ONLINE TEST_APPLICATION DDOCUMENTATION

Mean_Phase2

@simplilearn

Link to github repository: **https://github.com/pipilika10/test**

PARAMITA

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Table of Contents

Abstract

In the Phase2 of Full Stack development course with simplilearn, a test application is developed to bring the learners in full view of recent type of application development with **node js, type script, ANGULAR/CLI, bootstrap using VSCode.**

A step by step learning is conducted to understand the basic steps.

1 Introduction

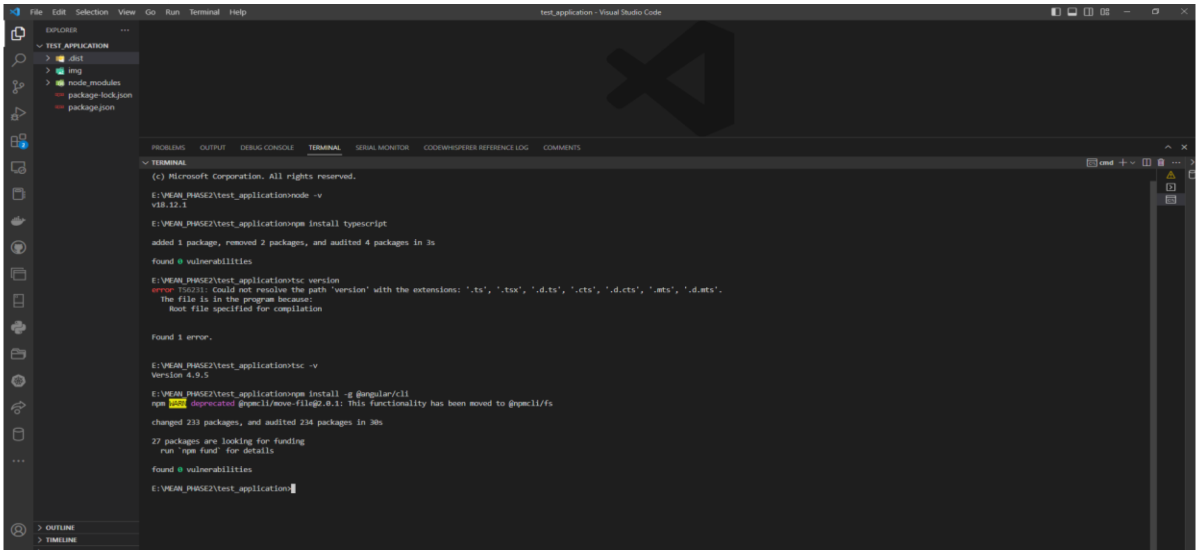
Application development with nodejs, typescript, angular/cli, and bootstrap was brought up in the MEAn Phase2 of the development process. The following steps are documented to understand the process better.

Software components used in developing the test_application:

- **Visual studio**
- **Github**
- **node**
- **angular**
- **typescript**
- **bootstrap**

2. The Guiding steps:

Node.js and type script is installed in VSCode from terminal


File Edit Selection View Go Run Terminal Help
test_application - Visual Studio Code
EXPLORER
TEST_APPLICATION
.dist
img
node_modules
package-lock.json
package.json
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL SERIAL MONITOR CODEWHISPERER REFERENCE LOG COMMENTS
TERMINAL
cmd

```
(c) Microsoft Corporation. All rights reserved.

E:\MEAN_PHASE2\test_application>node -v
v18.12.1

E:\MEAN_PHASE2\test_application>npm install typescript

added 1 package, removed 2 packages, and audited 4 packages in 3s

found 0 vulnerabilities

E:\MEAN_PHASE2\test_application>tsc version
error TS6231: Could not resolve the path 'version' with the extensions: '.ts', '.tsx', '.d.ts', '.cts', '.d.cts', '.mts', '.d.mts'.
  The file is in the program because:
    Root file specified for compilation


Found 1 error.


E:\MEAN_PHASE2\test_application>tsc -v
Version 4.9.5

E:\MEAN_PHASE2\test_application>npm install -g @angular/cli
npm WARN deprecated @npmcli/move-file@2.0.1: This functionality has been moved to @npmcli/fs

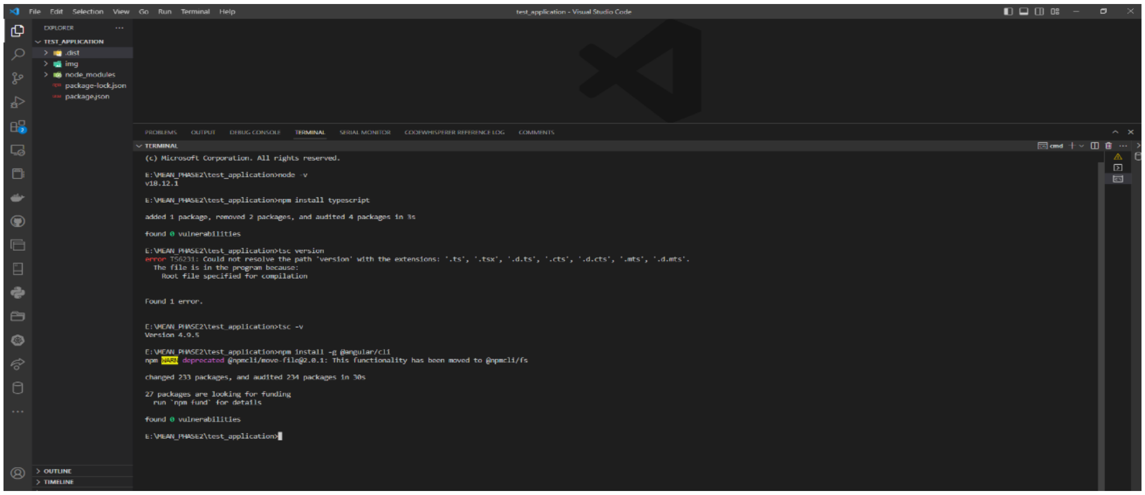
changed 233 packages, and audited 234 packages in 30s

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

found 0 vulnerabilities

E:\MEAN_PHASE2\test_application>
```

Angular/cli is installed from terminal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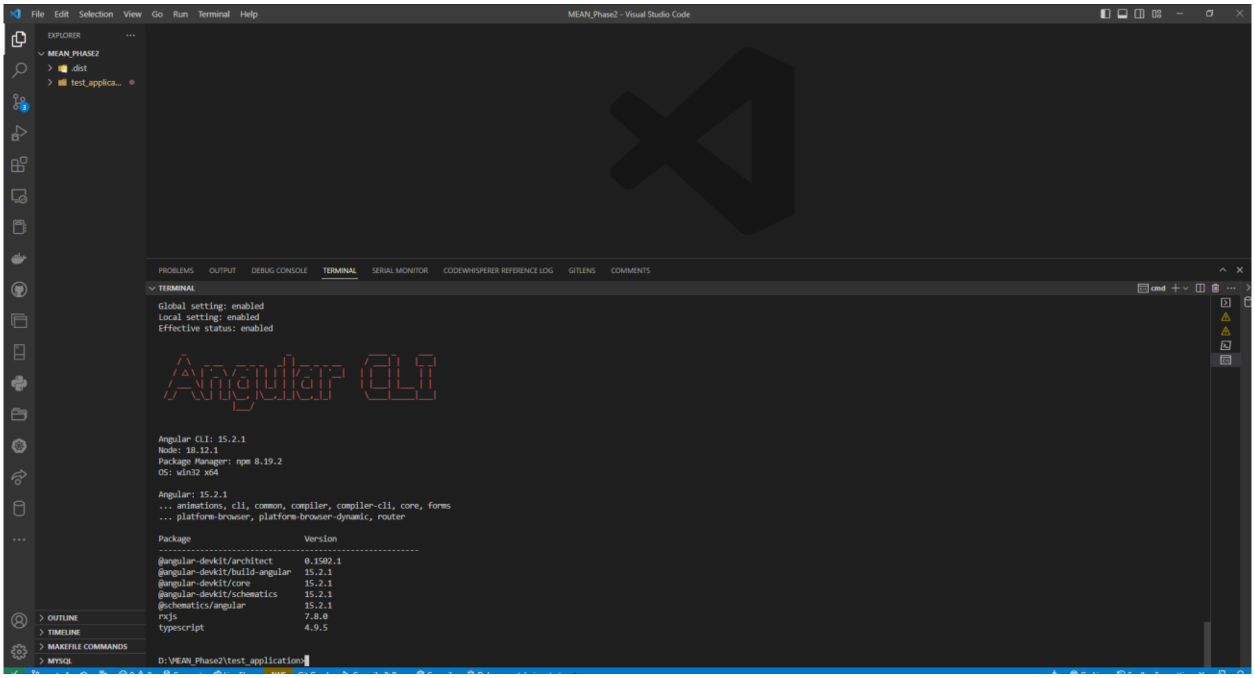
To check for versions of installed APIs



```
Global setting: enabled
Local setting: enabled
Effective status: enabled

Angular CLI: 15.2.1
Node: 18.12.1
Package Manager: npm 8.19.2
OS: win32 x64

Angular: 15.2.1
... animations, cli, common, compiler, compiler-cli, core, forms
... platform-browser, platform-browser-dynamic, router

Package                         Version
---------------------------------------------------------
@angular-devkit/architect       0.1502.1
@angular-devkit/build-angular   15.2.1
@angular-devkit/core            15.2.1
@angular-devkit/schematics      15.2.1
@schematics/angular             15.2.1
rxjs                            7.8.0
typescript                      4.9.5


D:\MEAN_Phase2\test_application>
```

The way angular CLI works:

Angular is used for

- front end development

SPA

by **dynamically rewritting the current web page with new data from web server ,instead of default method of a web browser loading entire new pages.**

Major benefit of SPA

1. Faster

2. Better user experience as it is faster

- **Angular JS**

 supported only javascript

Angular complete rewrite of Angular JS

- **Component based**

creating reusable components,services,directives,pipes

- **Installing angular->**

npm install -g @angular/cli

- ✦ **to check version**

ng version

or
ng --version

- ✦ npm i -g @angular/cli@{version-number}

The way a new Project is created with angular is:

- ✦ ng new <project name>

- ➢ To run angular project->
- ng serve

or

- ng s

Steps followed to create an angular app with bootstrap:

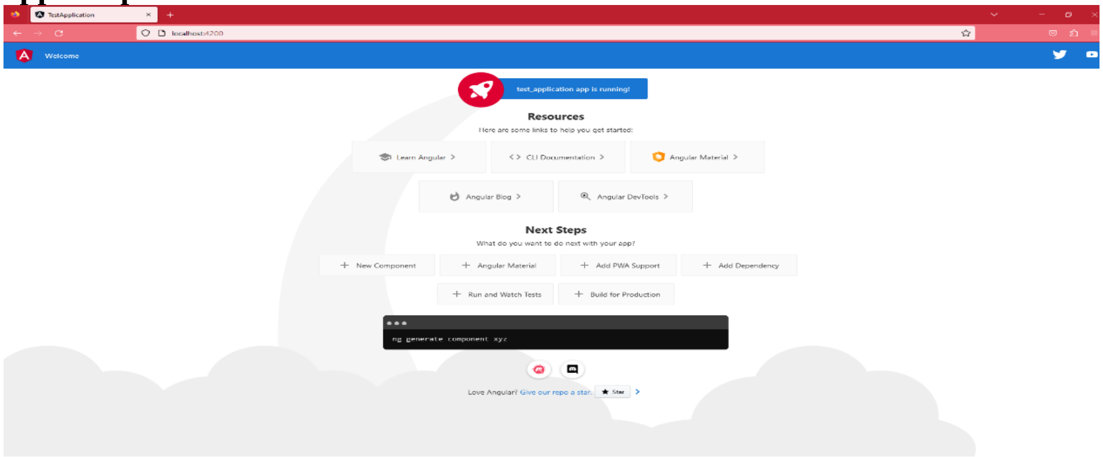
- ➔ A folder named test_application and is browsed in it in terminal using cd test_application
- ➔ ng new test_app_ang

choose y and css

browse in it in terminal using cd test_app_ang

- ➔ npm install bootstrap
- ➔ ng serve

app.component.html



test_application app is running!

Resources

Here are some links to help you get started:

Next Steps

What do you want to do next with your app?

```
ng generate component xyz
```

Love Angular? Give our repo a star.

- ➔ In angular.json file, below line is added in styles array ->

"node_modules/bootstrap/dist/css/bootstrap.min.css"

So, after adding above line, the style array will look like this->

```
"styles": [
             "node_modules/bootstrap/dist/css/bootstrap.min.css",
             "src/styles.css"
           ]
```

- **In app.component.html, below line is added**

<app-header></app-header>

- **ng serve**

- **main.ts**

act as entry point of the angular app
helps in creating the browser environment for the application to run.

- **platformBrowserDynamic**

supports execution of Angular Apps on different supported browsers
bootstrapModule(AppModule)
it will boot or start AppModule

- **selector**

html file / template

- **Components**

Syntax to create component
ng g c <component name>

- **Angular.json**

primary configuration file for an angular project
contains settings of angular project
to look for all the paths and configurations and to check which is the main file

- **Directives**

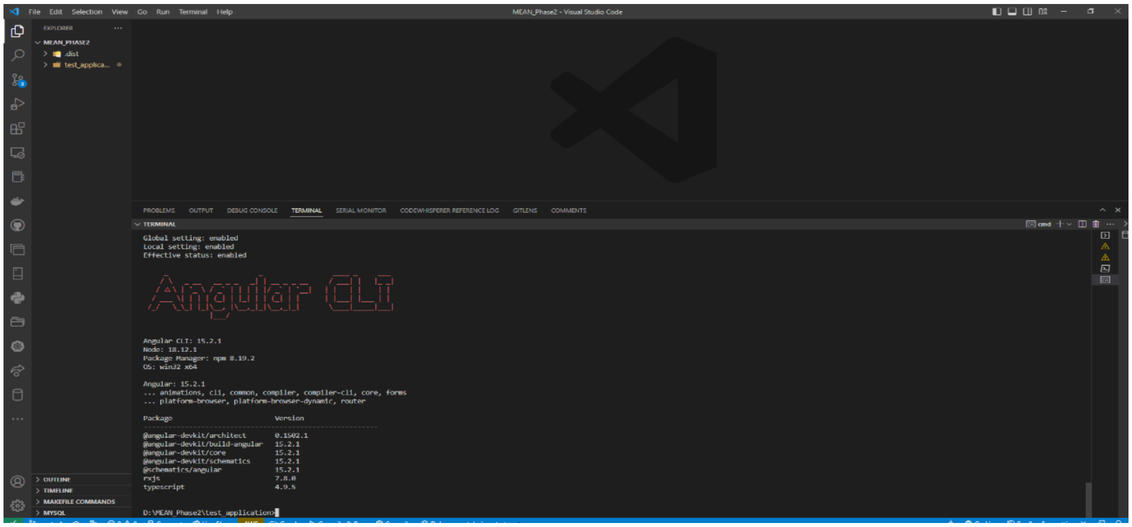
ng

- **reusable entity with predefined functionality**
  Type of directives->

- **1Structural directive**
- **responible for HTML layout**
- **shape or reshape the html view by simply adding or removing HTML elements from the DOM**
- **is prefixed before the structural directive**
- **a)*ngFor**
- **iterate over a collection of data**

- **Syntax**
- ***ngFor = "let <value> of <collection>"**
- **<value> Variable name**
- **<collection> property on ur component which is collection of data**
- **b) *ngIf**
- **evaluates a condition and based on the result further action will be taken**

A test_application folder is created:



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Angular CLI

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@angular-devkit/build-angular   15.2.1
@angular-devkit/core            15.2.1
@angular-devkit/schematics      15.2.1
@schematics/angular             15.2.1
rxjs                            7.8.0
typescript                      4.9.5


D:\MEAN_Phase2\test_application>
```

The way data binding occurs in an application:

Binding data (in component's file=.ts file) and UI(.html file/template)

2 types
1. One way data binding

a) Interpolation
data flows from .ts to .html
{{propertyName}}

must result in a string

b) Property Binding
data flows from .ts to .html file
syntax
<html element> [DOM property]= "<component property>"
<element [property] ='typescript_property'>

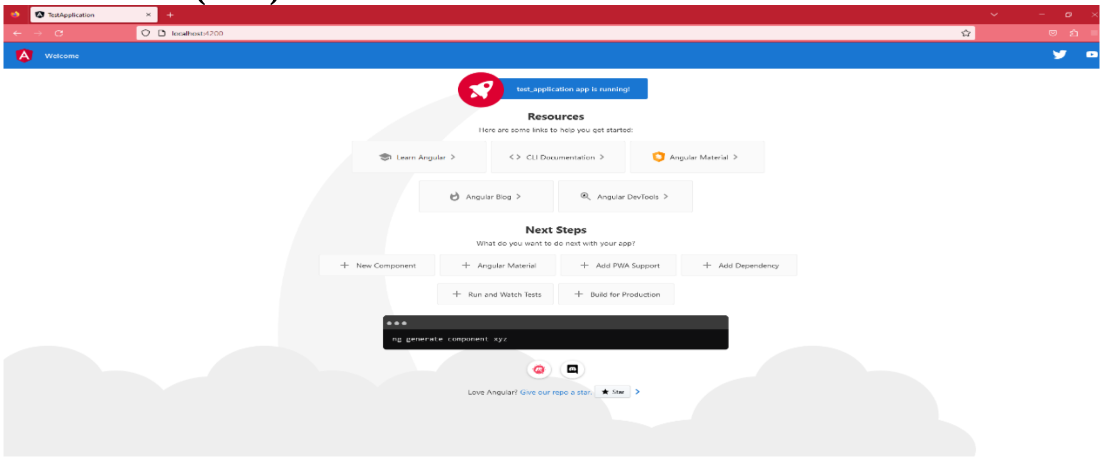
<span[innerHTML]='FirstName'></span>

<img [src]='imagePath'/>

<button [disabled]='Isdisabled'>Click me</button>

Event binding
even is any action performed by user
angular supports all events from javascript
a function to be executed when a certain event occurs

onClick ---->(click)



Here are some links to help you get started!

What do you want to do next with your app?

```
ng generate component xyz
```

Love Angular? Give our repo a star.

Syntax
<element (event) = function()>

$event - contains information about an event
"any"

The first page [app.component.html

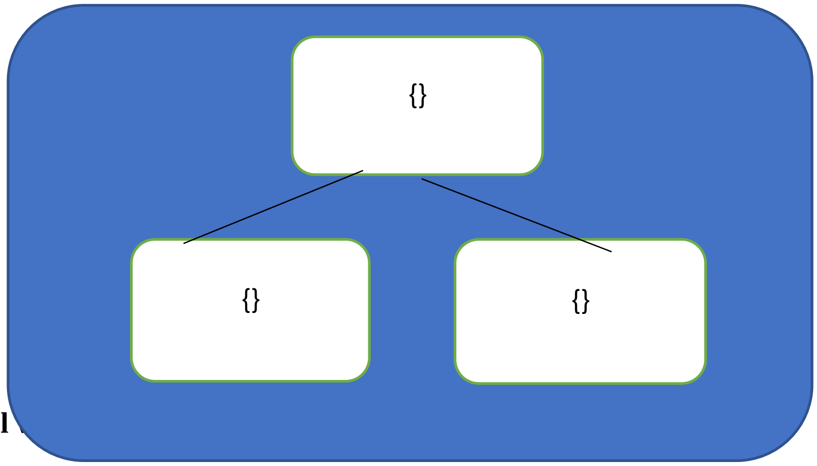
Components are created [ng g c <component-name>
within the application and compo nent.html of each are modified according to usage:

Creating responsive forms:

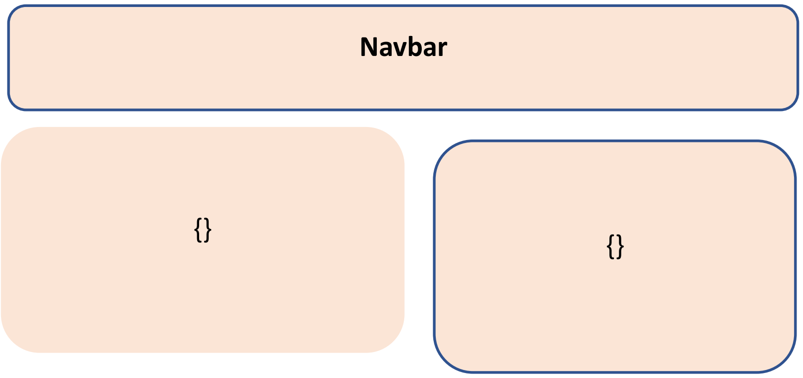
Creating browser bundles to allow the execution on the browser:

Components in Angular application encapsulates the template, data and behaviour of view.
Components are also known as View Components.

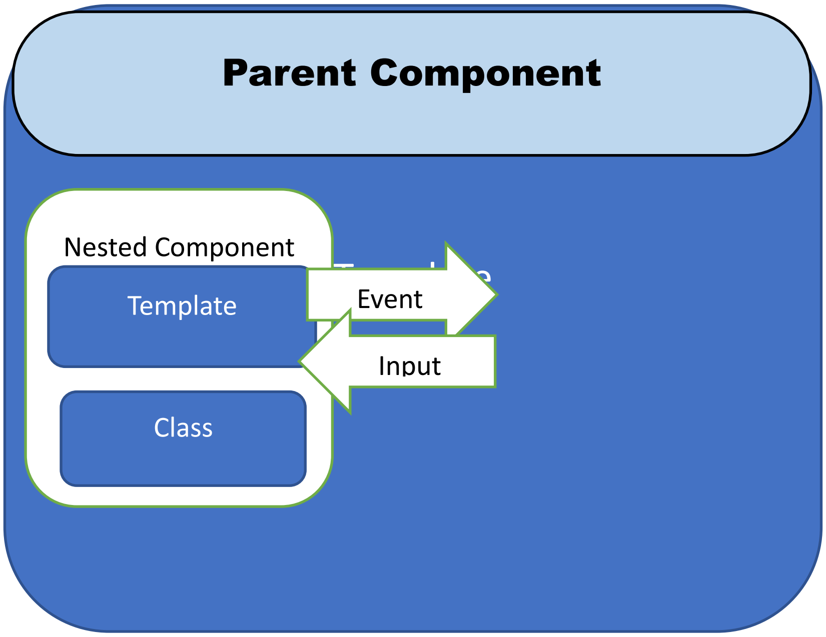
Every app has one component which is the root component.
Here in this case it is the app-component.



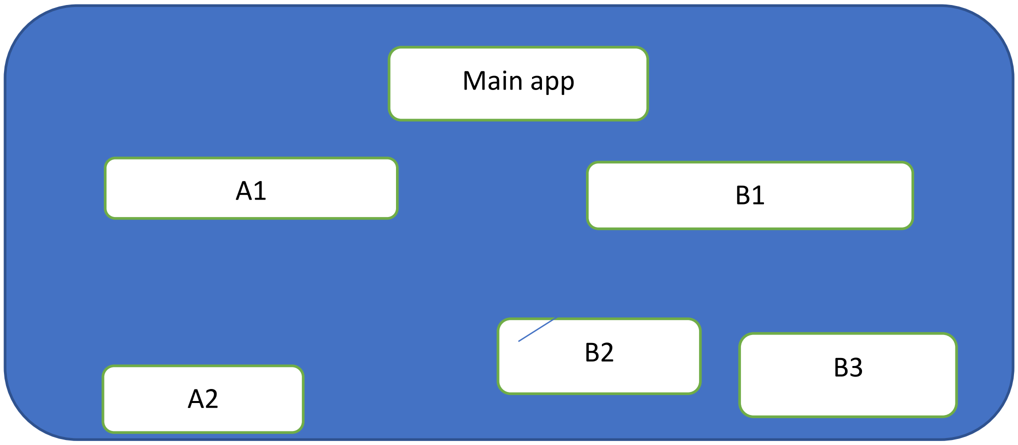
A real



In Angular a deeper nesting of components occur:



Deeper Nesting:



Angular Component Lifecycle
A component has a lifecycle managed by Angular.
• Angular creates the component and renders it, creates and renders its children,
checks when its data-bound properties change, and destroys it before removing it
from the DOM.
• Angular offers lifecycle hooks that provide visibility to the key lifecycle moments of
the component. It also provides the ability to act when these moments occur.
• A directive has the same set of lifecycle hooks, excluding the hooks that are
specific to component content and views.

Pushing project to github:

The pushing in github repository had created refspec error after the first time. However it was overcome with effort.

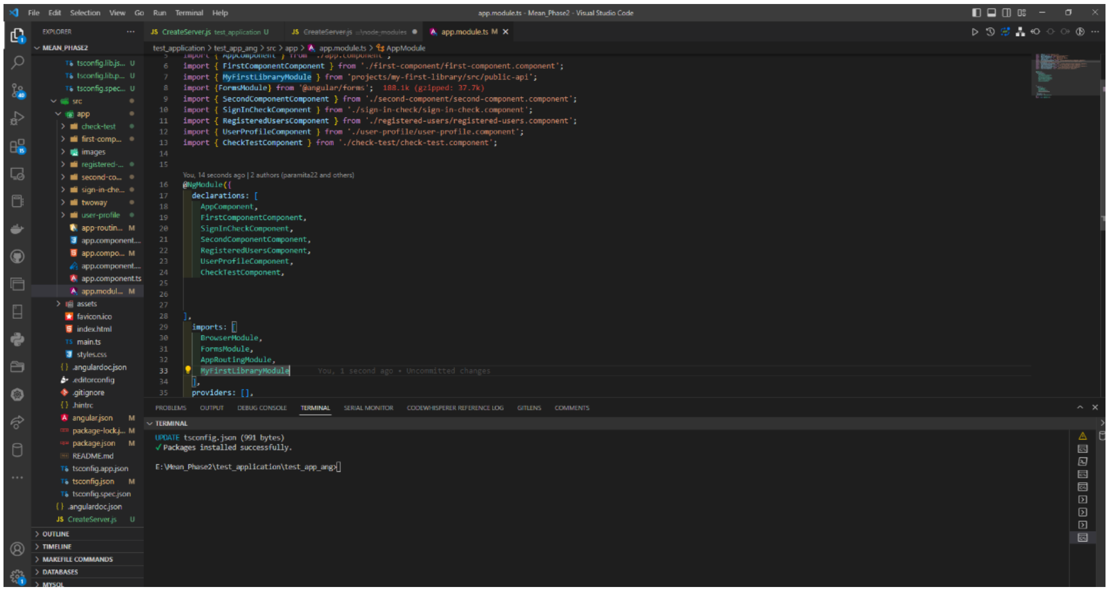
Installing the service worker could not be effected in the current system.

Installing the globally enabled http server:

Creating projects with library:

app.module.ts

All Components are imported in the .ts file to ensure a smooth execution
All Components are put in the declaration array



```
import { AppComponent } from './app.component';
import { FirstComponentComponent } from './first-component/first-component.component';
import { MyFirstLibraryModule } from 'projects/my-first-library/src/public-api';
import {FormsModule} from '@angular/forms';  188.1k (gzipped: 37.7k)
import { SecondComponentComponent } from './second-component/second-component.component';
import { SignInCheckComponent } from './sign-in-check/sign-in-check.component';
import { RegisteredUsersComponent } from './registered-users/registered-users.component';
import { UserProfileComponent } from './user-profile/user-profile.component';
import { CheckTestComponent } from './check-test/check-test.component';


You, 14 seconds ago | 2 authors (paramita22 and others)
@NgModule({
  declarations: [
    AppComponent,
    FirstComponentComponent,
    SignInCheckComponent,
    SecondComponentComponent,
    RegisteredUsersComponent,
    UserProfileComponent,
    CheckTestComponent,

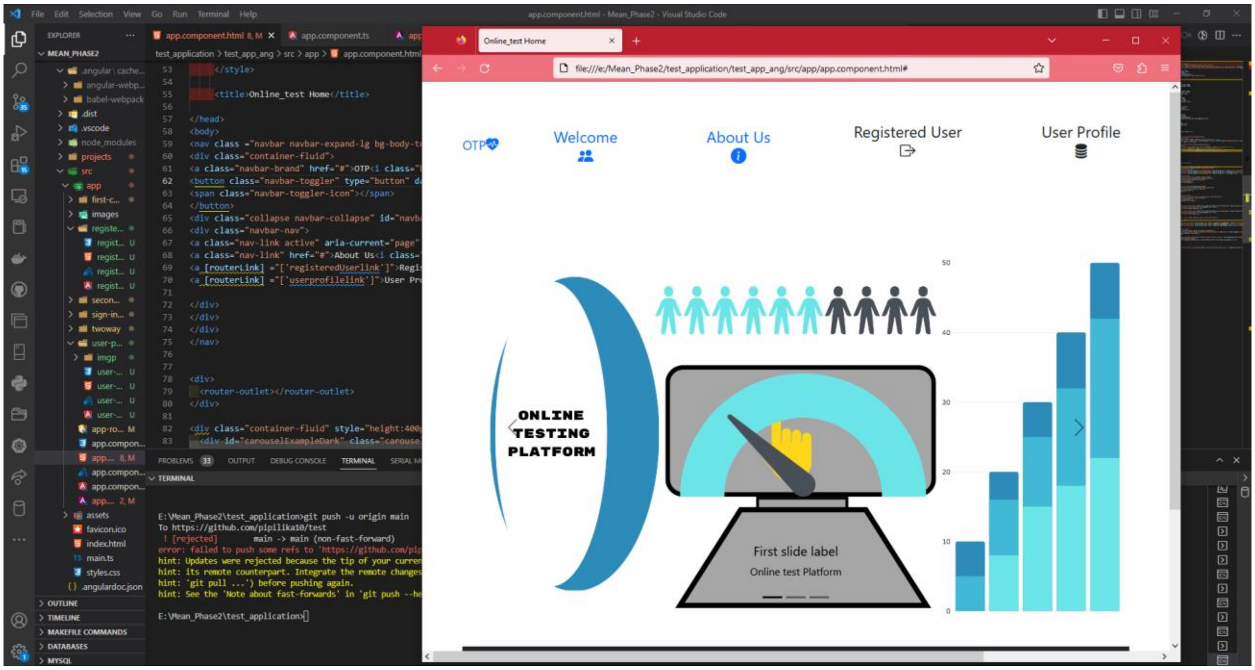


],
  imports: [
    BrowserModule,
    FormsModule,
    AppRoutingModule,
    MyFirstLibraryModule        You, 1 second ago • Uncommitted changes
  ],
  providers: [],
```

```
UPDATE tsconfig.json (991 bytes)
✓ Packages installed successfully.

E:\Mean_Phase2\test_application\test_app_ang>
```

The landing page of the test_application:



```
    </style>

    <title>Online_test Home</title>

</head>
<body>
<nav class ="navbar navbar-expand-lg bg-body-t
<div class="container-fluid">
<a class="navbar-brand" href="#">OTP<i class="
<button class="navbar-toggler" type="button" d
<span class="navbar-toggler-icon"></span>
</button>
<div class="collapse navbar-collapse" id="navb
<div class="navbar-nav">
<a class="nav-link active" aria-current="page"
<a class="nav-link" href="#">About Us<i class=
<a [routerLink] ="['registeredUserlink']">Regi
<a [routerLink] ="['userprofilelink']">User Pr

</div>
</div>
</div>
</nav>


<div>
  <router-outlet></router-outlet>
</div>

<div class="container-fluid" style="height:400
  <div id="carouselExampleDark" class="carouse
```

```
E:\Mean_Phase2\test_application>git push -u origin main
To https://github.com/pipilika10/test
 ! [rejected]        main -> main (non-fast-forward)
error: failed to push some refs to 'https://github.com/pip
hint: Updates were rejected because the tip of your curren
hint: its remote counterpart. Integrate the remote changes
hint: 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --he

E:\Mean_Phase2\test_application>
```

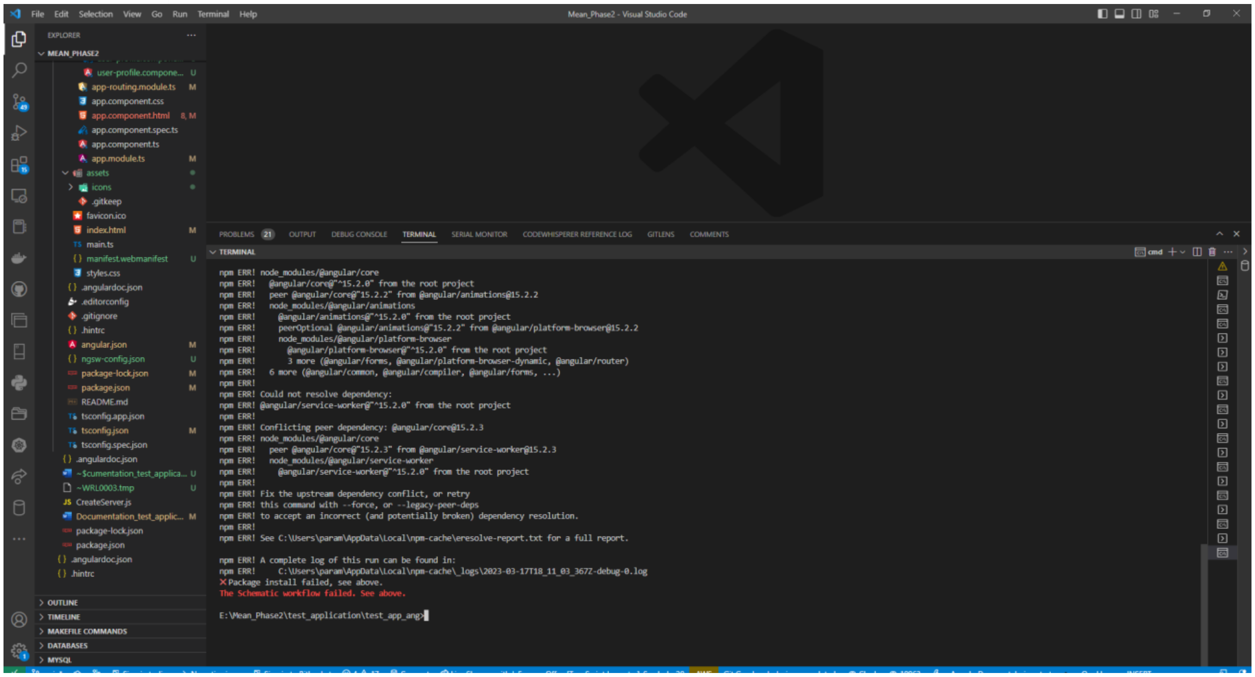
pwa app and service component:

To make an app visible to users we deploy it in the web server that is accessible to https, the following are needed.
Back-end: The app may use and access dynamically data stored in web server
Front-end: The resources needed for the app may be installed on the users device as html, and javascript.

Service workers are specialized that intercept network requests from your PWA and enable scenarios that were previously limited to native apps, including:

- **Offline support.**
- **Advanced caching.**
- **Running background tasks such as receiving PUSH messages, adding badges to the app icon, or fetching data from a server.**

@angular/pwa could not be installed . An installation failure occurred:



```
npm ERR! node_modules/@angular/core
npm ERR!   @angular/core@"^15.2.0" from the root project
npm ERR!   peer @angular/core@"15.2.2" from @angular/animations@15.2.2
npm ERR!   node_modules/@angular/animations
npm ERR!     @angular/animations@"^15.2.0" from the root project
npm ERR!     peerOptional @angular/animations@"15.2.2" from @angular/platform-browser@15.2.2
npm ERR!     node_modules/@angular/platform-browser
npm ERR!       @angular/platform-browser@"^15.2.0" from the root project
npm ERR!       3 more (@angular/forms, @angular/platform-browser-dynamic, @angular/router)
npm ERR!   6 more (@angular/common, @angular/compiler, @angular/forms, ...)
npm ERR!
npm ERR! Could not resolve dependency:
npm ERR! @angular/service-worker@"^15.2.0" from the root project
npm ERR!
npm ERR! Conflicting peer dependency: @angular/core@15.2.3
npm ERR! node_modules/@angular/core
npm ERR!   peer @angular/core@"15.2.3" from @angular/service-worker@15.2.3
npm ERR!   node_modules/@angular/service-worker
npm ERR!     @angular/service-worker@"^15.2.0" from the root project
npm ERR!
npm ERR! Fix the upstream dependency conflict, or retry
npm ERR! this command with --force, or --legacy-peer-deps
npm ERR! to accept an incorrect (and potentially broken) dependency resolution.
npm ERR!
npm ERR! See C:\Users\param\AppData\Local\npm-cache\eresolve-report.txt for a full report.

npm ERR! A complete log of this run can be found in:
npm ERR!     C:\Users\param\AppData\Local\npm-cache\_logs\2023-03-17T18_11_03_367Z-debug-0.log
✕ Package install failed, see above.
The Schematic workflow failed. See above.

E:\Mean_Phase2\test_application\test_app_ang>
```

The application could not implement the service worker for testing.