>
    <input type="submit" value="Submit" name="B1">
  </p>
</form>

```

3. create java file which get parameter and display

```

public RegisterServlet() {
    super();
    // TODO Auto-generated constructor stub
}

/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
 */
protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException {
    // Set response content type
    PrintWriter pw=response.getWriter();
    response.setContentType("text/html");
    pw.println("<p>Exercise 5: Passing Parameters</p>");
    Enumeration<String> en =request.getParameterNames();

    while(en.hasMoreElements())
    {
        Object objOri=en.nextElement();
        String param=(String)objOri;
        String value=request.getParameter(param);
        pw.println(param+" = "+value+"");
        pw.println("<br>");
    }
    pw.close();
    pw.println("</body></html>");
}

```

#### 4. Edit the web.xml file

```

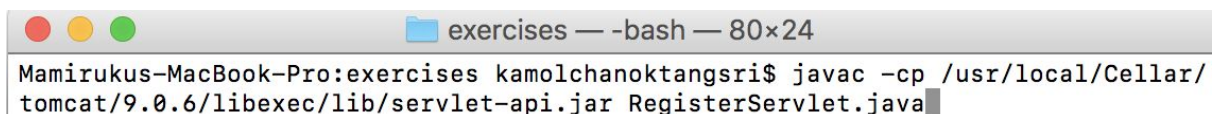
1  <?xml version="1.0" encoding="UTF-8"?>
2  <web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3      xmlns="http://java.sun.com/xml/ns/javaee" xmlns:web="http://java.sun.co
4      xsi:schemaLocation="http://java.sun.com/xml/ns/javaee http://java.sun.c
5      id="WebApp_ID" version="2.5">
6      <display-name>FormExample</display-name>
7      <servlet>
8          <servlet-name>RegisterServlet</servlet-name>
9          <servlet-class>ait.exercises.RegisterServlet</servlet-class>
10     </servlet>
11     <servlet-mapping>
12         <servlet-name>RegisterServlet</servlet-name>
13         <url-pattern>/registerServlet</url-pattern>
14     </servlet-mapping>
15     <welcome-file-list>
16         <welcome-file>register.jsp</welcome-file>
17     </welcome-file-list>
18 </web-app>

```

#### 5. compile java code as command below (go to the directory of java file first)

```
javac -cp /usr/local/Cellar/tomcat/9.0.6/libexec/lib/servlet-api.jar
```

RegisterServlet.java



```

Mamirukus-MacBook-Pro:exercises kamolchanoktangrsri$ javac -cp /usr/local/Cellar/
tomcat/9.0.6/libexec/lib/servlet-api.jar RegisterServlet.java

```

#### 6. run apache tomcat again

#### 7. go to url <http://localhost:8080/Exercise5/register.jsp>





## Register Page

Please enter your information

First name

Last name

Age

8. click submit



Exercise 5: Passing Parameters

FirstName = Sansa

LastName = Stark

Age = 20

B1 = Submit

### Problems

1. There are the conflict of servlet url as Error below

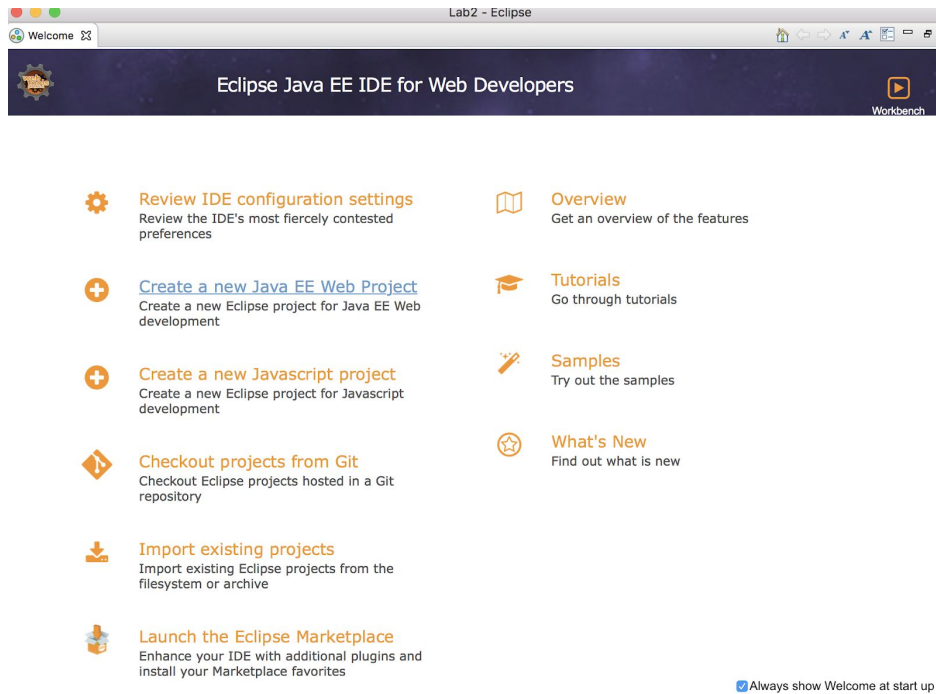
“The servlets named [RegisterServlet] and [ait.exercises.RegisterServlet] are both mapped to the url-pattern [/registerServlet] which is not permitted”. The root cause is duplicated declaration in java file. The solution is to remove @WebServlet("/registerServlet")

```
/**
 * Servlet implementation class Ex5
 */
@WebServlet("/registerServlet")
public class RegisterServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;
```

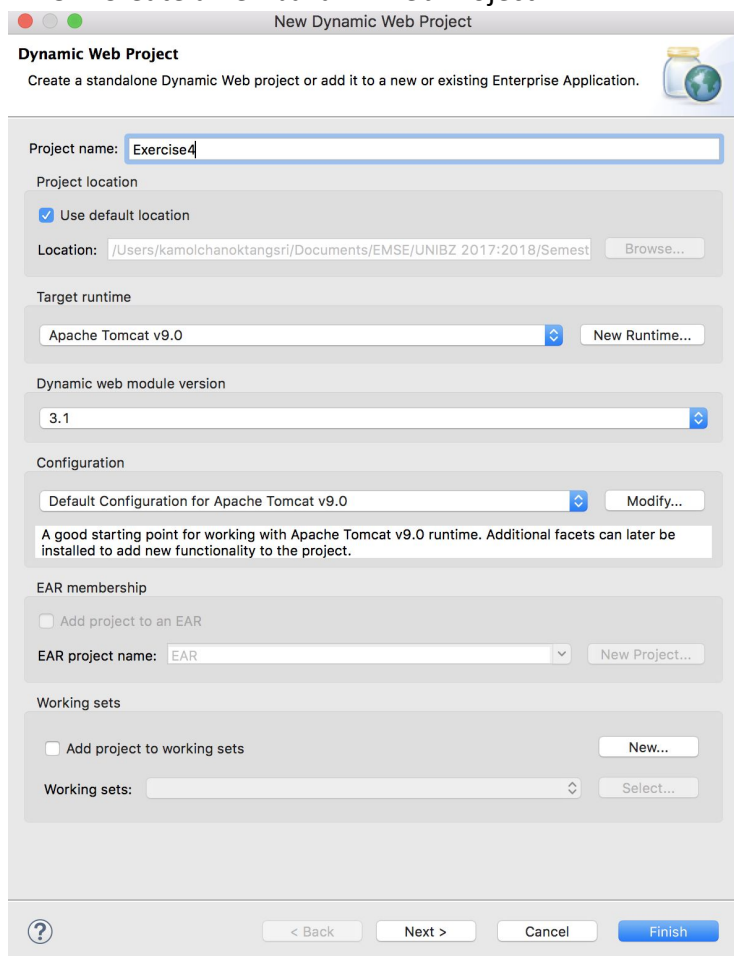
## Lab exercise 6 – Eclipse

### Steps

1. Install Eclipse OXEGEN2
2. Open eclipse

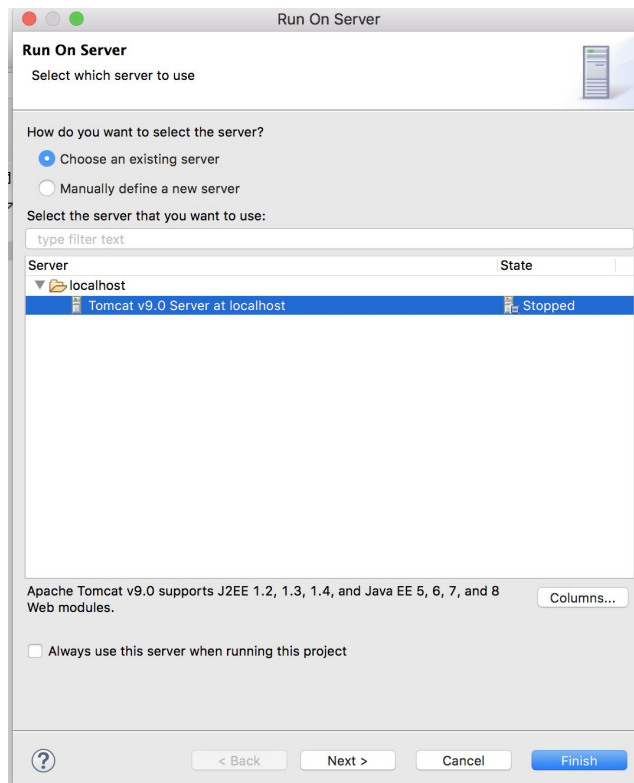


### 3. Create a new Java EE web Project

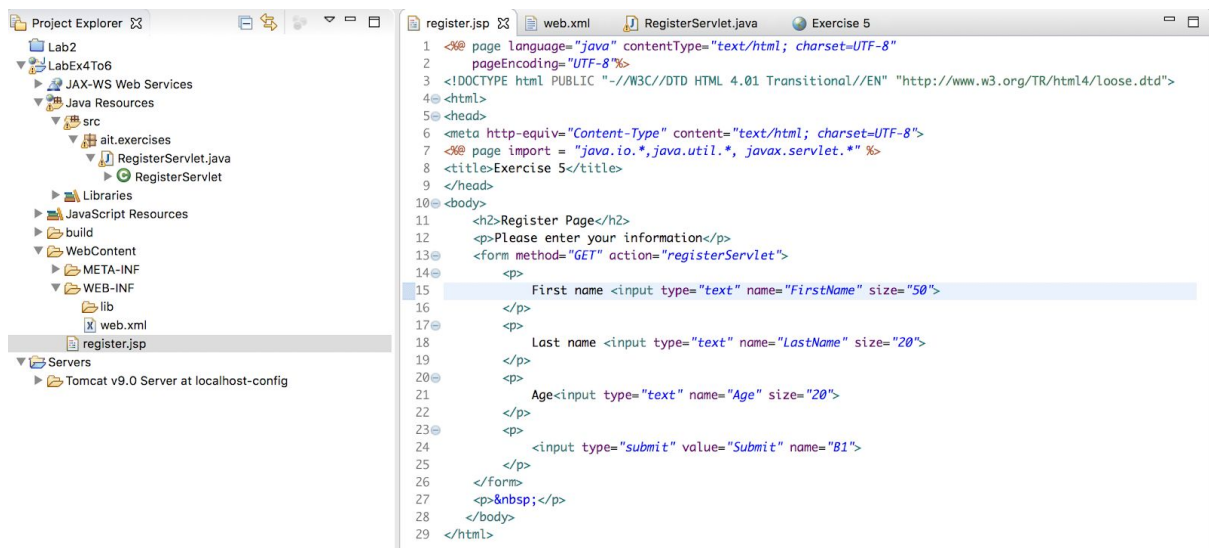


### 4. assign the project name and choose the target runtime (Apache tomcat v9.0)





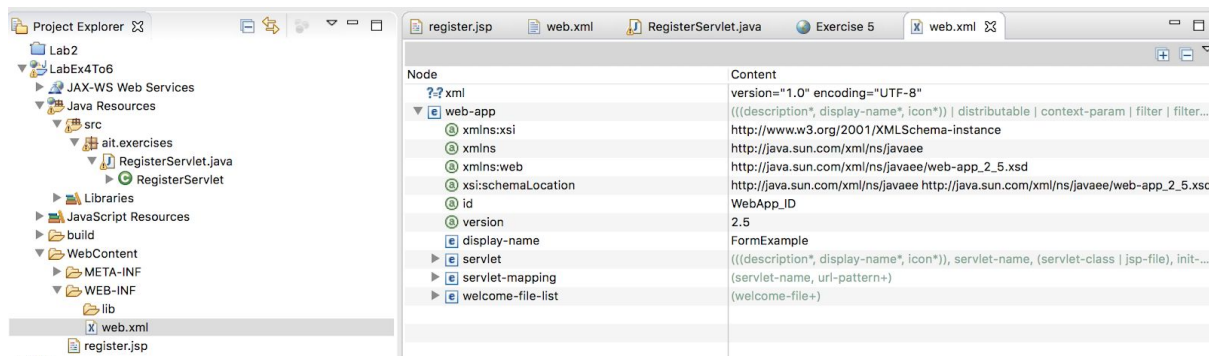
## 5. create .jsp file under webContent folder



## 6. create Java file

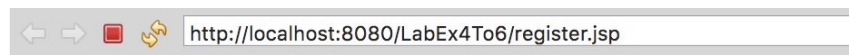


## 7. add web.xml file



## 8. run by clicking the icon

## 9. result



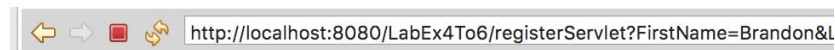
# Register Page

Please enter your information

First name

Last name

Age



## Exercise 6: Eclipse - Passing Parameters

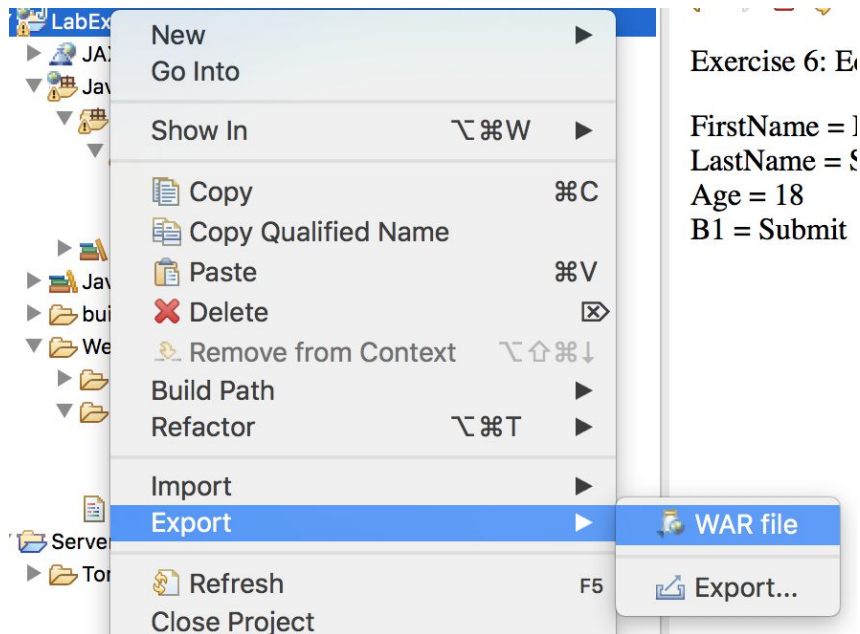
FirstName = Brandon

LastName = Stark

Age = 18

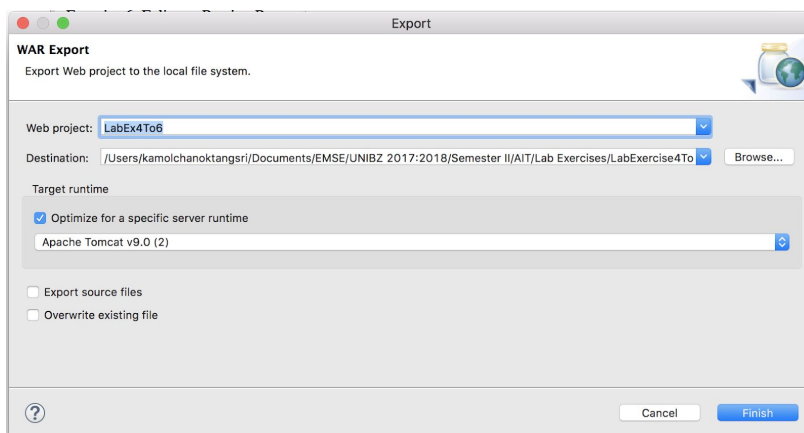
B1 = Submit

## 10. Export project WAR

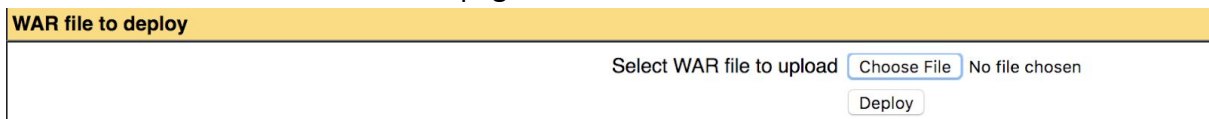


Exercise 6: E

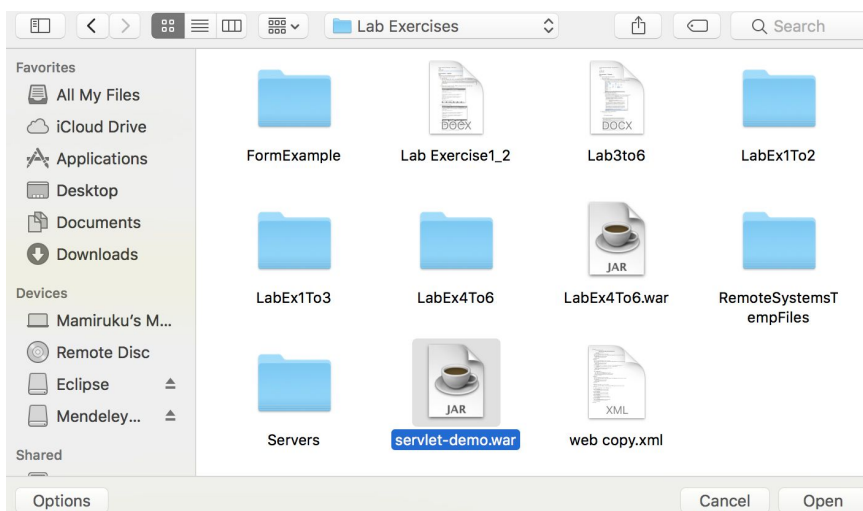
FirstName = ]  
LastName = S  
Age = 18  
B1 = Submit



### 11. Load WAR in tomcat admin page



### 12. select WAR file



### 13. The project will deploy and display in list of project

/servlet-demo	None specified		true	0	Start Stop Reload Undeploy
					Expire sessions with idle ≥ 30 minutes

14. the result after go to the project url



**Welcome!!**

### Problem

1. I could not install eclipse EE because I downloaded old version. Thus, I solved by downloading the new version