

## PROGRAM-9

Aim: **Create a simple angular application using Angular CLI and TypeScript**

### ANGULAR:

**Angular** is a front-end framework which is used to create web applications. It uses typescript by default for creating logics and methods for a class but the browser doesn't know typescript. Here webpack comes in picture, webpack is used to compile these typescript files to JavaScript. In addition, there are so many configuration files you will need to run an angular project on your computer.

### ANGULAR CLI:

**Angular CLI** is a tool that does all these things for you in some simple commands. Angular CLI uses webpack behind to do all this process.

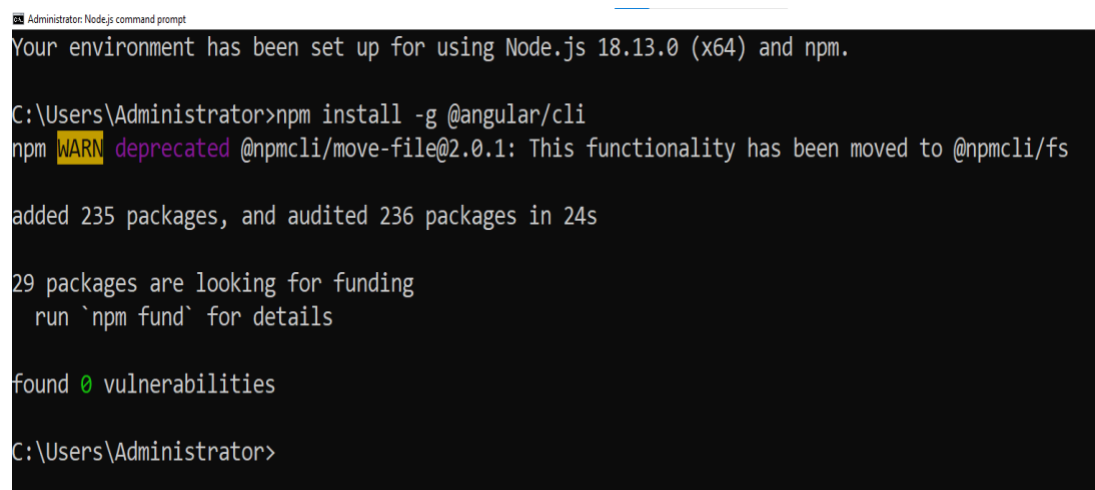
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### Installation of Angular CLI:

You can use the Angular CLI to create projects, generate application and library code, and perform a variety of ongoing development tasks such as testing, bundling, and deployment.

To install the Angular CLI, open a terminal window and run the following command:

**npm install -g @angular/cli**

A screenshot of a Windows command prompt window titled "Administrator: Node.js command prompt". The window shows the output of the command "npm install -g @angular/cli". The output includes: "Your environment has been set up for using Node.js 18.13.0 (x64) and npm.", "C:\Users\Administrator>npm install -g @angular/cli", "npm WARN deprecated @npmcli/move-file@2.0.1: This functionality has been moved to @npmcli/fs", "added 235 packages, and audited 236 packages in 24s", "29 packages are looking for funding", "run 'npm fund' for details", "found 0 vulnerabilities", and "C:\Users\Administrator>".

```
Administrator: Node.js command prompt
Your environment has been set up for using Node.js 18.13.0 (x64) and npm.

C:\Users\Administrator>npm install -g @angular/cli
npm WARN deprecated @npmcli/move-file@2.0.1: This functionality has been moved to @npmcli/fs

added 235 packages, and audited 236 packages in 24s

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

found 0 vulnerabilities

C:\Users\Administrator>
```

---

### Create a workspace and initial application

You develop apps in the context of an Angular [workspace](#).

To create a new workspace and initial starter app:

1. Run the CLI command `ng new my-app` and provide the name `my-app`, as shown here:  
**ng new my-app**
2. The `ng new` command prompts you for information about features to include in the initial app. Accept the defaults by pressing the Enter or Return key.

The Angular CLI installs the necessary Angular npm packages and other dependencies. This can take a few minutes.

The CLI creates a new workspace and a simple Welcome app, ready to run.

```
C:\Users\Administrator>ng new my-app
? 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: disabled
Local setting: No local workspace configuration file.
Effective status: disabled
? Would you like to add Angular routing? No
? Which stylesheet format would you like to use? CSS
CREATE my-app/angular.json (2700 bytes)
CREATE my-app/package.json (1037 bytes)
CREATE my-app/README.md (1059 bytes)
CREATE my-app/tsconfig.json (901 bytes)
CREATE my-app/.editorconfig (274 bytes)
CREATE my-app/.gitignore (548 bytes)
CREATE my-app/tsconfig.app.json (263 bytes)
CREATE my-app/tsconfig.spec.json (273 bytes)
CREATE my-app/.vscode/extensions.json (130 bytes)
CREATE my-app/.vscode/launch.json (474 bytes)
CREATE my-app/.vscode/tasks.json (938 bytes)
CREATE my-app/src/favicon.ico (948 bytes)
```

```
Administrator: Windows PowerShell
CREATE my-app/src/favicon.ico (948 bytes)
CREATE my-app/src/index.html (291 bytes)
CREATE my-app/src/main.ts (214 bytes)
CREATE my-app/src/styles.css (80 bytes)
CREATE my-app/src/assets/.gitkeep (0 bytes)
CREATE my-app/src/app/app.module.ts (314 bytes)
CREATE my-app/src/app/app.component.html (23083 bytes)
CREATE my-app/src/app/app.component.spec.ts (956 bytes)
CREATE my-app/src/app/app.component.ts (210 bytes)
CREATE my-app/src/app/app.component.css (0 bytes)
✓ Packages installed successfully.
'git' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\Administrator>cd my-app

C:\Users\Administrator\my-app>ng serve --open
✓ Browser application bundle generation complete.

Initial Chunk Files | Names | Raw Size |
vendor.js           | vendor | 1.71 MB |
polyfills.js        | polyfills | 314.27 kB |
styles.css, styles.js | styles | 209.39 kB |
main.js             | main | 45.98 kB |
runtime.js          | runtime | 6.51 kB |
Initial Total | 2.27 MB
```

## Run the application:

The Angular CLI includes a server, for you to build and serve your app locally.

1. Navigate to the workspace folder, such as my-app.
2. Run the following command:

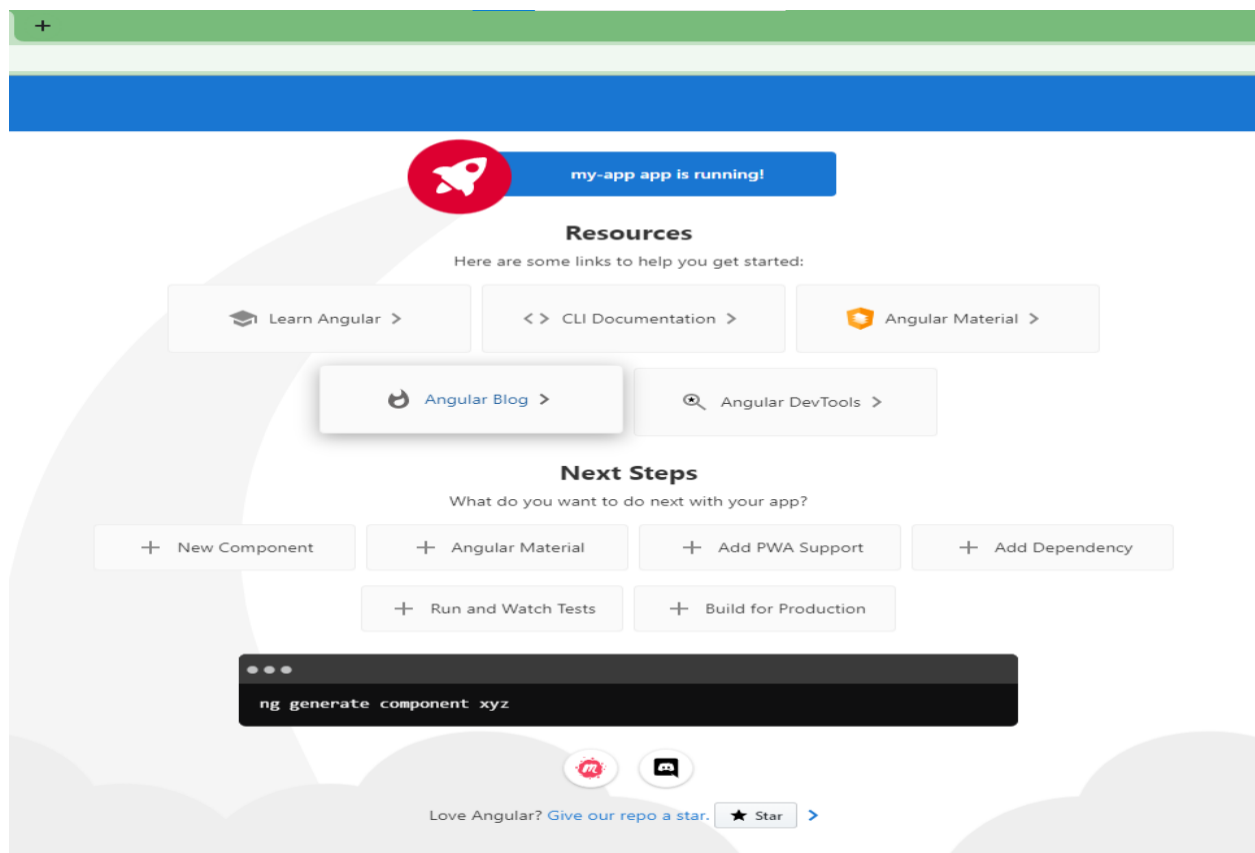
```
cd my-app
```

```
ng serve --open
```

The ng serve command launches the server, watches your files, and rebuilds the app as you make changes to those files.

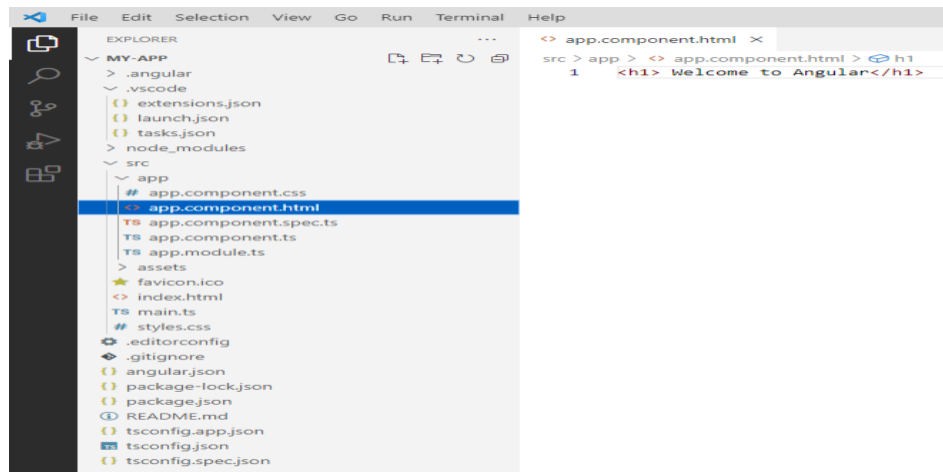
The --open (or just -o) option automatically opens your browser to <http://localhost:4200/>.

If your installation and setup was successful, you should see a page similar to the following.



Application using TypeScript and Angular CLI:

VS code → File → Open Folder → Select the Folder → my app → src → app → app.component.html



```
<h1> HELLO :) </h1>
```

Type `ng serve --open` in terminal

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\20481A05C2\my-app> ng serve --open
? Port 4200 is already in use.
Would you like to use a different port? Yes
✓ Browser application bundle generation complete.
```

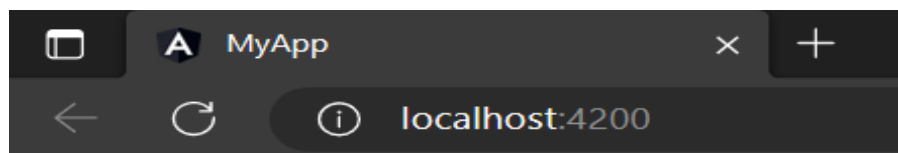
Initial Chunk Files	Names	Raw Size
vendor.js	vendor	1.71 MB
polyfills.js	polyfills	314.27 kB
styles.css, styles.js	styles	209.39 kB
runtime.js	runtime	6.51 kB
main.js	main	4.05 kB
Initial Total		2.23 MB

Build at: 2023-03-27T06:12:12.561Z - Hash: d9500e5c16536cf5 - Time: 3466ms

\*\* Angular Live Development Server is listening on localhost:56420, open your browser on http://localhost:56420/ \*\*

```
✓ Compiled successfully.
```

**OUTPUT:**



# HELLO :)

**Program No:10**

**Date:**

**Aim:** Create an angular application to work with components.

### **Component:**

A Component in angular is a isolated entity that enables reuse and maintainability of code. Component encapsulate the data, logic, and HTML for a view - means everything user sees on screen.

Components are the main building block for Angular applications. Each component consists of:

- An HTML template that declares what renders on the page
- A Typescript class that defines behaviour
- A CSS selector that defines how the component is used in a template
- Optionally, CSS styles applied to the template

### **Creating a component:**

The best way to create a component is with the Angular CLI. You can also create a component manually.

Creating a component using the Angular CLI

To create a component using the Angular CLI:

1. From a terminal window, navigate to the directory containing your application.
2. Run the `ng generate component <component-name>` command, where `<component-name>` is the name of your new component.
3. `ng g c <component-name>`

By default, this command creates the following:

- A directory named after the component
- A component file, `<component-name>.component.ts`
- A template file, `<component-name>.component.html`
- A CSS file, `<component-name>.component.css`
- A unit test specification file, `<component-name>.component.spec.ts`

Where `<component-name>` is the name of your component.

### **Creating a component manually:**

Although the Angular CLI is the best way to create an Angular component, you can also create a component manually. This section describes how to create the core component file within an existing Angular project.

To create a new component manually:

1. Navigate to your Angular project directory.
2. Create a new file, `<component-name>.component.ts`.
3. At the top of the file, add the following import statement.

```
import { Component } from '@angular/core';
```

After the import statement, add a `@Component` decorator.

```
@Component({  
  })
```

Choose a CSS selector for the component and define the HTML template that the component uses to display information. In most cases, this template is a separate HTML file.

```
@Component({
  selector: 'app-component-overview',
  templateUrl: './component-overview.component.html',
})
```

Every component requires a CSS *selector*. A selector instructs Angular to instantiate this component wherever it finds the corresponding tag in template HTML.

A template is a block of HTML that tells Angular how to render the component in your application. Define a template for your component in one of two ways: by referencing an external file, or directly within the component.

```
@Component({
  selector: 'app-component-overview',
  template: '<h1>Hello World!</h1>'
})
```

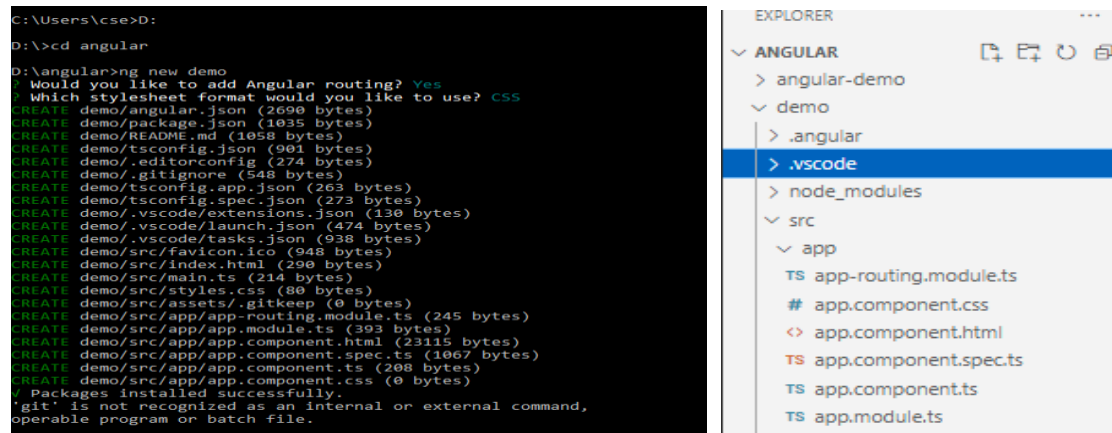
Select the styles for the component's template. In most cases, you define the styles for your component's template in a separate file.

```
@Component({
  selector: 'app-component-overview',
  templateUrl: './component-overview.component.html',
  styleUrls: ['./component-overview.component.css']
})
```

Add a class statement that includes the code for the component.

```
export class ComponentOverviewComponent {
  #code
}
```

**Program:**



```

PS D:\angular> cd demo
PS D:\angular\demo> ng serve
? 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. Yes

Thank you for sharing pseudonymous usage data. Should you change your mind, the following
command will disable this feature entirely:

  ng analytics disable

Global setting: enabled
Local setting: enabled
Effective status: enabled
✓ Browser application bundle generation complete.

Initial Chunk Files | Names | Raw Size
vendor.js           | vendor | 2.04 MB
polyfills.js        | polyfills | 314.26 kB
styles.css, styles.js | styles | 209.39 kB
runtime.js          | runtime | 6.51 kB
main.js             | main | 5.81 kB
                    | Initial Total | 2.56 MB

Build at: 2023-04-04T05:08:47.168Z - Hash: 588e3cf689e54c54 - Time: 37125ms

** Angular Live Development Server is listening on localhost:4200, open your browser on http://localhost:4200/ *

✓ Compiled successfully.

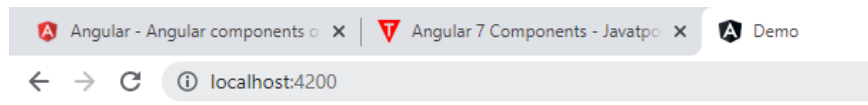
```

```

demo > src > app > <> app.component.html > p
1 <p>hello cse</p>

```

## Output:



hello cse