INSTALLATION GUIDELINE

This user manual is applying for this web-based application only. Please follow exactly steps by steps to run this web-based application

1) SOFTWARE & HARDWARE REQUIREMENTS

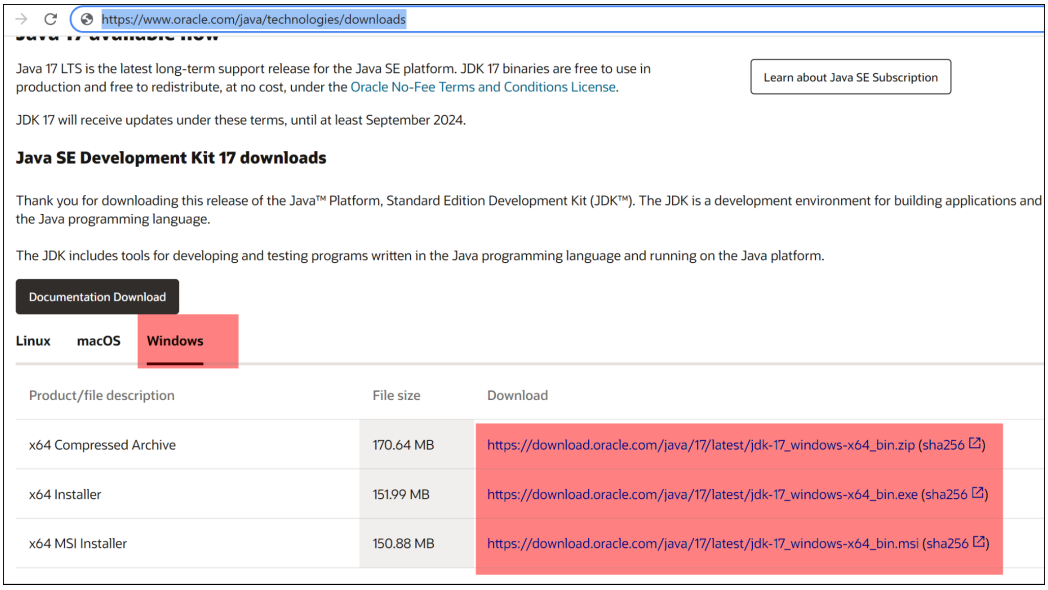
a) Java SDK
b) NodeJS
c) Angular
d) Spring Tools Suite

2) INSTALLATION

a) Install JAVA SDK

i) Step 1. Go to https://www.oracle.com/java/technologies/downloads

ii) Step 2. Select platform to download (e.g, Windows) and click on link in Download column to download JAVA SDK file



iii) Step 3. Run downloaded file and complete installation steps by steps

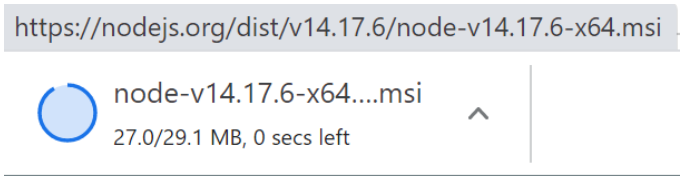
b) Install NodeJS

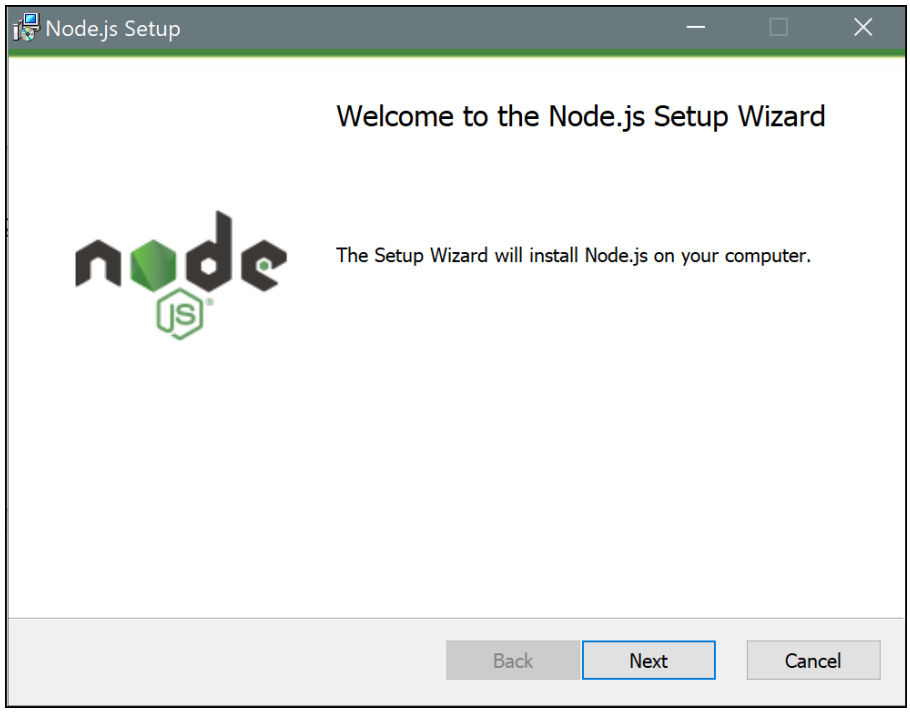
i) Step 1. Go to https://nodejs.org/en/download/. Download appropriate version (In this case, we selected the last Windows Version

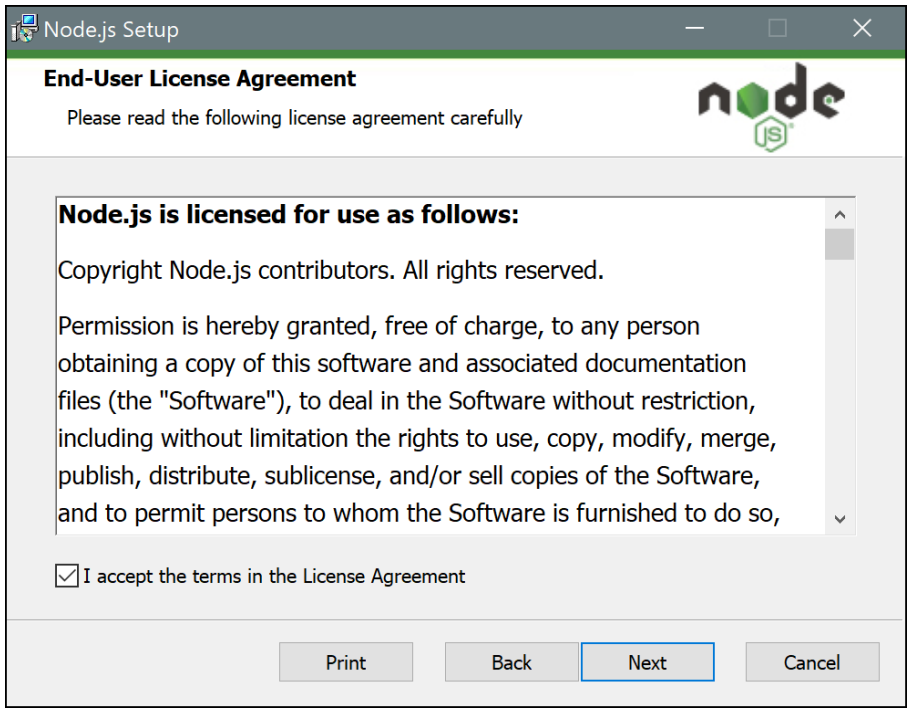
ii) Step 2. Run Installation File

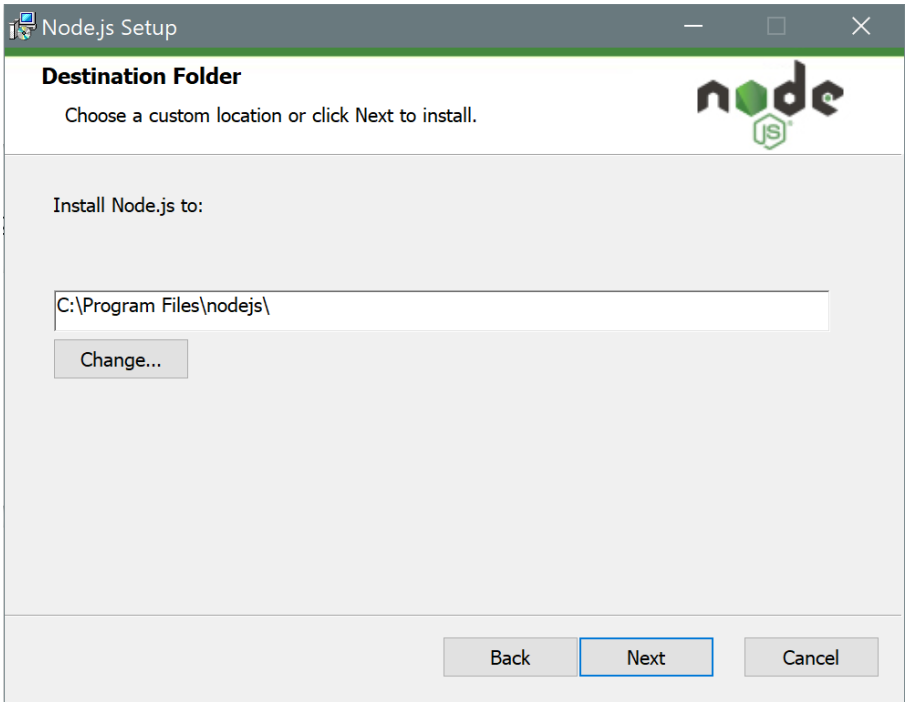
iii) Step 3. Keep all default values and click the **Next** button until completing the process.

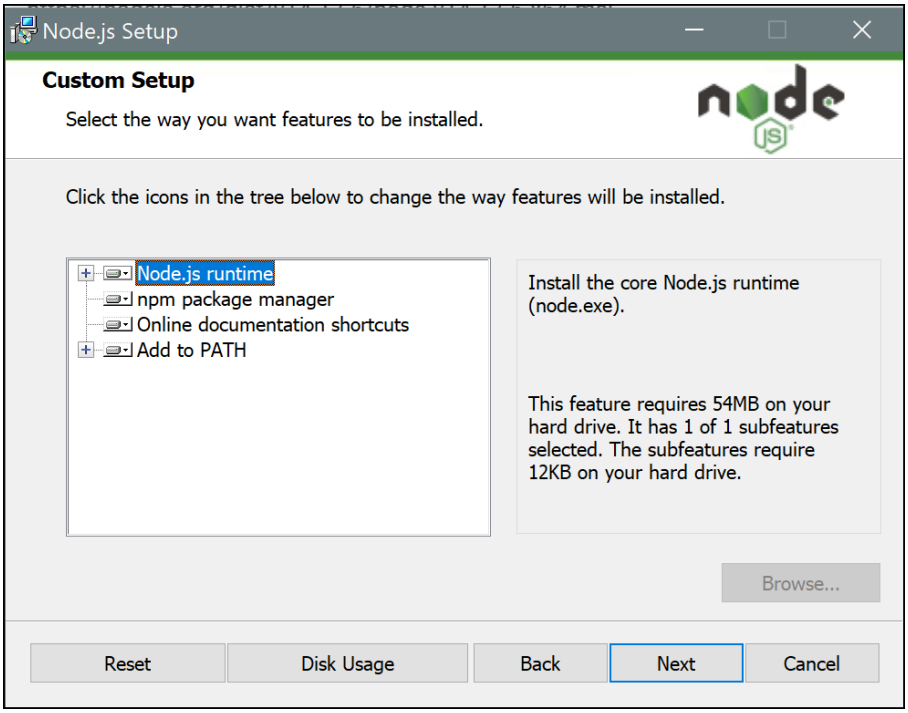
iv) Step 4. Open CMD and run command to check version of NodeJS

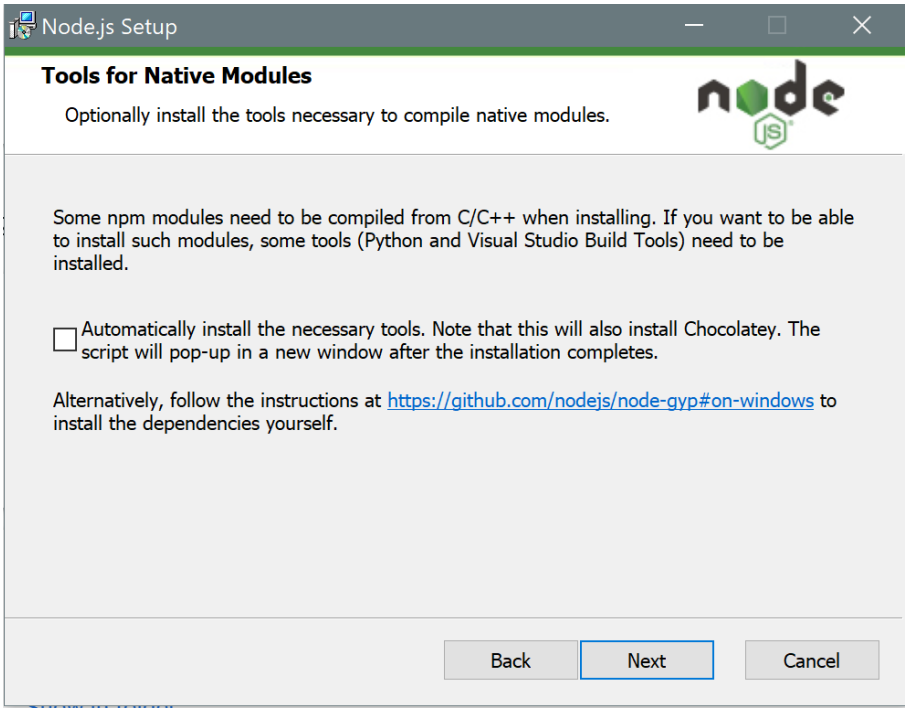

https://nodejs.org/dist/v14.17.6/node-v14.17.6-x64.msi
node-v14.17.6-x64....msi
27.0/29.1 MB, 0 secs left

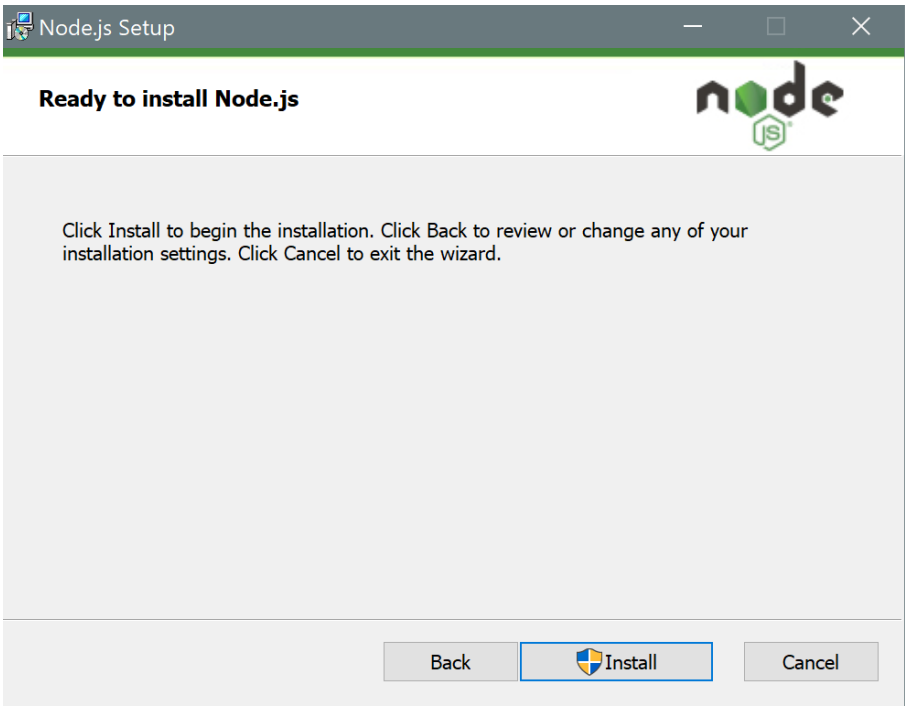

Node.js Setup
Welcome to the Node.js Setup Wizard
The Setup Wizard will install Node.js on your computer.
Back
Next
Cancel

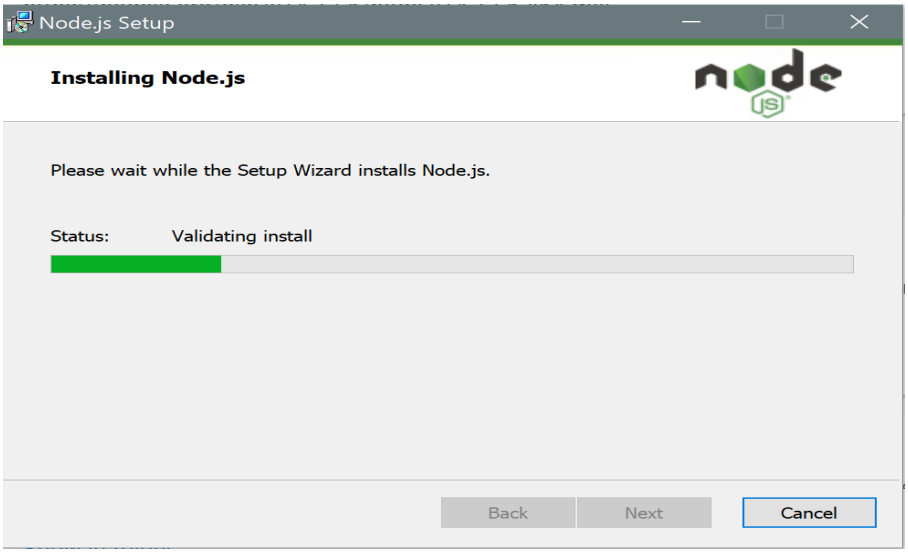

Node.js Setup
End-User License Agreement
Please read the following license agreement carefully
Node.js is licensed for use as follows:
Copyright Node.js contributors. All rights reserved.
Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so,
I accept the terms in the License Agreement
Print
Back
Next
Cancel

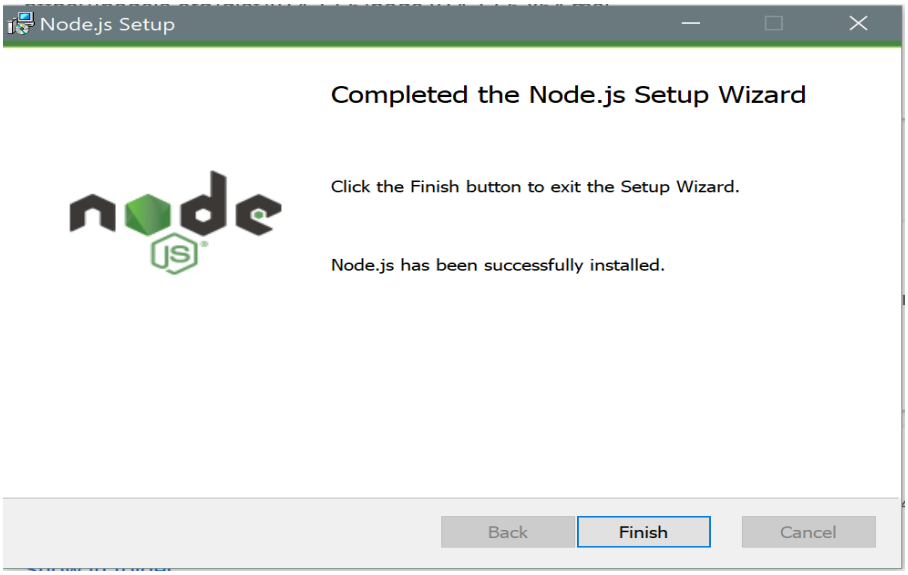

Node.js Setup
Destination Folder
Choose a custom location or click Next to install.
Install Node.js to:
C:\Program Files\nodejs\
Change...
Back
Next
Cancel

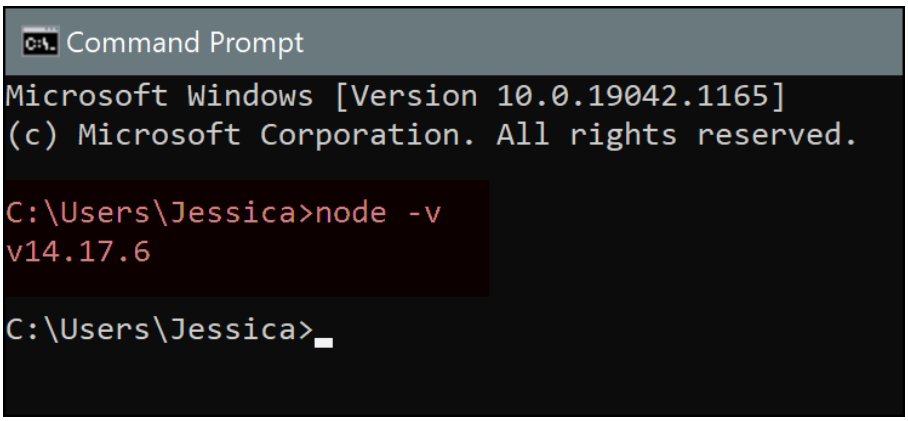

Node.js Setup
Custom Setup
Select the way you want features to be installed.
Click the icons in the tree below to change the way features will be installed.
Node.js runtime
npm package manager
Online documentation shortcuts
Add to PATH
Install the core Node.js runtime (node.exe).
This feature requires 54MB on your hard drive. It has 1 of 1 subfeatures selected. The subfeatures require 12KB on your hard drive.
Browse...
Reset
Disk Usage
Back
Next
Cancel


Node.js Setup
Tools for Native Modules
Optionally install the tools necessary to compile native modules.
Some npm modules need to be compiled from C/C++ when installing. If you want to be able to install such modules, some tools (Python and Visual Studio Build Tools) need to be installed.
Automatically install the necessary tools. Note that this will also install Chocolatey. The script will pop-up in a new window after the installation completes.
Alternatively, follow the instructions at https://github.com/nodejs/node-gyp#on-windows to install the dependencies yourself.
Back
Next
Cancel


Node.js Setup
Ready to install Node.js
Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.
Back
Install
Cancel







Check Version to verify installed NodeJS successfully

c) INSTALL ANGULAR

i) **Step 1.** Open CMD -> Navigate to Angular Folder of project (In this project folder name is "**employee_management_system_angular"**)

For example: We stored the project in the D directory of the computer. So we use following command line:

- Open **CMD**
- Type **D:**
- Use **cd \path** (path is location of folder)

```
C:\Users\Jessica>D:

D:\>cd D:\Project\EMS\employee_management_system_angular

D:\Project\EMS\employee_management_system_angular>
```

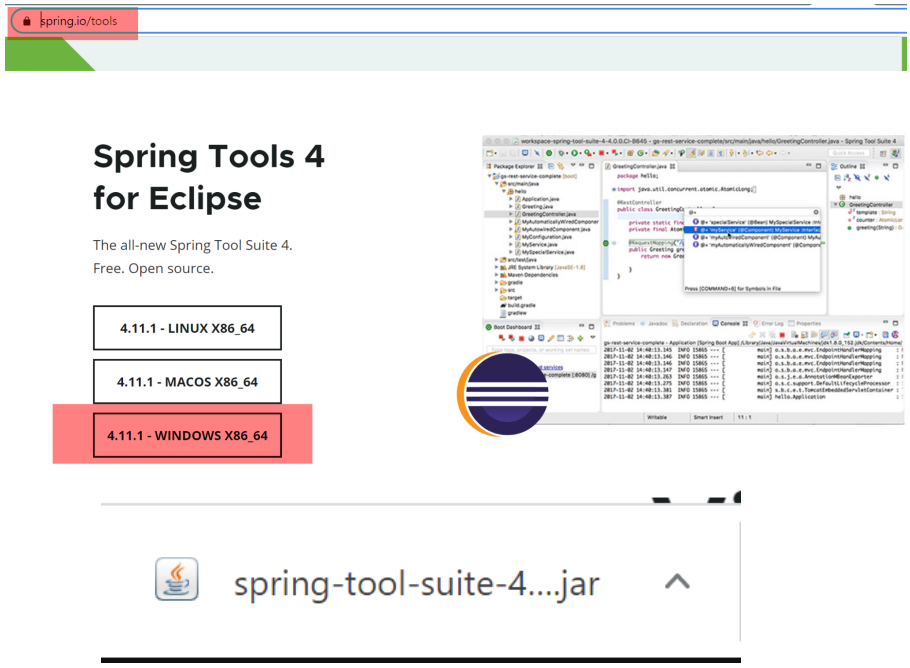
ii) **Step 2.** Run **npm install**

```
D:\Project\EMS\employee_management_system_angular>npm install
```

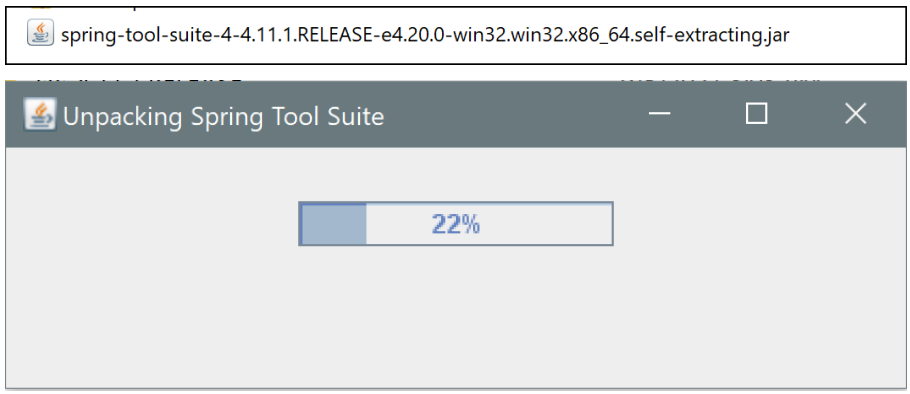
```
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: node-sass@4.10.0 po
stinstall: `node scripts/build.js`
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: Exit status 1

added 1155 packages from 1171 contributors and audited 1290 package
s in 60.053s

9 packages are looking for funding
  run `npm fund` for details

found 208 vulnerabilities (74 low, 27 moderate, 104 high, 3 critica
l)
  run `npm audit fix` to fix them, or `npm audit` for details

D:\Project\EMS\employee_management_system_angular>
```

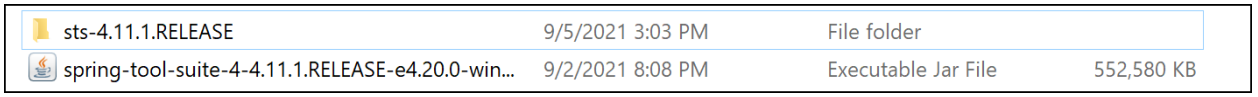
d) INSTALL SPRING TOOLS SUITE

i) **Step 1.** Go to https://spring.io/tools and download appropriate version (We installed **Spring Tools 4 for Eclipse - 4.11.1 - Windows X86_64**)

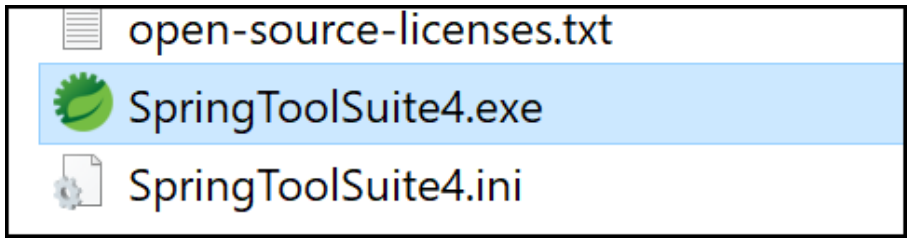


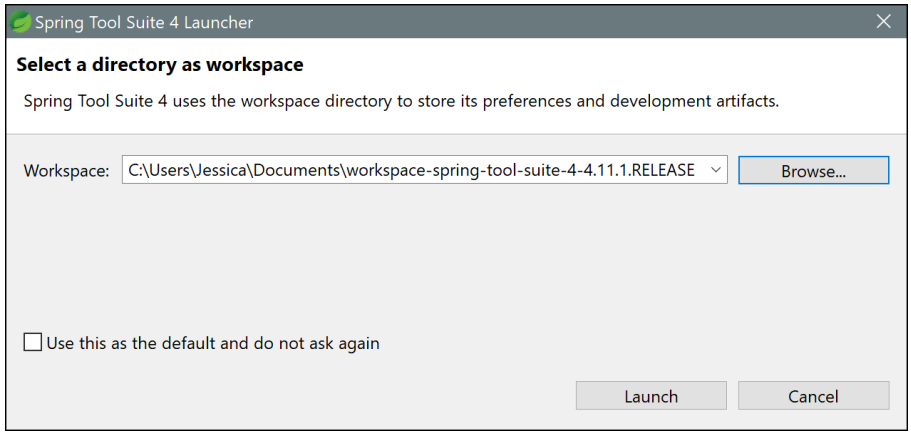
ii) **Step 2.** Run downloaded file ***"spring-tool-suite-4-4.11.1.RELEASE-e4.20.0-win32.win32.x86_64.self-extracting.jar"*** *and it will extract to folder name* ***"sts-4.11.1.RELEASE"***

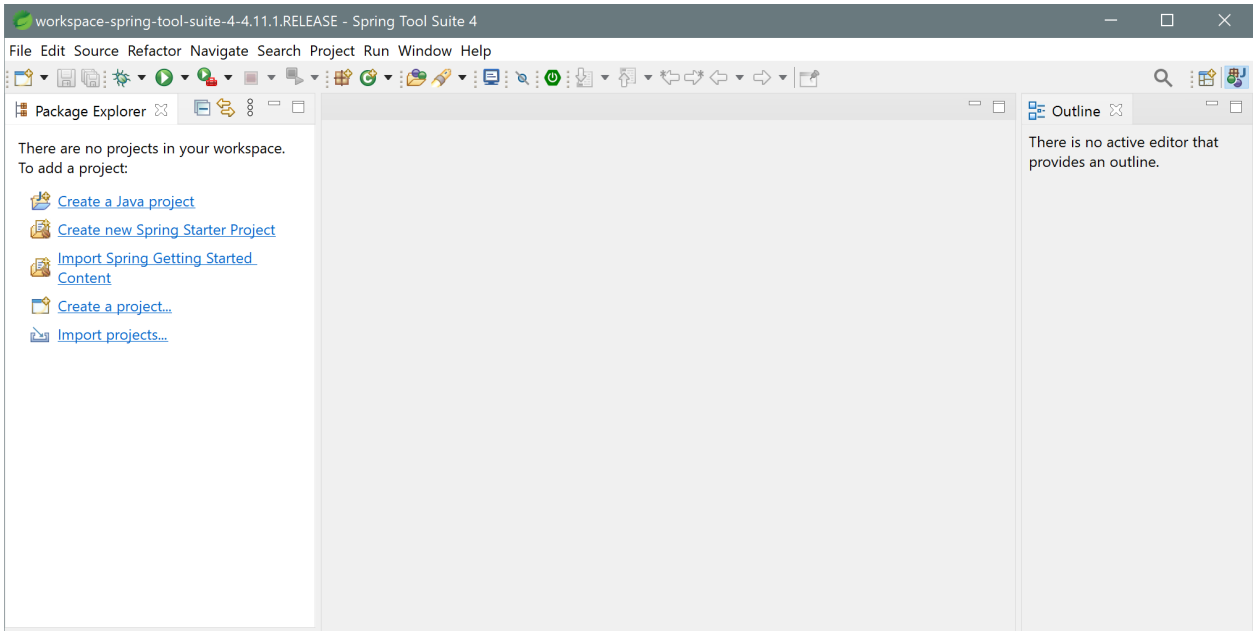




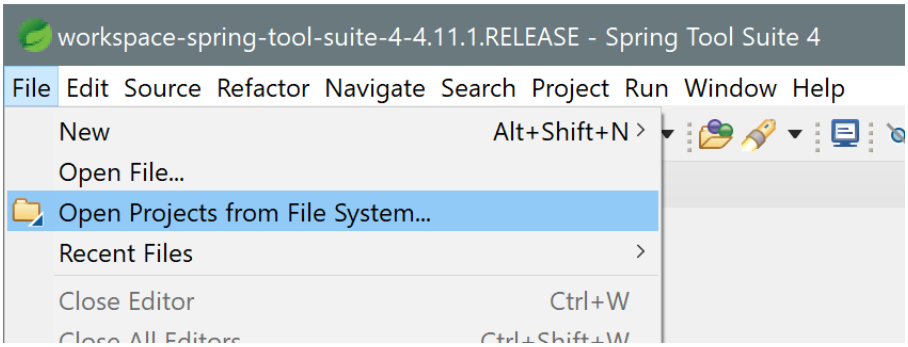
iii) **Step 3.** Open **"sts-4.11.1.RELEASE"** folder and run **SpringToolSuite4.exe** file

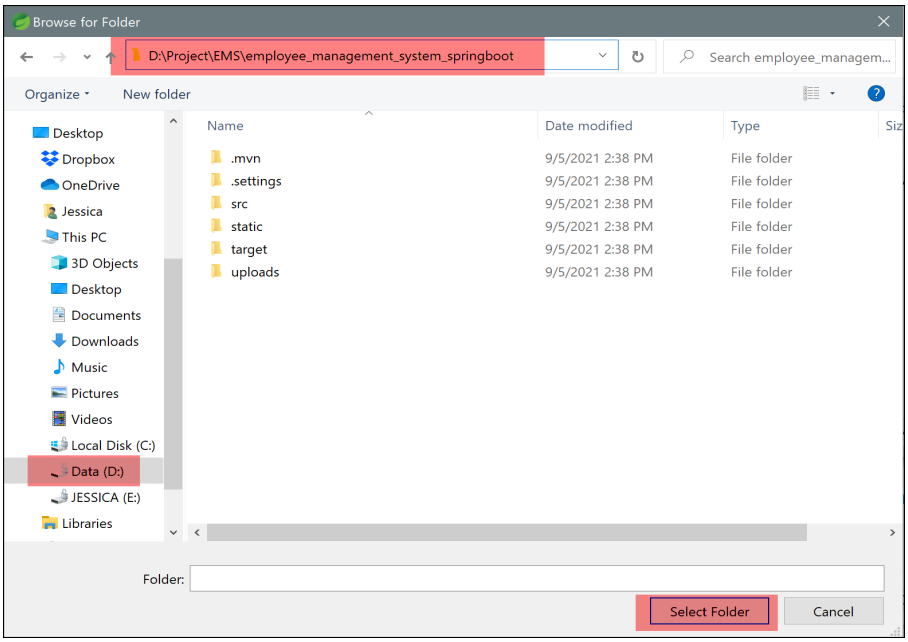


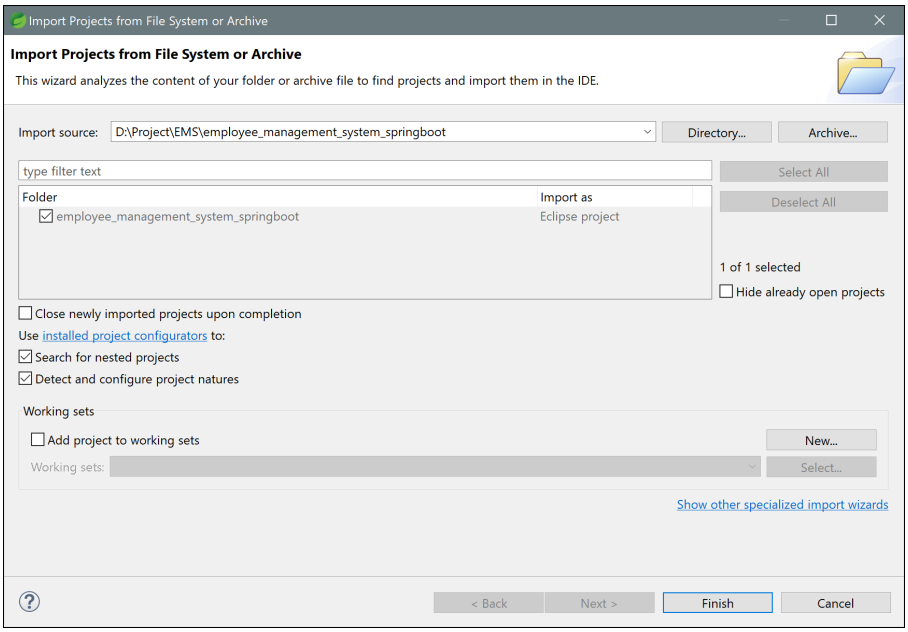


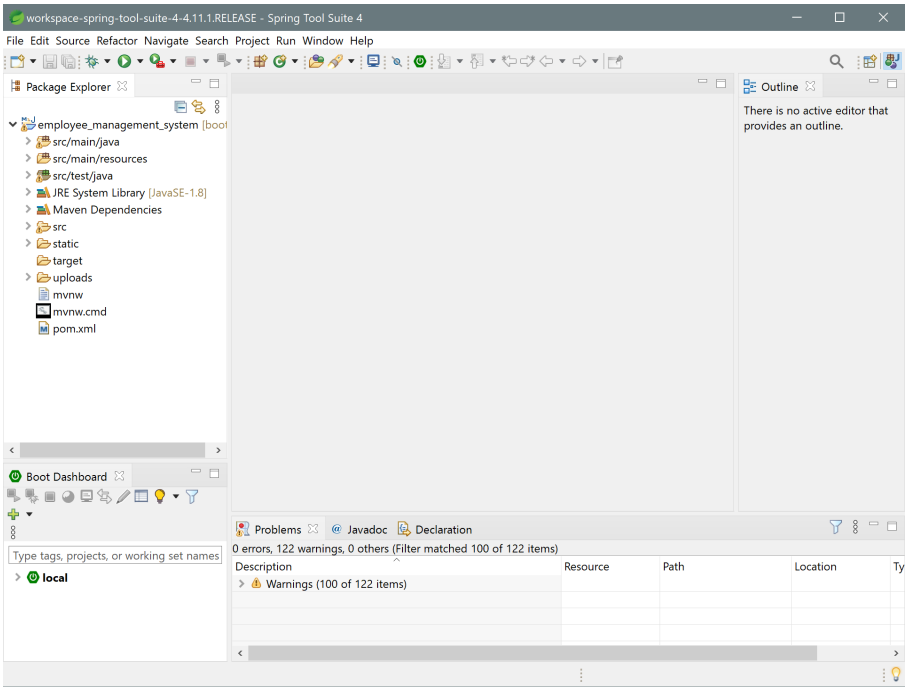


iv) Step 4. Click File





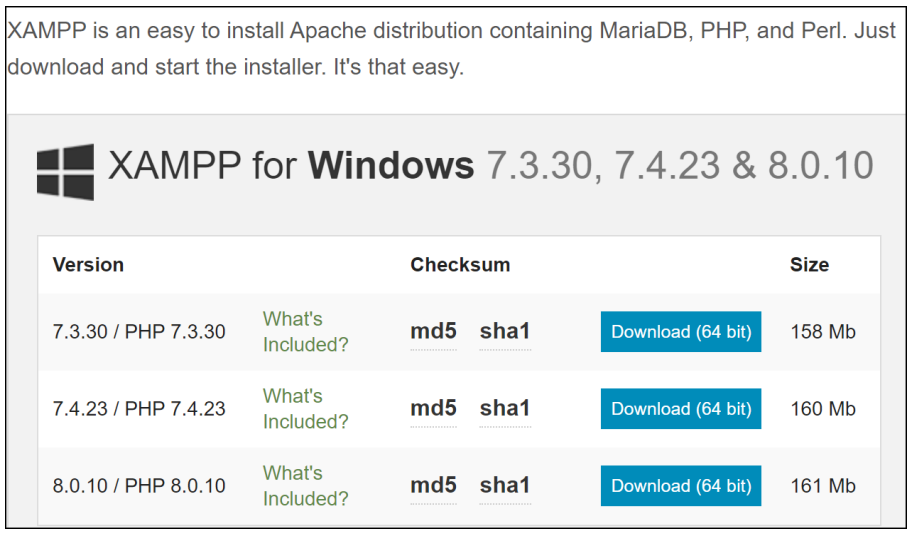




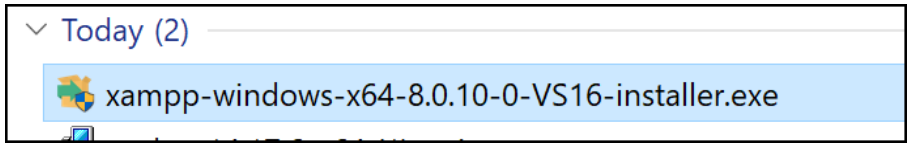
Complete All Steps to Install Spring Tools. Move To next section

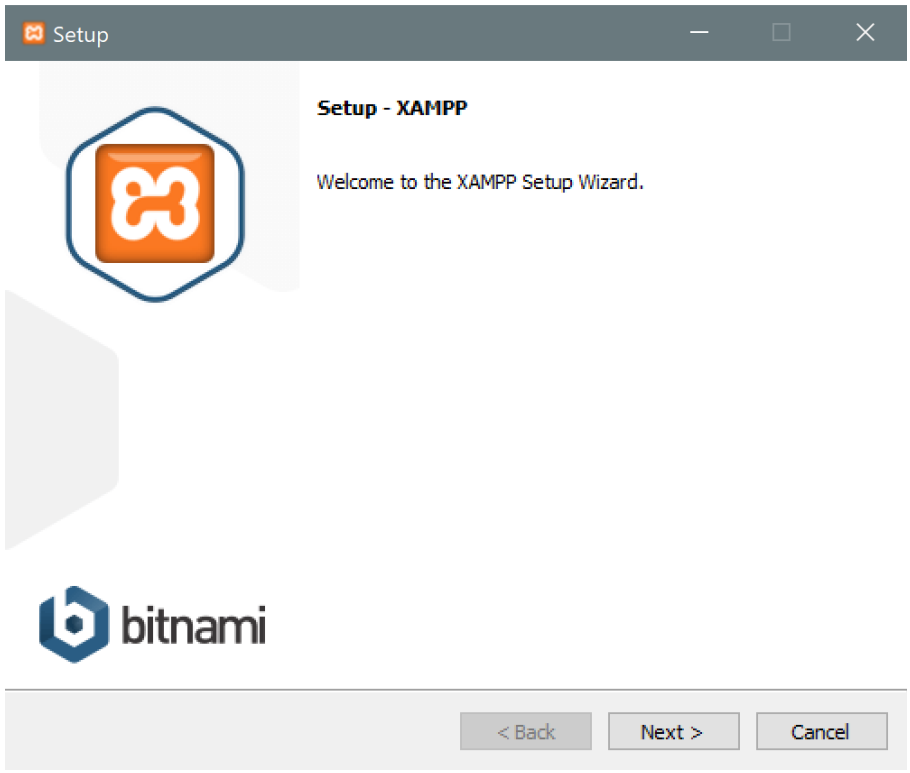
e) INSTALL XAMPP

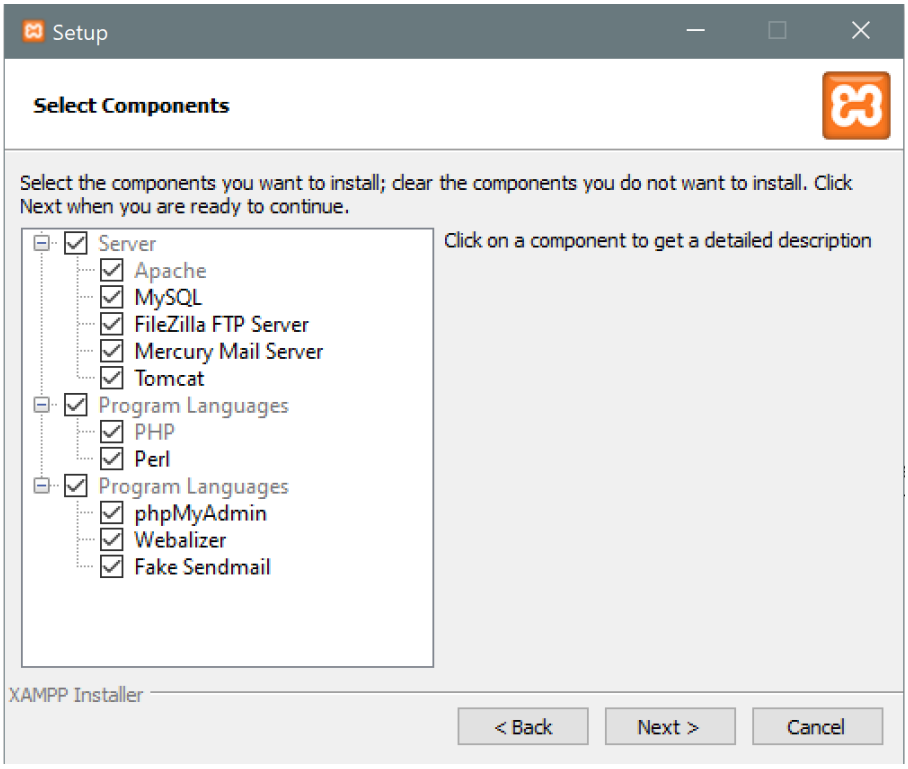
i) Step 1. Go to https://www.apachefriends.org/download.html and download the latest version

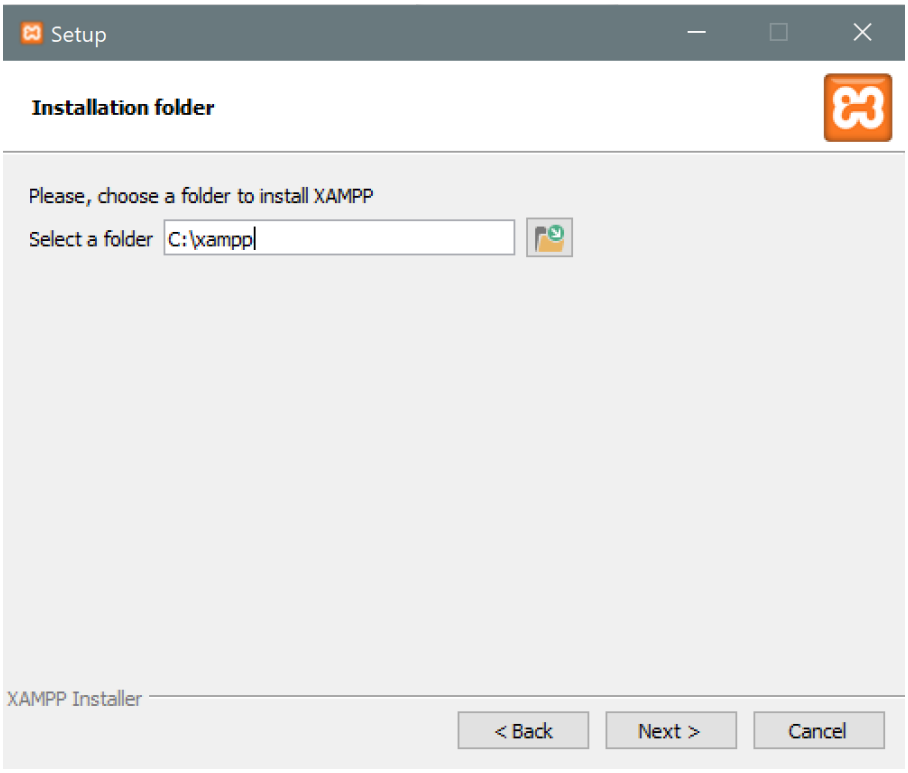


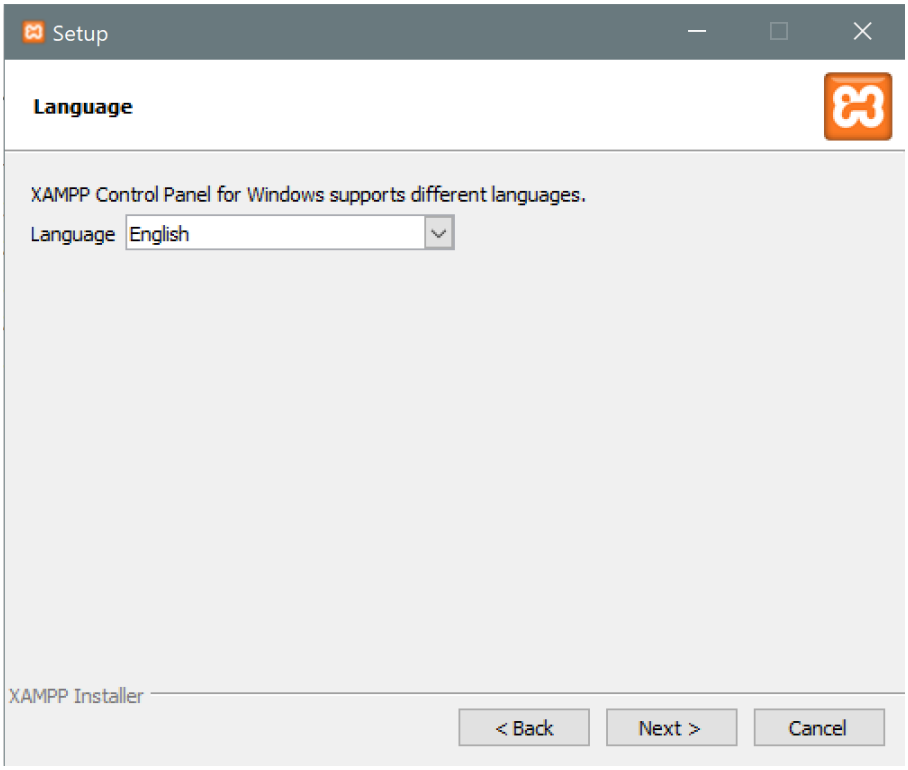
ii) Step 2. Install XAMPP by clicking **"xampp-windows-x64-8.0.10-0-VS16-installer" file**

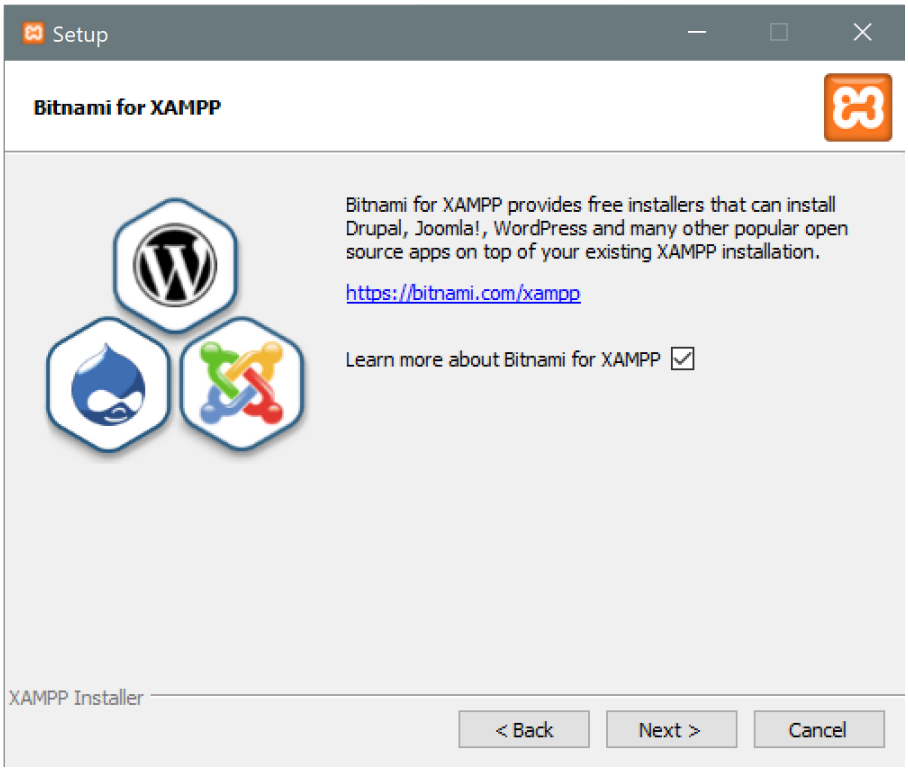


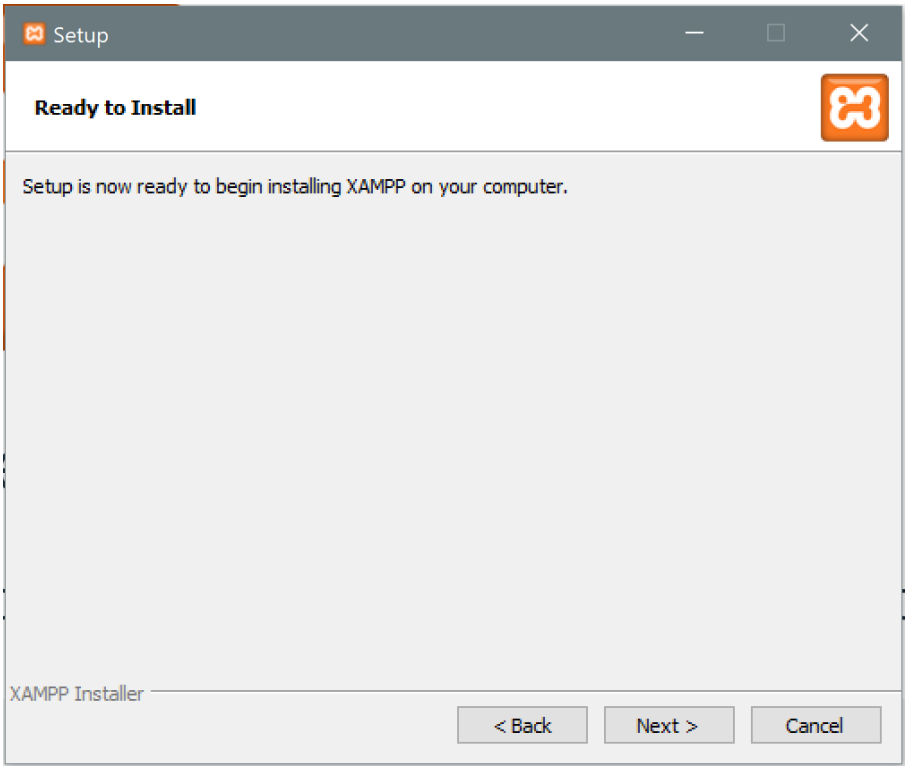


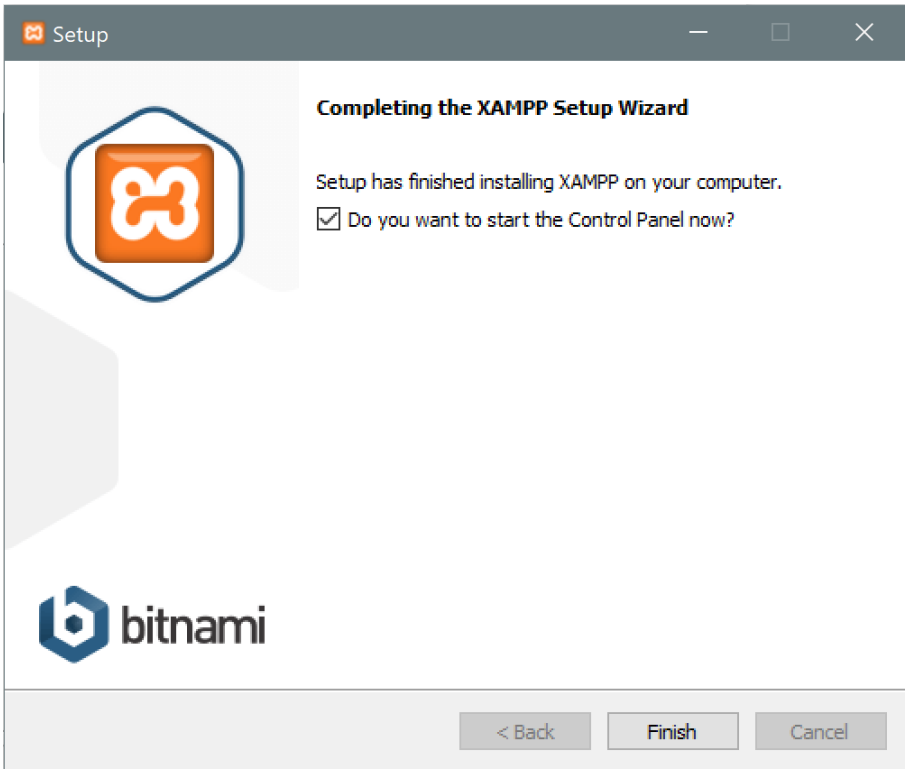

Setup
Select Components
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Server
Apache
MySQL
FileZilla FTP Server
Mercury Mail Server
Tomcat
Program Languages
PHP
Perl
Program Languages
phpMyAdmin
Webalizer
Fake Sendmail
Click on a component to get a detailed description
XAMPP Installer
< Back
Next >
Cancel


Setup
Installation folder
Please, choose a folder to install XAMPP
Select a folder
C:\xampp
XAMPP Installer
< Back
Next >
Cancel


Setup
Language
XAMPP Control Panel for Windows supports different languages.
Language English
XAMPP Installer
< Back
Next >
Cancel


Setup
Bitnami for XAMPP
Bitnami for XAMPP provides free installers that can install Drupal, Joomla!, WordPress and many other popular open source apps on top of your existing XAMPP installation.
https://bitnami.com/xampp
Learn more about Bitnami for XAMPP
XAMPP Installer
< Back
Next >
Cancel

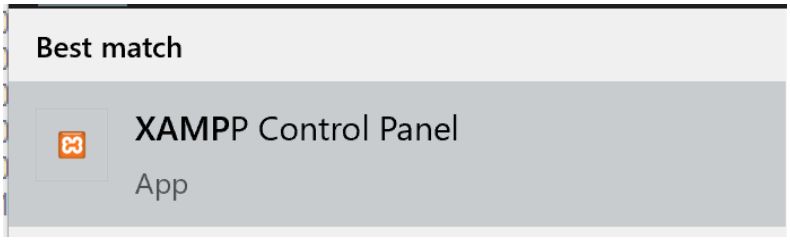

Setup
Ready to Install
Setup is now ready to begin installing XAMPP on your computer.
XAMPP Installer
< Back
Next >
Cancel

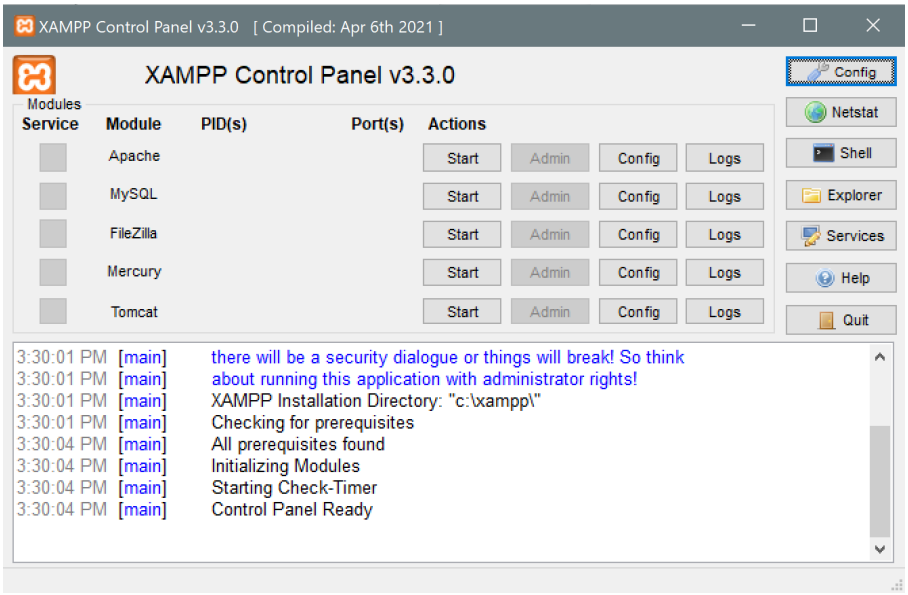

Setup
Completing the XAMPP Setup Wizard
Setup has finished installing XAMPP on your computer.
Do you want to start the Control Panel now?
bitnami
< Back
Finish
Cancel

3) RUN PROJECT

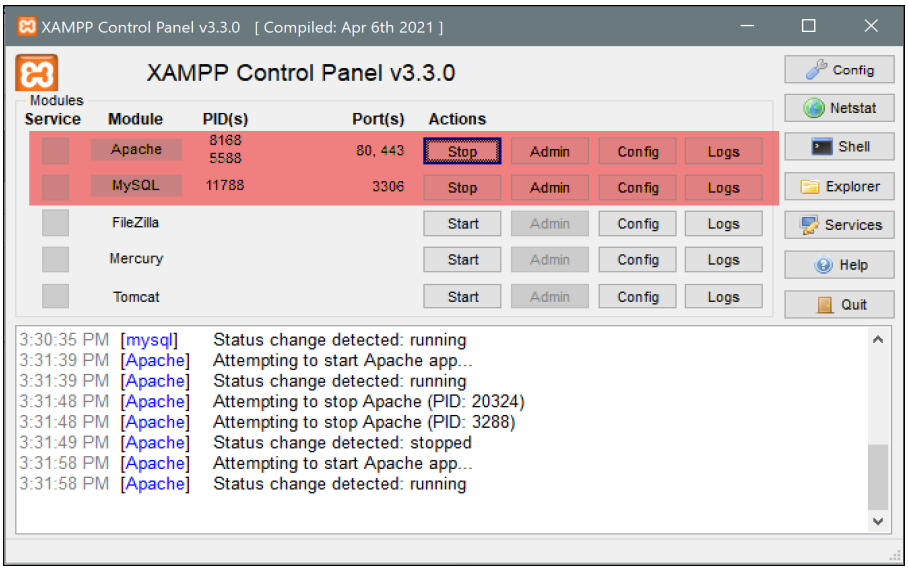
a) Run XAMPP and Start MySQL Server

i) Step 1. Search "XAMPP Control Panel" from menu and open this application



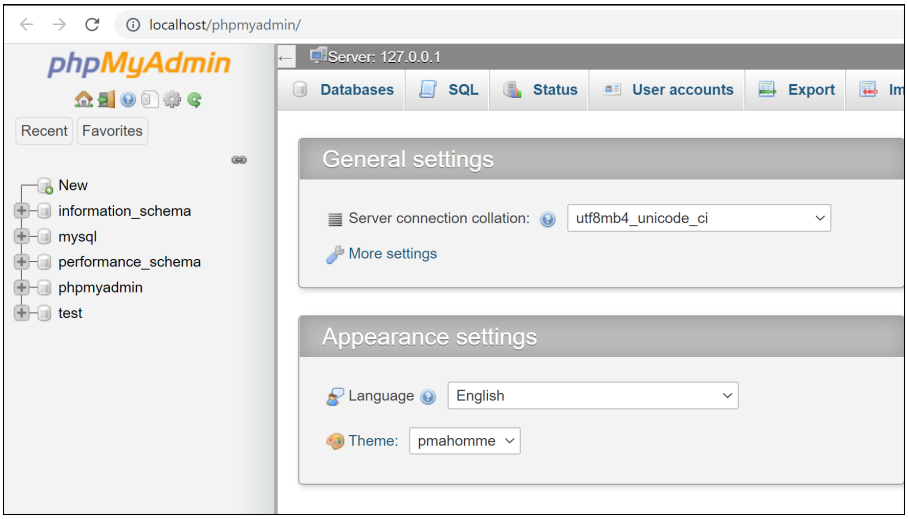


ii) Step 2. After open XAMPP Control Panel, click on "Start" button on Apache and MySQL



iii) Step 3. Click on "Admin" button of MySQL to access MySQL Admin PHP

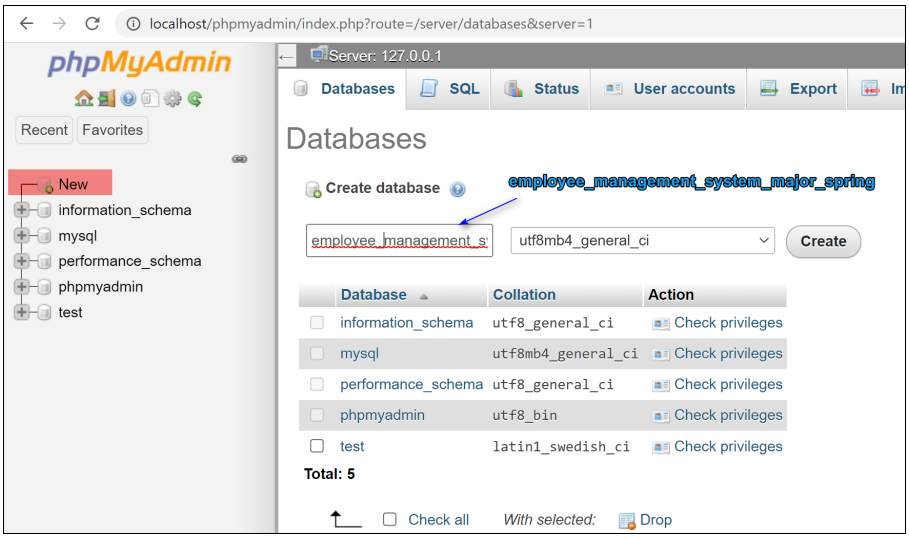
page



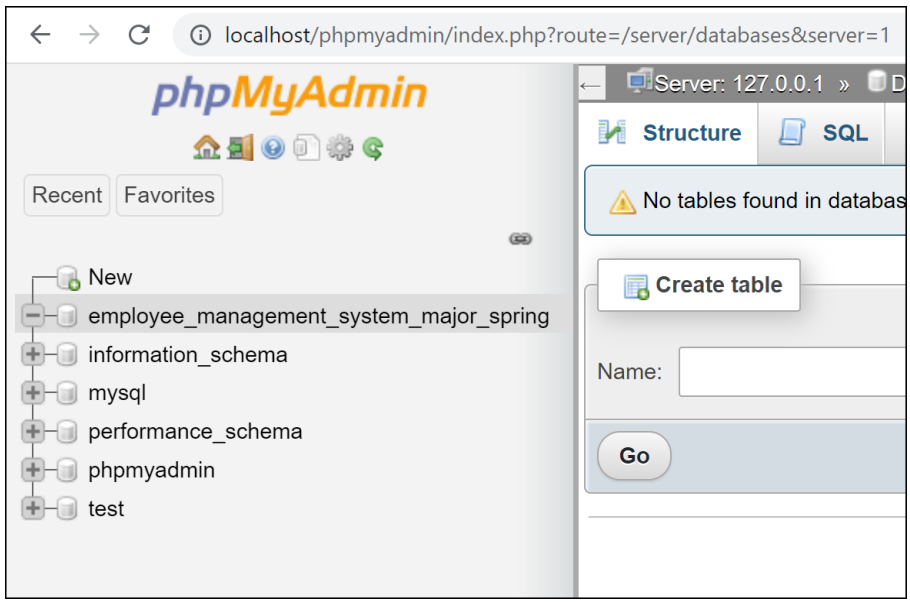
iv) **Step 4.** Click on **New** to create new database

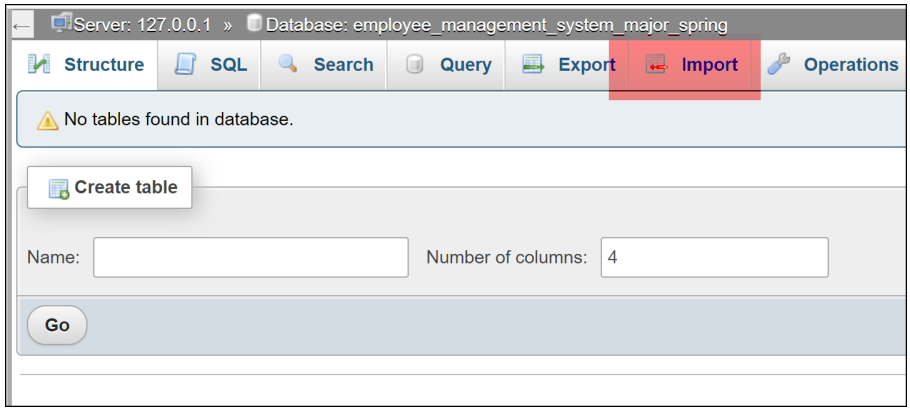
(1) Database Name: ***employee_management_system_major_spring***

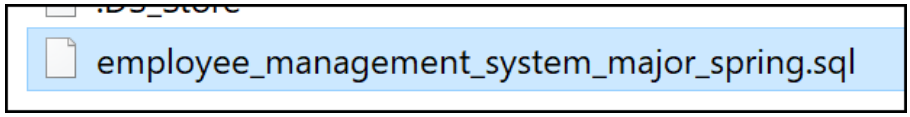
(2) Click on "Create" button

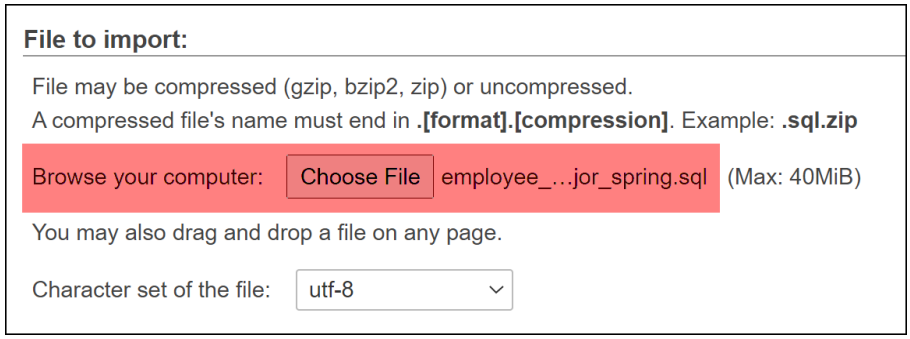


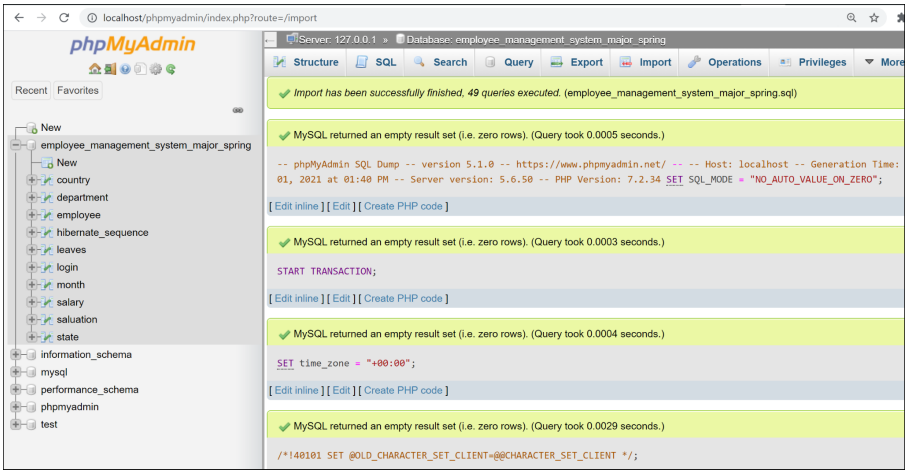
v) **Step 5.** Click on **Import** button > **Choose File:** select ***"employee_management_system_major_spring.sql"*** to import to this database











After importing completely, the tables of database are displayed as above screenshot

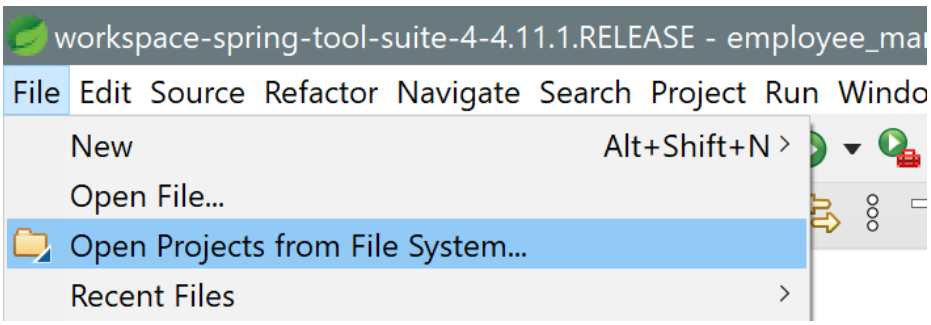
b) Open Spring Suite Tools and Boot App

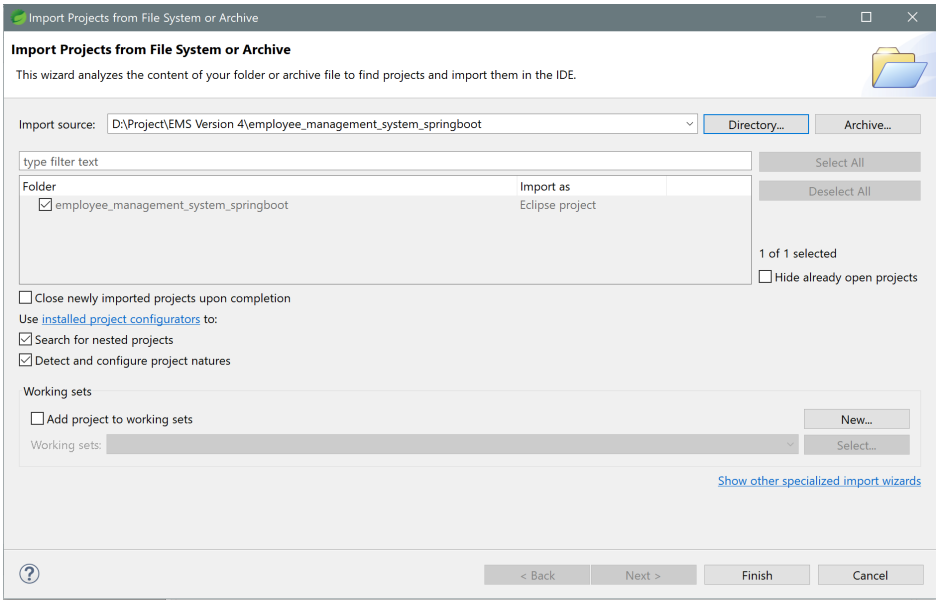
c) Open Spring Suite Tools and Boot App

i) Step 1. Open Spring Suite Tools > File > Open Projects from File System

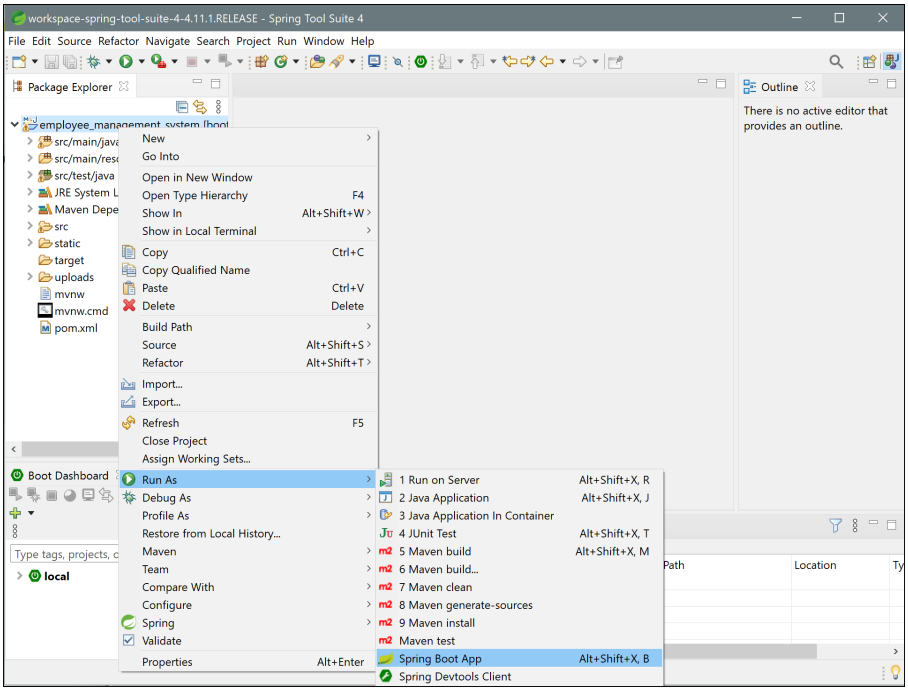
(1) Select **"employee_management_system_springboot"** folder

(2) Click on Finish to import this project

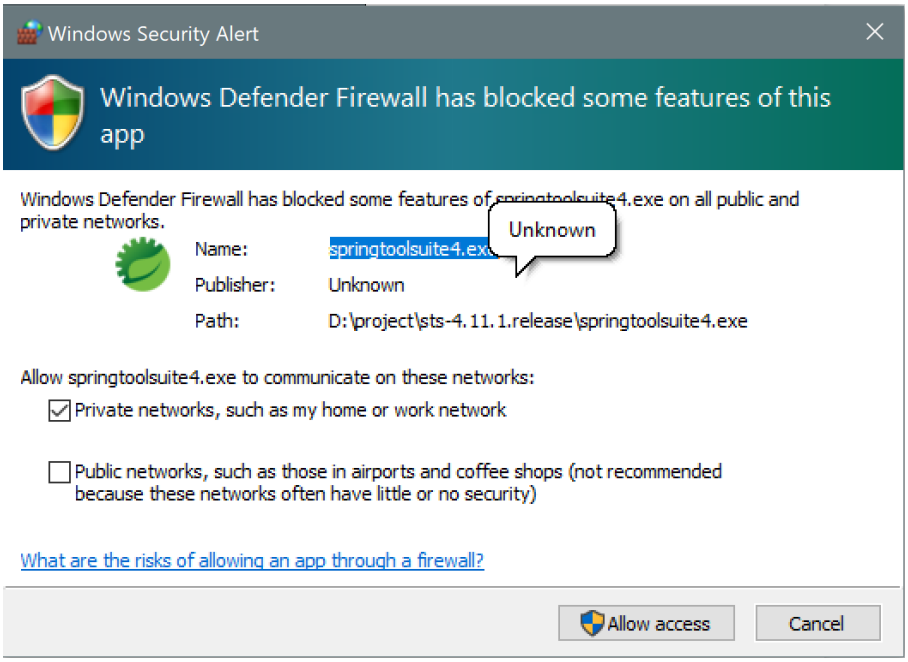


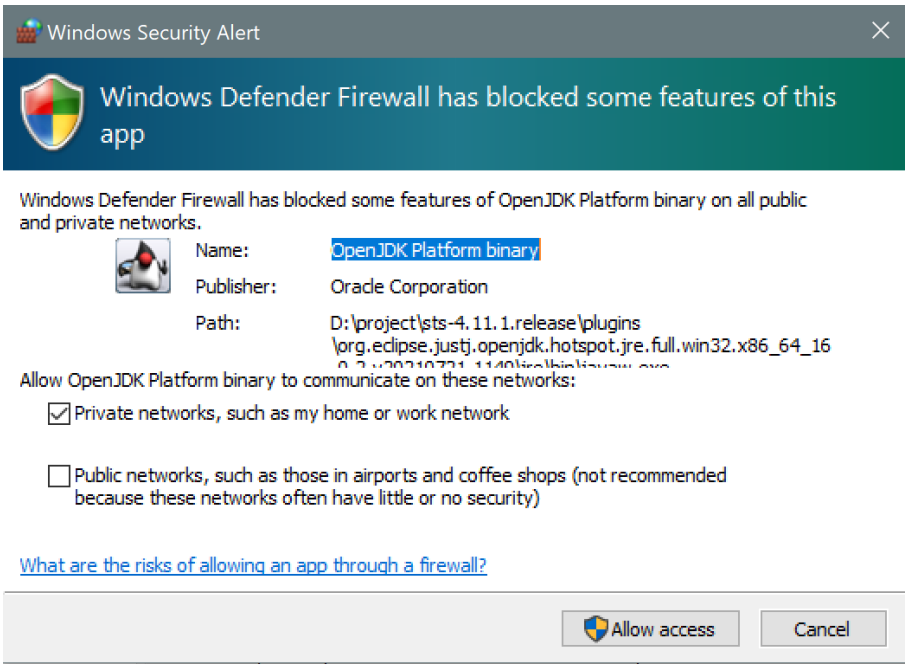


ii) **Step 2.** Right click on **"employee_management_system"** at the left panel > Select Run As > Spring Boot App

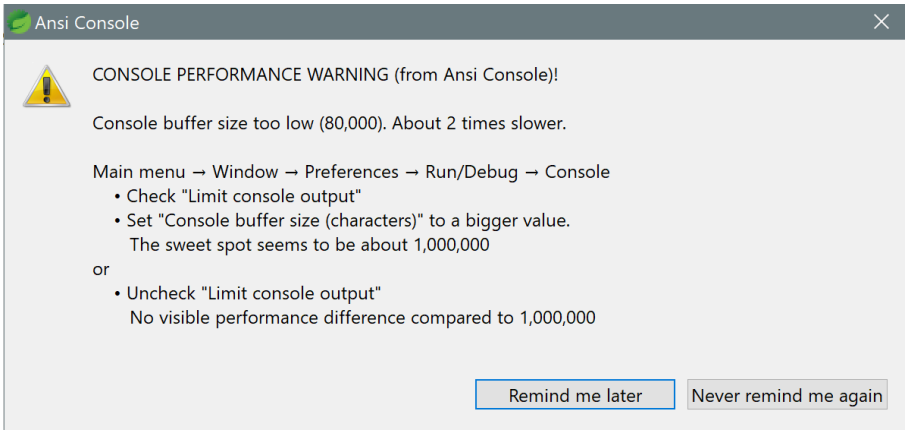


If we start this project for the first time, the application will ask Firewall permission. Please click Allow Access





Click on "Never remind me again" if you got "Console Performance Warning" below message



Then waiting a few seconds, when server is running successfully, you will see console screenshot as below:

```
main] org.hibernate.Version                    : HHH000412: Hibernate Core {5.3.10.Final}
main] org.hibernate.cfg.Environment            : HHH000206: hibernate.properties not found
main] o.hibernate.annotations.common.Version   : HCANN000001: Hibernate Commons Annotations {5.0.4.
main] org.hibernate.dialect.Dialect            : HHH000400: Using dialect: org.hibernate.dialect.My
main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persister
main] o.s.s.concurrent.ThreadPoolTaskExecutor  : Initializing ExecutorService 'applicationTaskExecu
main] aWebConfiguration$JpaWebMvcConfiguration : spring.jpa.open-in-view is enabled by default. The
main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 8080 (http) with contex
main] c.p.e.Application                        : Started Application in 4.109 seconds (JVM running
```

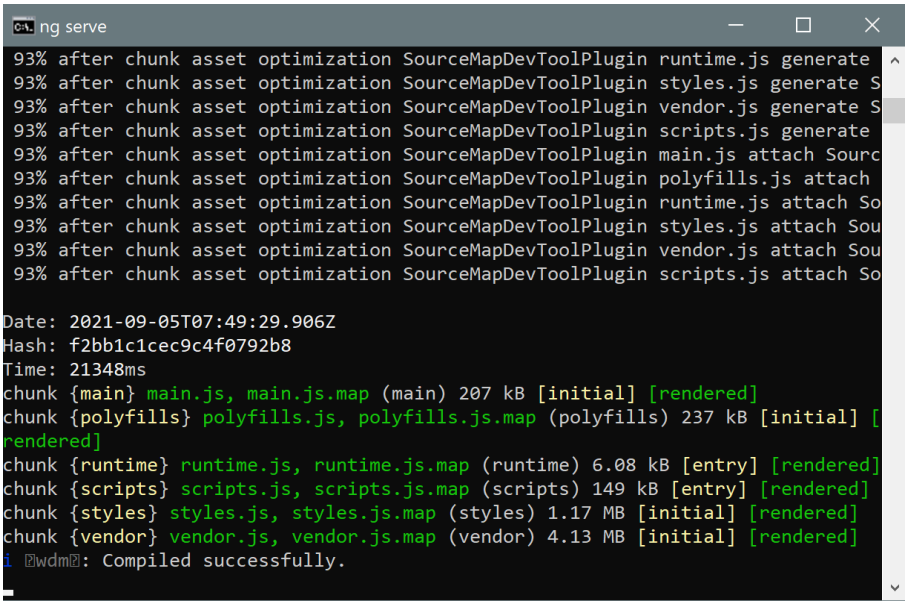
Application is Started Successfully

d) Run Angular Server

i) Open **CMD** and navigate to Angular Folder of project ***"employee_management_system_angular"***

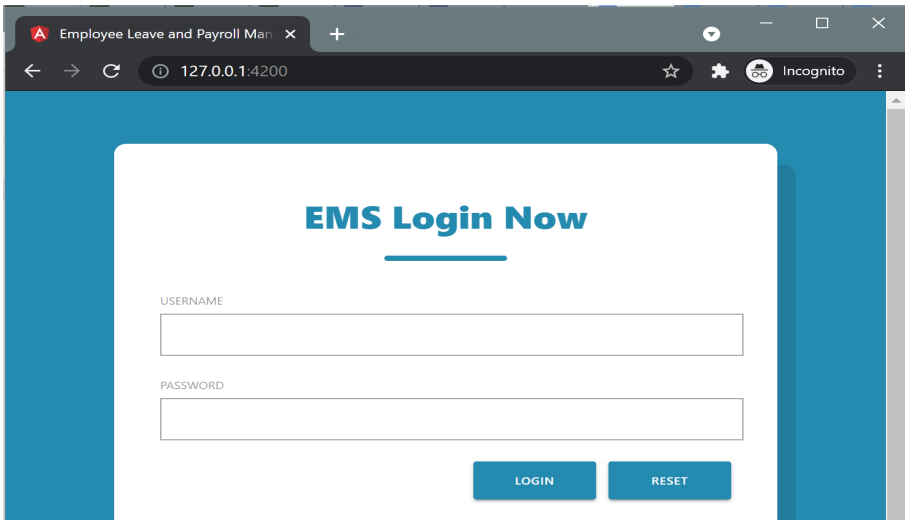
ii) *type and run* ***"ng serve"***

```
D:\Project\EMS\employee_management_system_angular>ng serve
```



The screenshot shows “Compiled Successfully”

iii) Open browser and go to http://127.0.0.1:4200/



The Login Page is displayed when accessing http://127.0.0.1:4200/

Summary: We completed setup and run web-based on a local machine. We can use the provided account to start to test this web-based.

- **Admin Account:** admin / test
- **Employee Account:** employee / test

--- DONE ---