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STEP 1: Software download and installation

1. Download and install nodejs for your OS:
<https://nodejs.org/en/download/>
2. Check if node installed by opening a command prompt and type in :

```
node -v  
npm -v
```

Versions may vary

```
(base) Manishs-MacBook-Pro:~ Shalini$ node -v  
v17.5.0  
(base) Manishs-MacBook-Pro:~ Shalini$ npm -v  
8.6.0
```

3. Download and install VSCode for your OS :
<https://code.visualstudio.com/download>
4. Next install angular using below command:
`npm i @angular/cli`
5. Create a folder angularws on your desktop

STEP 2: Create angular project

1. Open VSCode and click on File -> Open Folder -> Choose angularws and click Open
2. To create angular project execute below command from within the **angularws** folder
`ng new angulardemo --no-standalone`

See the screenshot for your reference to select the options on the integrated terminal

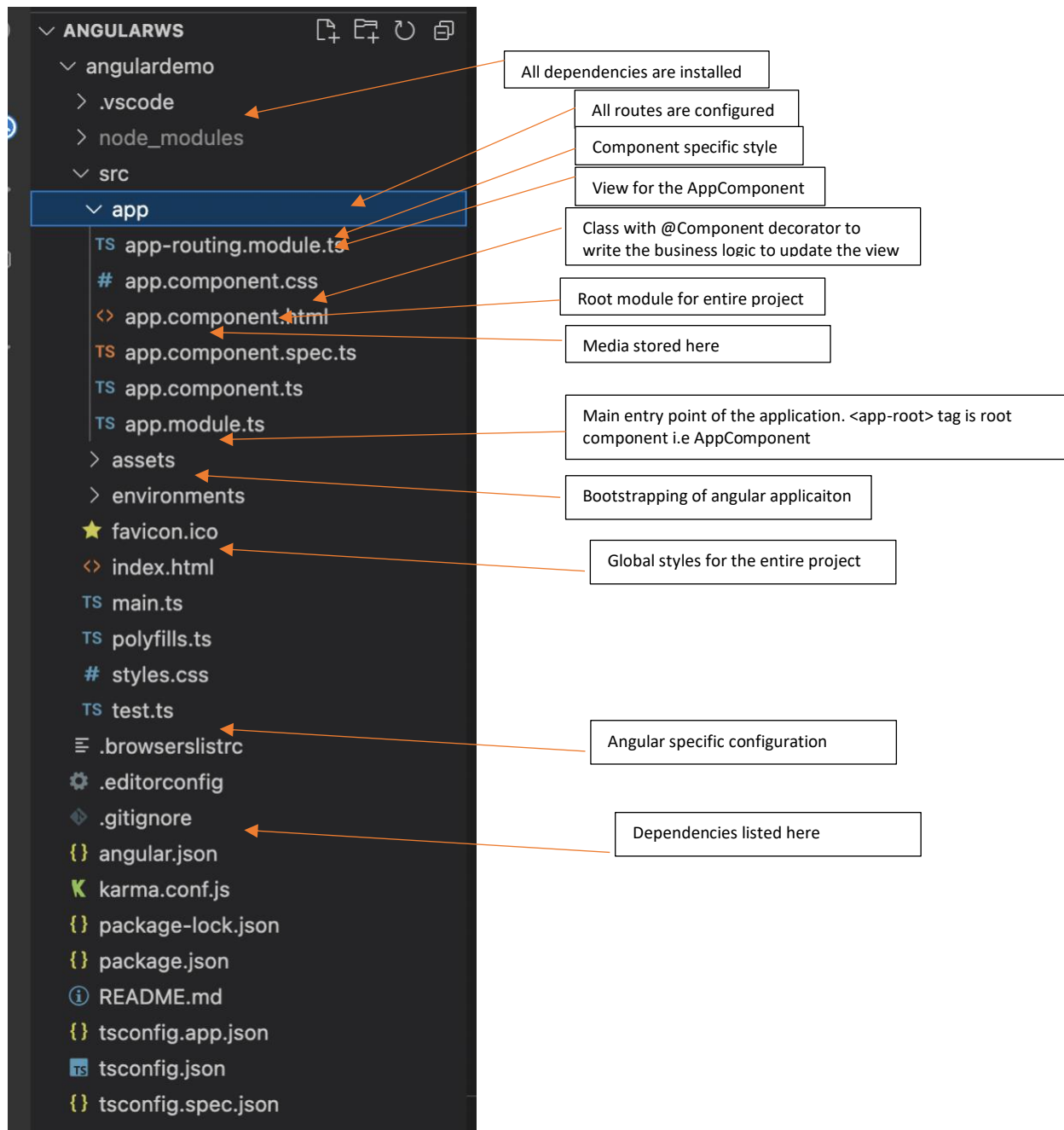
```
Manishs-MacBook-Pro:ng17 Shalini$ ng new angulardemo --no-standalone  
Node.js version v23.1.0 detected.  
Odd numbered Node.js versions will not enter LTS status and should not be used for production. For more information, please see https://nodejs.org/en/about/previous-releases/.  
? Which stylesheet format would you like to use? CSS [ https://developer.mozilla.org/docs/Web/CSS ]  
? Do you want to enable Server-Side Rendering (SSR) and Static Site Generation (SSG/Prerendering)? no  
CREATE angulardemo/README.md (1073 bytes)  
CREATE angulardemo/.editorconfig (314 bytes)  
CREATE angulardemo/.gitignore (587 bytes)  
CREATE angulardemo/angular.json (2863 bytes)  
CREATE angulardemo/package.json (1045 bytes)  
CREATE angulardemo/tsconfig.json (1012 bytes)  
CREATE angulardemo/tsconfig.app.json (424 bytes)  
CREATE angulardemo/tsconfig.spec.json (434 bytes)  
CREATE angulardemo/.vscode/extensions.json (130 bytes)  
CREATE angulardemo/.vscode/launch.json (470 bytes)  
CREATE angulardemo/.vscode/tasks.json (938 bytes)  
CREATE angulardemo/src/main.ts (248 bytes)  
CREATE angulardemo/src/index.html (297 bytes)  
CREATE angulardemo/src/styles.css (80 bytes)  
CREATE angulardemo/src/app/app-routing.module.ts (245 bytes)  
CREATE angulardemo/src/app/app.module.ts (393 bytes)  
CREATE angulardemo/src/app/app.component.css (0 bytes)  
CREATE angulardemo/src/app/app.component.html (19903 bytes)  
CREATE angulardemo/src/app/app.component.spec.ts (1058 bytes)  
CREATE angulardemo/src/app/app.component.ts (212 bytes)  
CREATE angulardemo/public/favicon.ico (15086 bytes)  
Installing packages (npm)...
```

Just hit enter for the default CSS styles and no for SSR and SSG

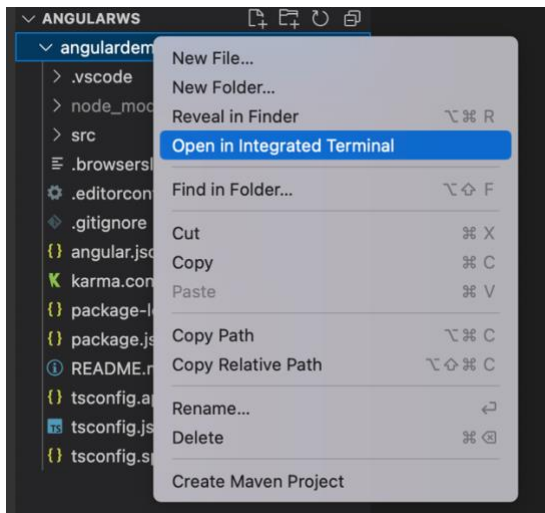
3. After successful installation of packages , terminal should show below output:

```
CREATE angulardemo/src/app/app.component.ts (215 bytes)  
✓ Packages installed successfully.  
Directory is already under version control. Skipping initialization of git.  
You have new mail in /var/mail/Shalini  
(base) Manishs-MacBook-Pro:angularws Shalini$
```

4. Once the project is created, folder should look as follows :

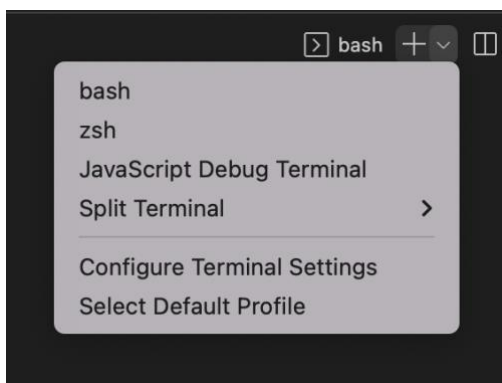


5. To start the server and build the angular application open terminal in VsCode. On the VScode, highlight project, right click and select Open in Integrated Terminal or command prompt as shown below



- The terminal will be opened in the VsCode.

[WINDOWS USERS PLEASE SELECT CMD FROM THE DROPDOWN OF TERMINAL ON THE RIGHT AS SHOWN BELOW]. INSTEAD OF zsh, windows will have command prompt



- Once on the terminal and the path should be angulardemo [your project folder], execute below command

```
ng serve
```

```
(base) Manishs-MacBook-Pro:angulardemo Shalinis no
Node.js version v17.5.0 detected.
Odd numbered Node.js versions will not enter LTS st
n, please see https://nodejs.org/en/about/releases/
? Would you like to share pseudonymous usage data about this project with the Angular Team
at Google under Google's Privacy Policy at https://policies.google.com/privacy. For more
details and how to change this setting, see https://angular.io/analytics. No
Global setting: enabled
Local setting: disabled
Effective status: disabled
✓ Browser application bundle generation complete.

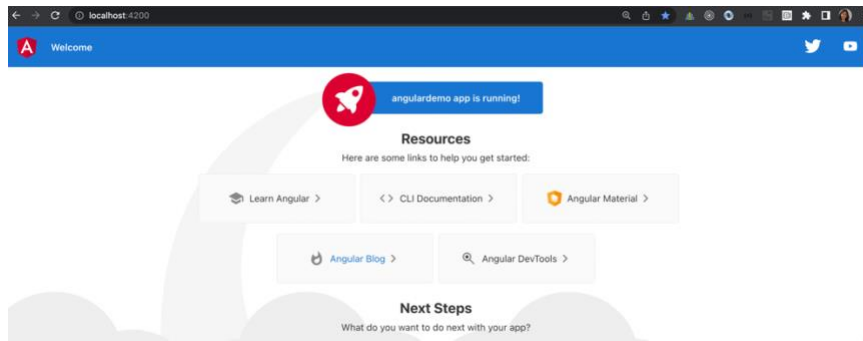
Initial Chunk Files | Names | Raw Size
vendor.js            | vendor | 2.10 MB
polyfills.js         | polyfills | 318.01 kB
styles.css, styles.js | styles | 210.09 kB
main.js              | main | 49.85 kB
runtime.js           | runtime | 6.52 kB
| Initial Total | 2.67 MB

Build at: 2022-09-11T13:05:26.442Z - Hash: 1d7c0f8ed9b74715 - Time: 4643ms
** Angular Live Development Server is listening on localhost:4200, open your browser on http://localhost:4200/ **
✓ Compiled successfully.
```

Make sure path is set till angulardemo

Angular application is running on this url

- Open browser of your choice and type in <http://localhost:4200> in the address bar. Output should be as seen below:



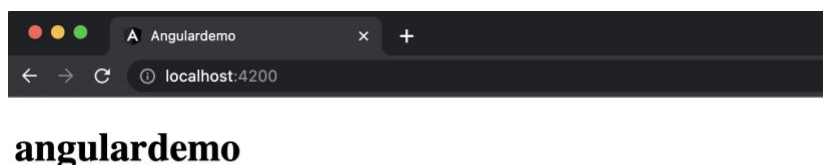
- Add bootstrap css and js libraries in index.html file

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOMmLASjC" crossorigin="anonymous">
```

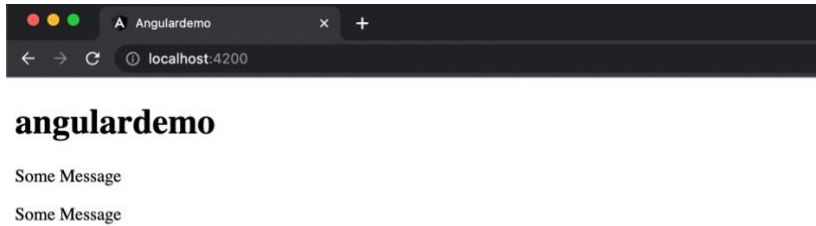
```
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js" integrity="sha384-MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNSfAP+JcXn/tWtIaxVXM" crossorigin="anonymous"></script>
```

STEP 3: Understand angular syntax:

- Delete everything in app.component.html file and add the following:
`<h1>{{title}}</h1>`
Should see following output:



- Create a property message in app.component.ts as follows:
`message:string = 'Some Message'`
- Bind this property in app.component.html as follows:
`<p innerText={{message}}></p>`
`<p [innerText]=message></p>`
Should see output as follows:



4. 1-way data binding:
 - a. String interpolation :{{ }} will consider all types as string only
 - b. Square bracket syntax : [] retains the type of a variable
`<button [disabled]="isEnabled"
 (click)="clicked()"
 class="btn btn-primary">Click Me</button>`

Add following in app.component.ts
isEnabled:boolean = false;
clicked(){ }
5. Event binding: ()
6. 2-way data binding
 - a. Add FormsModule in imports[] of App.module.ts file. **[DO NOT MISS]**
 - b. Use [(ngModel)] i.e banana in a box syntax on the form elements
`<input type="checkbox" [(ngModel)]=" isEnabled" />`

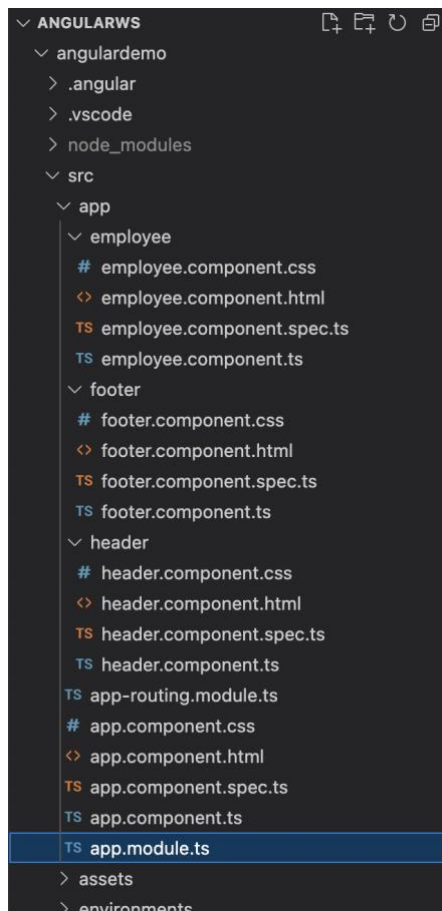
STEP 4: Add components

1. Create Header, Footer and Employee component using the below command from within the angulardemo folder:
ng g c header
ng g c footer
ng g c employee

```
(base) Manishs-MacBook-Pro:angulardemo Shalini$ ng g c header
Node.js version v17.5.0 detected.
Odd numbered Node.js versions will not enter LTS status and should not be used for production. For
more information, please see https://nodejs.org/en/about/releases/.
CREATE src/app/header/header.component.css (0 bytes)
CREATE src/app/header/header.component.html (21 bytes)
CREATE src/app/header/header.component.spec.ts (599 bytes)
CREATE src/app/header/header.component.ts (275 bytes)
UPDATE src/app/app.module.ts (534 bytes)
(base) Manishs-MacBook-Pro:angulardemo Shalini$ ng g c footer
Node.js version v17.5.0 detected.
Odd numbered Node.js versions will not enter LTS status and should not be used for production. For
more information, please see https://nodejs.org/en/about/releases/.
CREATE src/app/footer/footer.component.css (0 bytes)
CREATE src/app/footer/footer.component.html (21 bytes)
CREATE src/app/footer/footer.component.spec.ts (599 bytes)
CREATE src/app/footer/footer.component.ts (275 bytes)
UPDATE src/app/app.module.ts (694 bytes)
(base) Manishs-MacBook-Pro:angulardemo Shalini$ ng g c employee
Node.js version v17.5.0 detected.
Odd numbered Node.js versions will not enter LTS status and should not be used for production. For
more information, please see https://nodejs.org/en/about/releases/.
CREATE src/app/employee/employee.component.css (0 bytes)
CREATE src/app/employee/employee.component.html (23 bytes)
CREATE src/app/employee/employee.component.spec.ts (613 bytes)
CREATE src/app/employee/employee.component.ts (283 bytes)
UPDATE src/app/app.module.ts (706 bytes)
You have new mail in /var/mail/Shalini
```

Apart from the folders created, take a look at declarations[] of app.module.ts file
declarations: [
 AppComponent,
 HeaderComponent,
 FooterComponent,
 EmployeeComponent
]

2. The folder structure looks as follows:



3. To add the components in the page and view the corresponding html, copy the selector value from the respective component.ts file and paste it as a tag in the app.component.html file

```
<app-header></app-header>
<app-employee></app-employee>
<app-footer></app-footer>
```

Should get following output with html content of respective component displayed on the page:



angulardemo

Some Message

Some Message

header works!

employee works!

footer works!

STEP 5: Angular installation

1. To install latest angular-cli globally on your system execute below command:
`npm i -g @angular/cli`
2. To install specific angular-cli version locally for your project, execute below command from within your folder.

`npm i @angular/cli@<version number>`
`npx -p @angular/cli ng new ngdemo`
3. You can get version list from below link
<https://www.npmjs.com/package/@angular/cli?activeTab=versions>
4. To uninstall angular globally
`npm uninstall -g @angular/cli`
`npm cache clean --force`
5. `nvm use <node version>`
`nvm use 23.1.0`
6. if ng command not found then link as follows:
`npm link @angular/cli`
7. On Windows client computers, the execution of PowerShell scripts is disabled by default. To allow the execution of PowerShell scripts, which is needed for npm global binaries, you must set the following [execution policy](#):
8. `Set-ExecutionPolicy -Scope CurrentUser -ExecutionPolicy RemoteSigned`
Carefully read the message displayed after executing the command and follow the instructions. Make sure you understand the implications of setting an execution policy.
9. <https://angular.dev/tutorials>
10. <https://www.freecodecamp.org/news/angular-ngclass-example/>
11. <https://blog.angular-university.io/tag/angular-core/>