Installing Java, Eclipse and using Embedded Maven


In28Minutes
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Complete Video Tutorial

Watch the complete video tutorial explaining all the steps of installing java, eclipse and maven on YouTube:

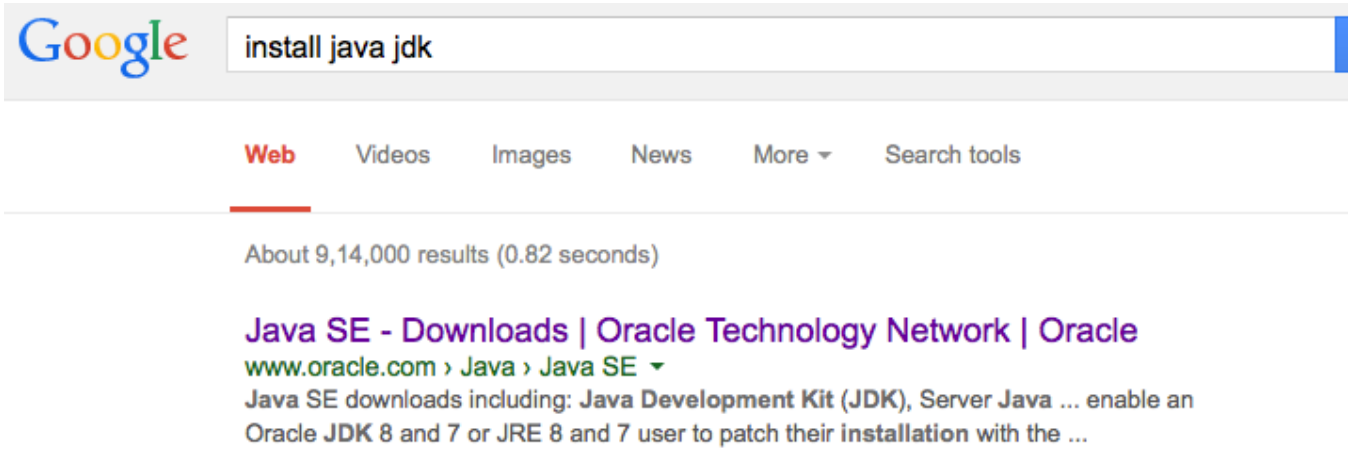
https://www.youtube.com/playlist?list=PLBBog2r6uMCSmMVTW_QmDLyASBvovyAO3

Home GITHUB Repository with updated version of all instructions:

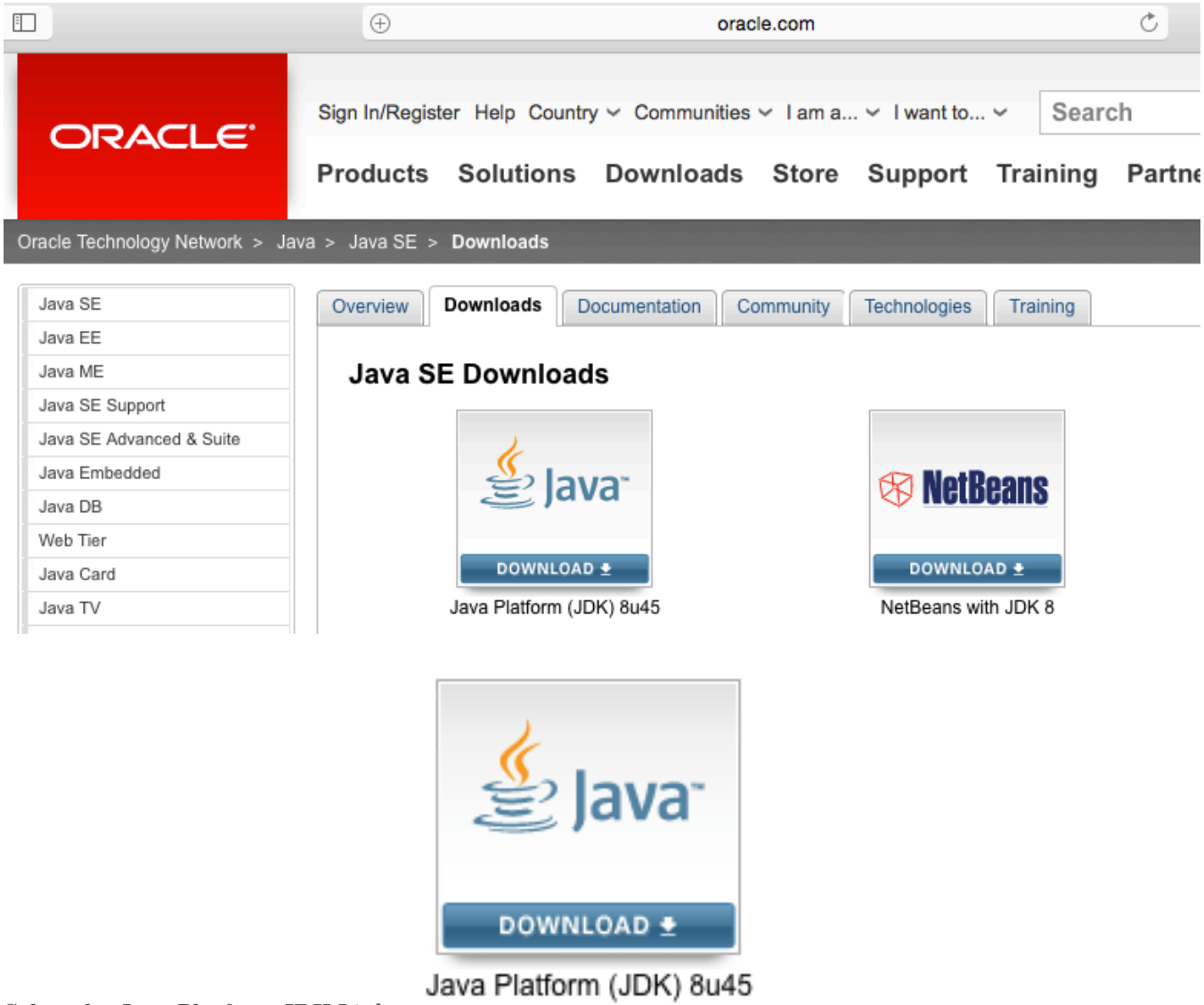
https://github.com/in28minutes/getting-started-in-5-steps

Installing Java

1. All commands should be run without double quotes.
2. Search for “install java jdk” on google.



3. Choose the first result from Google



4. Select the Java Platform JDK Link.

5. Accept the license agreement.

6. Choose the Java Install for your Operating System. If you are windows 64 bit operating system, choose the Windows x64 java.

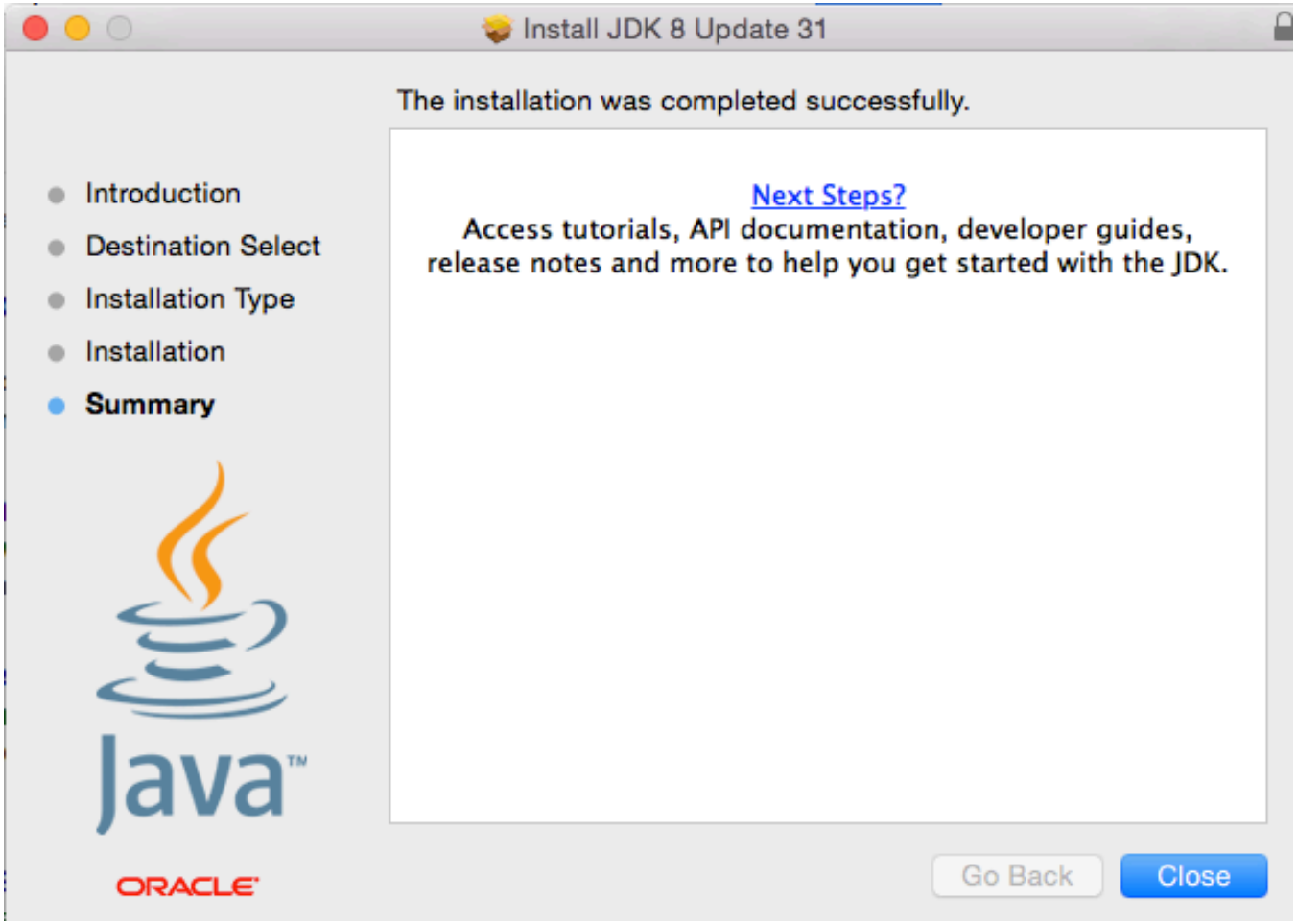
Linux x86	146.89 MB	jdk-8u45-linux-i586.rpm
Linux x86	166.88 MB	jdk-8u45-linux-i586.tar.gz
Linux x64	145.19 MB	jdk-8u45-linux-x64.rpm
Linux x64	165.24 MB	jdk-8u45-linux-x64.tar.gz
Mac OS X x64	221.98 MB	jdk-8u45-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	131.73 MB	jdk-8u45-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	92.9 MB	jdk-8u45-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	139.51 MB	jdk-8u45-solaris-x64.tar.Z
Solaris x64	95.88 MB	jdk-8u45-solaris-x64.tar.gz
Windows x86	175.98 MB	jdk-8u45-windows-i586.exe
Windows x64	180.44 MB	jdk-8u45-windows-x64.exe

7. Wait for the download to complete. Double click the file from the downloads folder. For Windows jdk-8u45-windows-x64.exe

8. Java Installer would launch up. Click Continue.

9. Click install on the next screen

10. Have a coffee and wait for the installation to complete. When the installation is complete, you would see the screen below:



11. Click close. We are ready to Rock and Roll. Do a Dance.
12. If you are on Windows : Open the Command Prompt window by clicking the Start button, clicking All Programs, clicking Accessories, and then clicking Command Prompt. (or use Ctrl + Esc, and type in cmd and launch up command)
13. If you are on Mac or other OS, launch up Terminal.

14. Type in the command “java –version” as shown in the screen. If it does not work, go to the trouble shooting section.

```
Rangas-MacBook-Pro:~ rangaraokaranam$ java -version
java version "1.8.0_31"
Java(TM) SE Runtime Environment (build 1.8.0_31-b13)
Java HotSpot(TM) 64-Bit Server VM (build 25.31-b07, mixed mode)
```

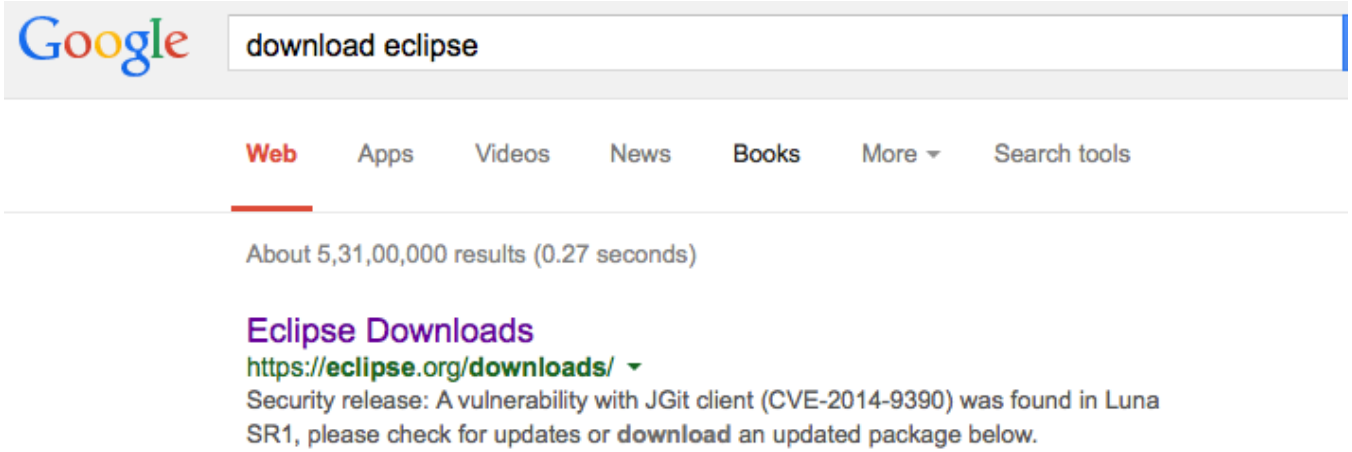
15. Troubleshooting:
    a. Check if there are any pre-existing Java installs. Uninstall them and reinstall again.
    b. Temporarily turn off firewalls and antivirus software.
    c. If you get file corrupt message, download the installation file again.
    d. Check if you are on 32-bit OS or 64-bit OS and ensure you are making use of the right java download.

Installing Eclipse

1. Check if Java is installed properly. Type in the command “java –version” as shown in the screen. If it does not work, go to the trouble shooting section of Java or Reinstall Java.

```
Rangas-MacBook-Pro:~ rangaraokaranam$ java -version
java version "1.8.0_31"
Java(TM) SE Runtime Environment (build 1.8.0_31-b13)
Java HotSpot(TM) 64-Bit Server VM (build 25.31-b07, mixed mode)
```

2. Search google for “download eclipse” and choose the first result.



3. Choose the right Operation System.

4. We recommend to choose “Eclipse IDE for Java EE Developers”. Choose 32 bit or 64 bit based on your operating system. (Right-click My Computer, and then click Properties. If "x64 Edition" is listed under System, your processor is capable of running a 64-bit version of Windows.)
5. Wait for the download to complete. Extract the zip file to a folder (Example : c:\eclipse).
6. Note that there is a **known problem** with the built-in decompression utility on all current versions of **Windows**. We recommend that you use a more robust decompression utility such as the open source **7zip** when decompressing an Eclipse download. Some people report success when initially decompressing Eclipse into a root directory (e.g. c:\) and then moving it to a more appropriate home (e.g. c:\Program Files\Eclipse)
7. Refer to Troubleshooting section of https://wiki.eclipse.org/Eclipse/Installation for more details about troubleshooting Installations

We will use Embedded Maven in Eclipse to run all our projects.

You can test your Embedded Maven in Eclipse watching this video:

https://www.youtube.com/watch?v=g8Sw0UPPjKY&list=PLBBog2r6uMCSmMVTW_QmDLyASBvovyAO3&index=4

You are ready to get started with the course now!

Good Luck!

Maven Standalone

- For most purposes, we recommend using embedded maven in Eclipse. Video :

  https://www.youtube.com/playlist?list=PLBBog2r6uMCSmMVTW_QmDLyASBvovyAO3

- Instructions for Installation of Stand Alone Maven

https://github.com/in28minutes/getting-started-in-5-steps - maven-standalone

Importing Java Eclipse Project

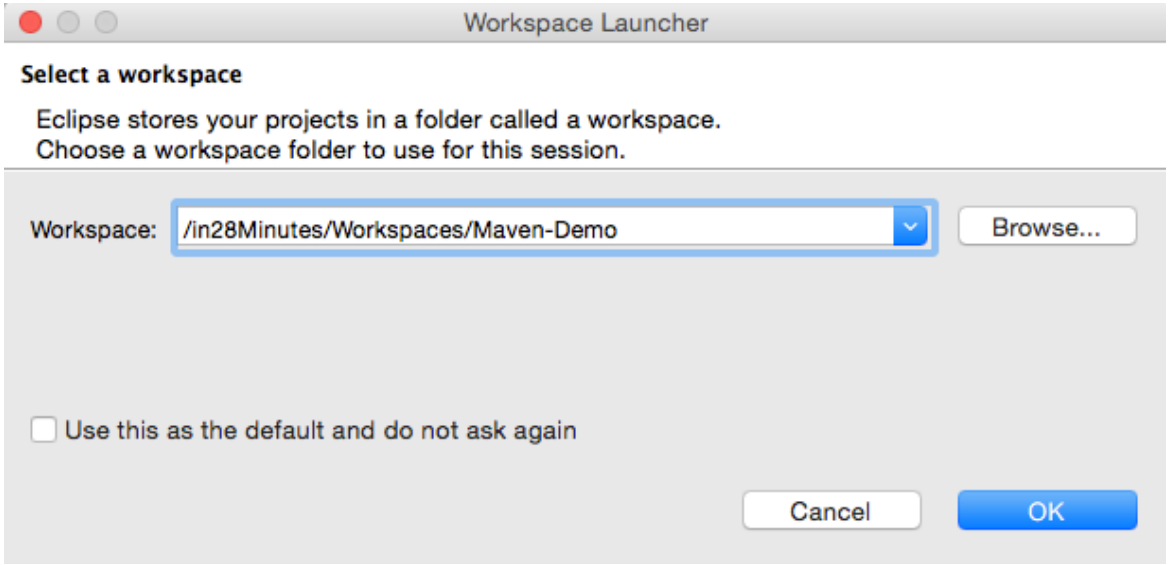
1. Download the zip file & Un zip (extract the contents) the zip file.
2. Check if the folder contains a .project file. Highlighted in the image below. You can also open the folder in windows explorer and check if it contains .project & .settings & .classpath files . (On mac these files are hidden. We used the command ls –la)

```
Rangas-MacBook-Pro:1.basic-maven-example rangaraokaranam$ ls -la
total 40
drwxr-xr-x  8 rangaraokaranam  wheel   272 Jun 12 19:49 .
drwxr-xr-x  9 rangaraokaranam  wheel   306 Jun 13 10:20 ..
-rw-r--r--@ 1 rangaraokaranam  wheel  6148 Jun 16 18:50 .DS_Store
-rw-r--r--  1 rangaraokaranam  wheel   996 Jun 11 06:42 .classpath
-rw-r--r--  1 rangaraokaranam  wheel   544 Jun 11 06:42 .project
drwxr-xr-x  4 rangaraokaranam  wheel   136 Jun 11 06:42 .settings
-rw-r--r--  1 rangaraokaranam  wheel   777 Jun 12 11:04 pom.xml
drwxr-xr-x  4 rangaraokaranam  wheel   136 Jun 11 06:40 src
```

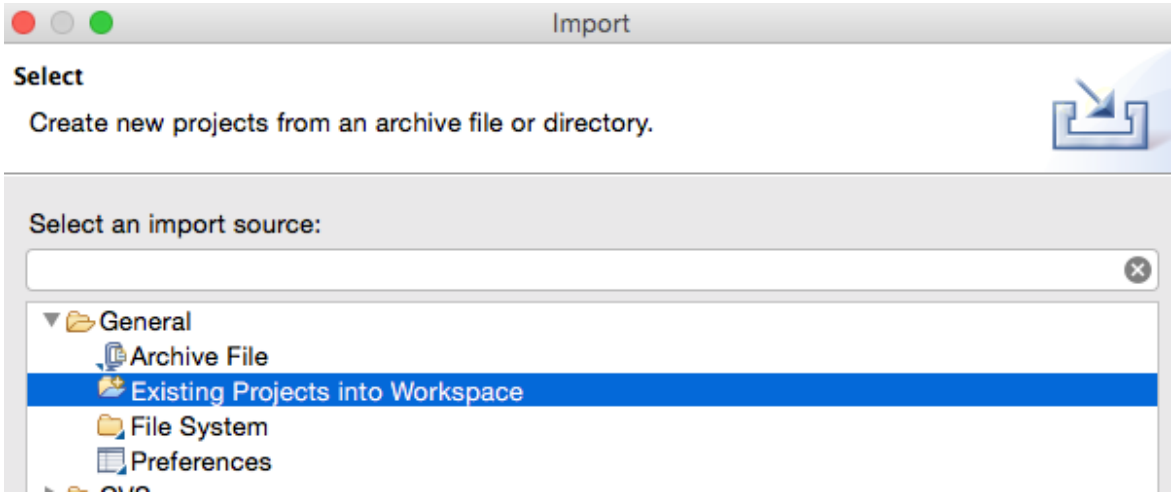
3. Copy the folder path into clipboard. (ctrl + c)

```
Rangas-MacBook-Pro:1.basic-maven-example rangaraokaranam$ pwd
/in28Minutes/java/maven/1.basic-maven-example
```

4. Launch up Eclipse and give folder name (Other folder name) as the workspace folder. Click OK.



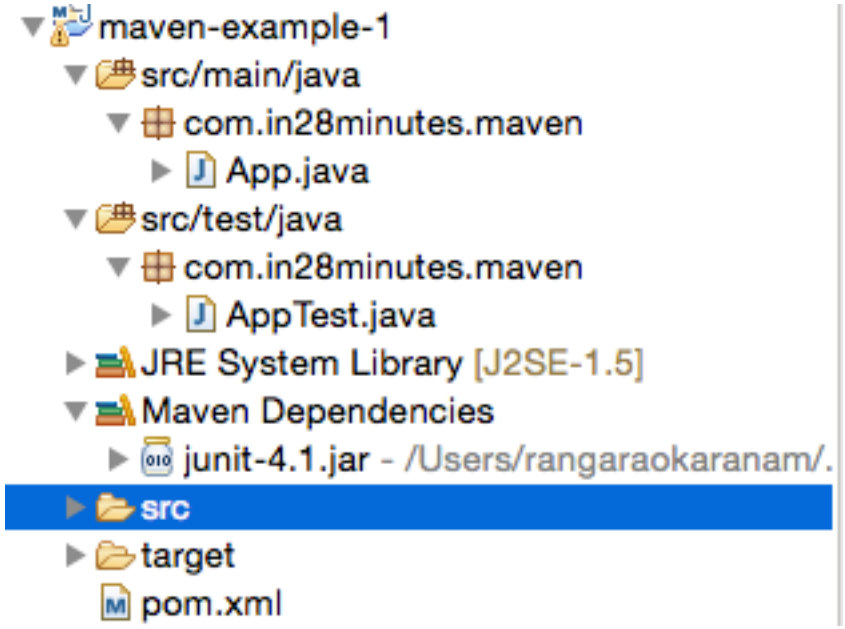
5. Once Eclipse Launches up Go To File -> Import -> General -> Existing Projects into Workspace. Click Next.



6. Select Root Directory as the folder we copied earlier (the folder which contained .project, .classpath and .settings files).

7. You should see a project highlighted in the Projects section.

8. If you do not see any project, you are checking a wrong folder. Make sure you browse and select the correct folder containing the .project and the .classpath files.
9. Click Finish.



10. Your project would be imported and You are ready to work on it.
11. Good Luck and Have a Safe Party

Importing a Maven Project into Eclipse

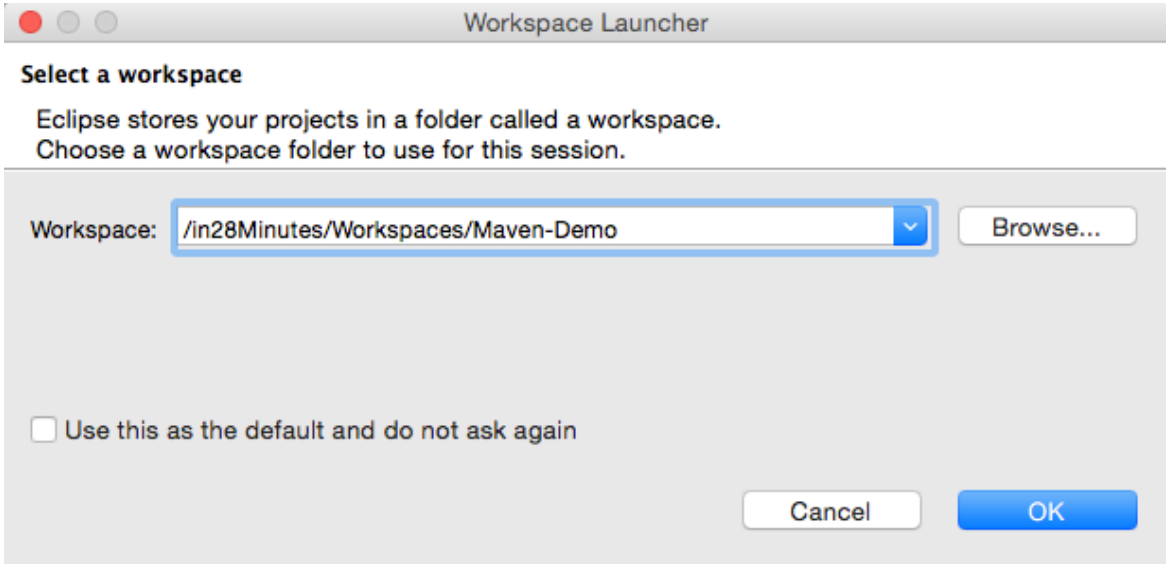
1. Download the zip file & Un zip (extract the contents) the zip file.
2. Check if the folder contains a pom.xml file. Highlighted in the image below. You can also open the folder in windows explorer and check if it contains pom.xml file.

```
Rangas-MacBook-Pro:1.basic-maven-example rangaraokaranam$ ls -l
total 8
-rw-r--r--  1 rangaraokaranam  wheel  777 Jun 12 11:04 pom.xml
drwxr-xr-x  4 rangaraokaranam  wheel  136 Jun 11 06:40 src
drwxr-xr-x  4 rangaraokaranam  wheel  136 Jun 16 19:05 target
```

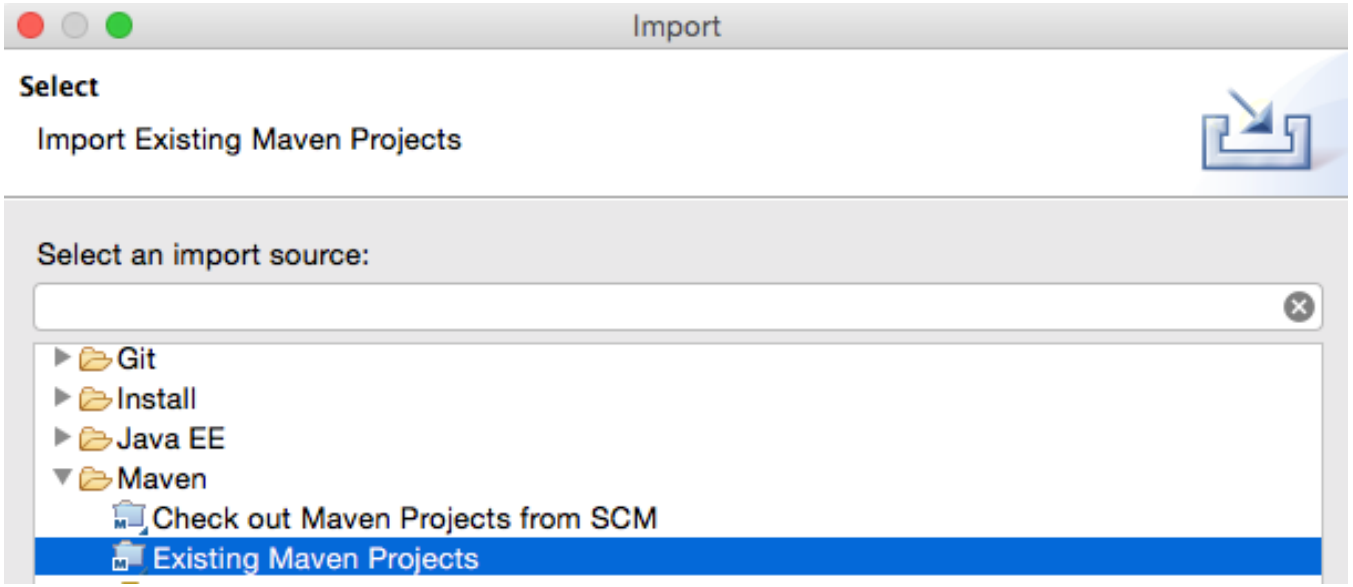
3. Copy the folder path into clipboard. (ctrl + c)

```
Rangas-MacBook-Pro:1.basic-maven-example rangaraokaranam$ pwd
/in28Minutes/java/maven/1.basic-maven-example
```

4. Launch up Eclipse and give folder name (Other folder name) as the workspace folder. Click OK.



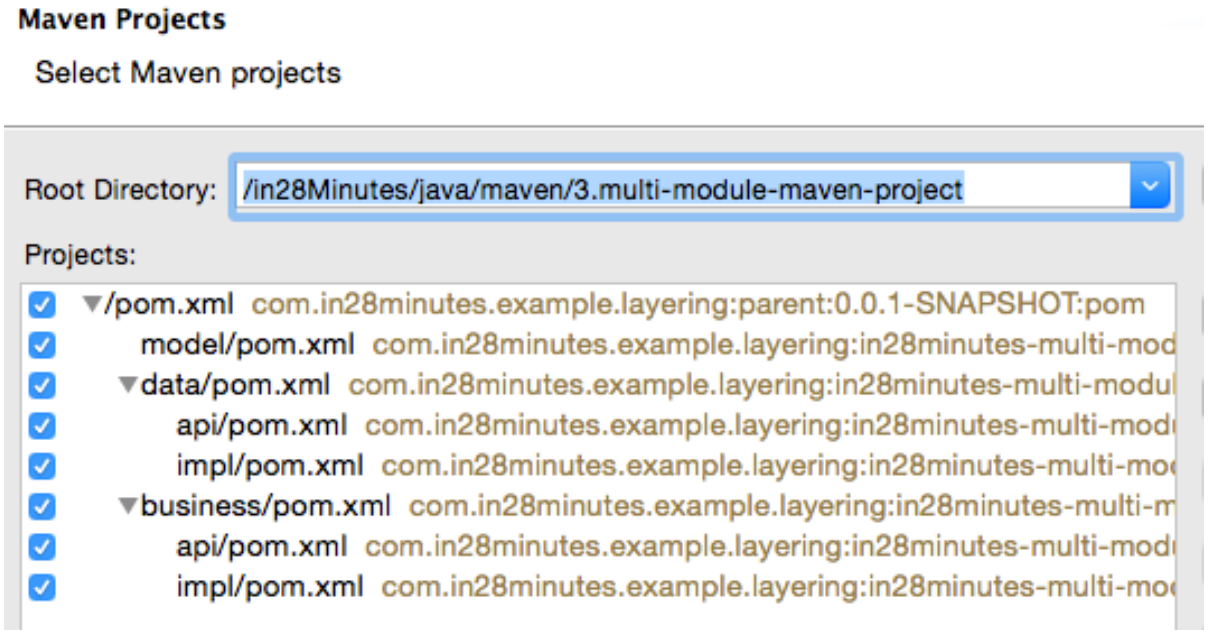
5. Once Eclipse Launches up Go To File -> Import -> Maven -> Existing Maven Projects. Click Next.



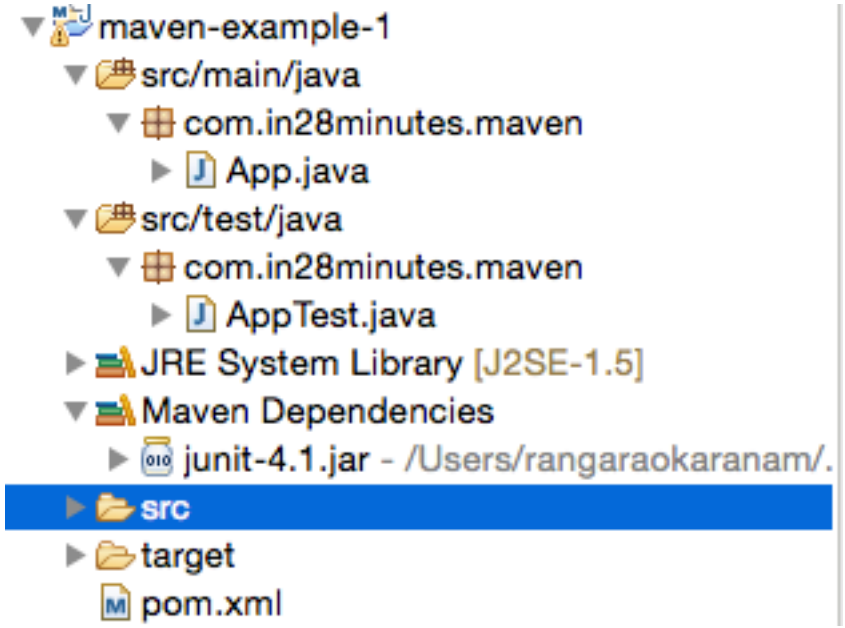
6. Select Root Directory as the folder we copied earlier (the folder which contained the pom.xml file).

7. You should see a project highlighted in the Projects section.

8. If you are in a multi module project, then you would see multi projects ready for import.



9. If you do not see any project, you are checking a wrong folder. Make sure you browse and select the correct folder containing the pom.xml files.
10. Click Finish.



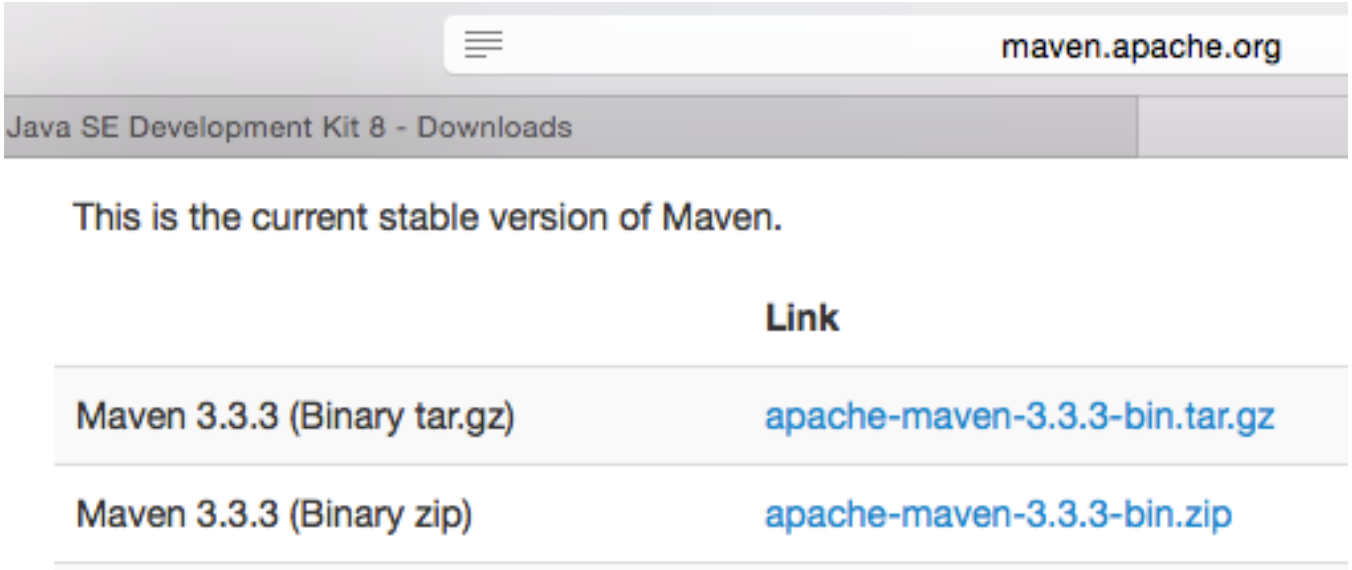
11. Your project would be imported and You are ready to work on it.
12. Good Luck and Have a Safe Party

Installing Maven

1. Check if Java is installed properly. Type in the command "java –version" as shown in the screen. If it does not work, go to the trouble shooting section of Java or Reinstall Java.

```
Rangas-MacBook-Pro:~ rangaraokaranam$ java -version
java version "1.8.0_31"
Java(TM) SE Runtime Environment (build 1.8.0_31-b13)
Java HotSpot(TM) 64-Bit Server VM (build 25.31-b07, mixed mode)
```

2. Note that Maven 3.3 requires JDK 1.7 or above, Maven 3.2 requires JDK 1.6 or above, while Maven 3.0/3.1 requires JDK 1.5 or above.
3. Download Apache Maven. Visit Maven official website, download the Maven zip file. Example : apache-maven-3.3.3-bin.zip



4. On Windows

a. Unzip the distribution archive, i.e. *apache-maven-3.3.3-bin.zip* to the directory you wish to install Maven 3.3.3. These instructions assume you chose *C:\maven*. The subdirectory apache-maven-3.3.3 will be created from the archive.

b. Add the unpacked distribution's bin directory to your user *PATH* environment variable by opening up the system properties (WinKey + Pause), selecting the "Advanced" tab, and the "Environment Variables" button, then adding or selecting the *PATH* variable in the user variables with the value *C:\maven*\apache-maven-3.3.3\bin.

c. You can check if you are using the right value by opening up the folder using "cd *C:\maven*\apache-maven-3.3.3\bin" and then typing the command "mvn --version".

d. Make sure that JAVA_HOME exists in your user variables or in the system variables and it is set to the location of your JDK, e.g. C:\Program Files\Java\jdk1.7.0_51.

e. Open a *new* command prompt (Winkey + R then type cmd) (or terminal on mac) and run "mvn –version" to verify that it is correctly installed.

```
Rangas-MacBook-Pro:~ rangaraokaranam$ mvn --version
Apache Maven 3.3.3 (7994120775791599e205a5524ec3e0dfe41d4a06; 2015-04-22T17:27:3
7+05:30)
Maven home: /apachemaven3.3.3
Java version: 1.8.0_31, vendor: Oracle Corporation
Java home: /Library/Java/JavaVirtualMachines/jdk1.8.0_31.jdk/Contents/Home/jre
Default locale: en_US, platform encoding: UTF-8
OS name: "mac os x", version: "10.10.2", arch: "x86_64", family: "mac"
```

5. Unix-based Operating Systems (Linux, Solaris and Mac OS X)

a. Extract the distribution archive, i.e. apache-maven-3.3.3-bin.tar.gz to the directory you wish to install Maven 3.3.3. These instructions assume you chose /usr/local/apache-maven. The subdirectory apache-maven-3.3.3 will be created from the archive.

b. In a command terminal, add unpacked distribution's bin to your *PATH* environment variable, e.g. export PATH=$PATH:/usr/local/apache-maven/apache-maven-3.3.3/bin.

c. Make sure that JAVA_HOME is set to the location of your JDK, e.g. export JAVA_HOME=/usr/java/jdk1.7.0_51 .

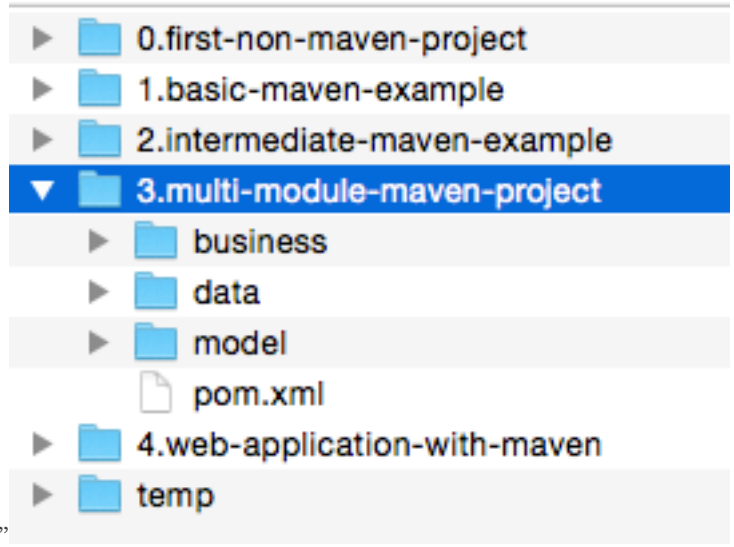
d. Run mvn --version to verify that it is correctly installed.

```
Rangas-MacBook-Pro:~ rangaraokaranam$ mvn --version
Apache Maven 3.3.3 (7994120775791599e205a5524ec3e0dfe41d4a06; 2015-04-22T17:27:3
7+05:30)
Maven home: /apachemaven3.3.3
Java version: 1.8.0_31, vendor: Oracle Corporation
Java home: /Library/Java/JavaVirtualMachines/jdk1.8.0_31.jdk/Contents/Home/jre
Default locale: en_US, platform encoding: UTF-8
OS name: "mac os x", version: "10.10.2", arch: "x86_64", family: "mac"
```

Important Maven Commands

Set Up

1. First you need a maven project. You can download maven projects that are associated with the video. Extract the zip file from our website www.in28minutes.com and put it into a directory. Identify the top most directory containing the pom.xml. That's your root pom.xml
2. Below is the structure of Zip for our Maven Tutorial. We want to run the third example. The root pom.xml for third project is present in the folder "3.multi-module-maven-project"



3. Open up Command prompt or Terminal. CD to this folder. For example "cd c:\maven-example\3.multi-module-maven-project"

4. List the files in the folder. Dir command on windows (and ls on unix based OS). You should see the pom.xml.

```
Rangas-MacBook-Pro:3.multi-module-maven-project rangaraokaranam$ ls -l
total 16
drwxrwxrwx@ 8 rangaraokaranam  wheel   272 Jun 11 08:46 business
drwxrwxrwx@ 8 rangaraokaranam  wheel   272 Jun 11 08:47 data
drwxrwxrwx@ 8 rangaraokaranam  wheel   272 Jun 13 17:34 model
-rwxrwxrwx@ 1 rangaraokaranam  wheel  6559 Jun 13 09:37 pom.xml
```

5. You are all set to run the maven commands on this project.

mvn clean install

1. This command is used to build any project which is created using Maven. It will build all projects (and subprojects or modules) which are present in the pom.xml.
2. Follow the instructions in the Set Up section. You should be in cmd prompt or terminal and your present working directory should be the one containing pom.xml of the project you want to work on.

```
Rangas-MacBook-Pro:3.multi-module-maven-project rangaraokaranam$ ls -l
total 16
drwxrwxrwx@ 8 rangaraokaranam  wheel   272 Jun 11 08:46 business
drwxrwxrwx@ 8 rangaraokaranam  wheel   272 Jun 11 08:47 data
drwxrwxrwx@ 8 rangaraokaranam  wheel   272 Jun 13 17:34 model
-rwxrwxrwx@ 1 rangaraokaranam  wheel  6559 Jun 13 09:37 pom.xml
```

3. Run the command "mvn clean install"

```
Rangas-MacBook-Pro:3.multi-module-maven-project rangaraokaranam$ mvn clean install
```

4. All projects should build and you should see Build Success message.

```
[INFO] ------------------------------------------------------------------------
[INFO] Reactor Summary:
[INFO]
[INFO] parent ..................................... SUCCESS [  1.788 s]
[INFO] in28minutes-multi-module-model ............. SUCCESS [  6.789 s]
[INFO] in28minutes-multi-module-data .............. SUCCESS [  0.015 s]
[INFO] in28minutes-multi-module-data-api .......... SUCCESS [  0.156 s]
[INFO] in28minutes-multi-module-data-impl ......... SUCCESS [  0.186 s]
[INFO] in28minutes-multi-module-business .......... SUCCESS [  0.007 s]
[INFO] in28minutes-multi-module-business-api ...... SUCCESS [  0.114 s]
[INFO] in28minutes-multi-module-business-impl ..... SUCCESS [  5.239 s]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time: 14.876 s
[INFO] Finished at: 2015-06-18T08:38:22+05:30
[INFO] Final Memory: 17M/84M
[INFO] ------------------------------------------------------------------------
```

5. If you don't make sure you are in the correct directory. Go to the "Set Up" section and retry the steps again.

mvn tomcat7:run

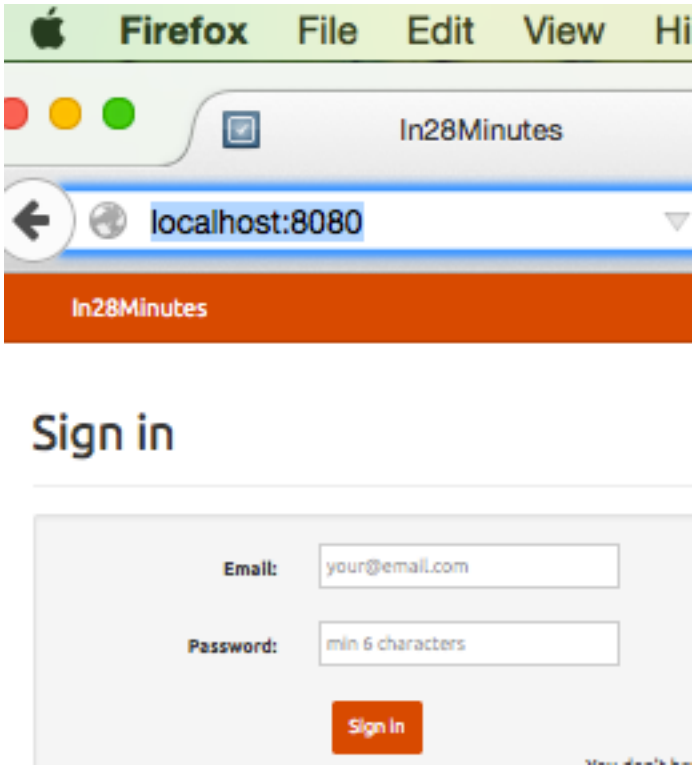
1. First run "mvn clean install" on the root project. Follow steps given above.
2. Switch to directory containing the web application (war pom.xml). In the below example the war directory is in28minutes-web-servlet-jsp.

```
Rangas-MacBook-Pro:4.web-application-with-maven rangaraokaranam$ ls -1
in28minutes-core
in28minutes-web-common
in28minutes-web-servlet-jsp
pom.xml
Rangas-MacBook-Pro:4.web-application-with-maven rangaraokaranam$ cd in28minutes-web-servlet-jsp/
```

3. Run the command “mvn tomcat7:run”. Everything should succeed and you should see a message that the server is started. Note down the port number.

```
18/06/2015 08:43 [DEBUG] org.springframework.core.env.PropertySourcesPropertyResolver:81 - Searching for key 'sprin
g.liveBeansView.mbeanDomain' in [systemProperties]
18/06/2015 08:43 [DEBUG] org.springframework.core.env.PropertySourcesPropertyResolver:81 - Searching for key 'sprin
g.liveBeansView.mbeanDomain' in [systemEnvironment]
18/06/2015 08:43 [DEBUG] org.springframework.core.env.PropertySourcesPropertyResolver:103 - Could not find key 'spr
ing.liveBeansView.mbeanDomain' in any property source. Returning [null]
18/06/2015 08:43 [DEBUG] org.springframework.web.context.ContextLoader:308 - Published root WebApplicationContext a
s ServletContext attribute with name [org.springframework.web.context.WebApplicationContext.ROOT]
18/06/2015 08:43 [INFO ] org.springframework.web.context.ContextLoader:313 - Root WebApplicationContext: initializa
tion completed in 3651 ms
Jun 18, 2015 8:43:47 AM org.apache.catalina.util.SessionIdGenerator createSecureRandom
INFO: Creation of SecureRandom instance for session ID generation using [SHA1PRNG] took [323] milliseconds.
Jun 18, 2015 8:43:47 AM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-bio-8080"]
```

4. Run the application in browser http://localhost:8080/. It should work and you are all setup to run a web application in tomcat. Good Luck with learning developing applications now..

5. 
Firefox File Edit View Hi
In28Minutes
localhost:8080
In28Minutes
Sign in
Email:
your@email.com
Password:
min 6 characters
Sign In