Phase 4

Total session 9

Day 5 : 23 Jan 2024

Frontend technologies

Typescript modules

Generally while developing any application using typescript we doesn't write all code in one file. We need to write in more than one file. Those file are connected using modules concept.

Modules are like package in package which more than one function, variable, class or interface which have same name but different purpose. The using module we can break in different files and using import and export we can connect both the file.

Html,

Css

JavaScript

TypeScript

jQuery : jQuery is a type of external JS library which contains lot of pre defined function which internally connected to each other to read, write and update DOM easily.

Angular Framework : Angular is an open source framework provided by google. Which internally follow MVC in front end side. Angular is known a component base architecture framework. Using angular we created SPA(Single Page Application).

Multi page application

Index.html or index.jsp welcome.html or welcome.jsp

Using hyperlink

Using submit button

Using javascript different types of events.

In multi page application every page contains its own DOM means. Html, head, body, div, p etc. so once we move from one page to another page whole DOM ie All html tags loaded in browser memory.

In SPA rather loading whole page we are loading only part of web page.

Using Angular framework or React JS we can develop SPA application.

Angular is framework part of google. Internally follow MVC or component base architecture.

React JS is light weighted library part of Facebook. React JS doesn't allow any standard.

Both angular or React JS use component.

Component is use to control the view or part of view page.

In SPA we use only one dom. Generally index.html first page.

Angular use typescript to create the components.

In angular we create component using class style.

React use typescript as well javascript to create the components.

In React JS we use both function style as well as class style. Preferable function style components.

Google provided Angular CLI(Command line interface) which help to create sample project.

Angular provided NG command (next generation for html page).

Angular

To enable ng in your local machine we need to download node js external modules with help of npm command or tools.

npm install -g @angular/cli

please create separate folder as angular-projects

open command prompt.

ng new demo-app (project name)

it will ask styling -> by default css : hit enter key.

Do you want Server side rendering (N)

After project creation done using cd command move inside a project folder

cd demo-app

then open the project in VS code.

To run the application we need to use ng serve -o. After this compile the project. Run on default browser with URL as

http://localhost:4200

inside a project folder expand src -→ app -→

app.component.html generally in angular it is known a template page.

Remove all code.

Inside this your need to write html code but no html, head, body tags. The code generally we write in body tag we need to write.

app.component.css : this file ie like external CSS file.

app.component.ts write some variables.

Angular internally use typescript or ES6 JavaScript to create the component with help of @Component decorator. Decorator is like a annotation in java.

Using decorator we can make function or class or variable special type.

Using decorator we are adding extra behaviour for class or variable or functions.

@Component decorator like annotation which contains lot of property or attribute.

Selector : using this property or attribute we are creating user defined tags.

Using angular we are creating user defined tags. Selector attribute is use to create the user defined tags.

templateUrl : using this property or attribute we are connected html page.

styleUrl : this property use to connect css file like link external CSS file.

In Angular by default app.component is consider as parent components or root components.

Inside project open another terminal ie ternal or vs cod internal

ng generate component componentname (this command we need to run inside a project with terminal).

ng generate component header

please stop the project (cntr + C)

npm uninstall -g @angular/cli (uninstall 17 version)

then install angular 16

npm install -g @angular/cli@16.0.1 (make sure you are outside current project folder).

using ng version

ng new sample-demo

routing --→ no

styling → css

using cd sample-demo

open the project in VSCode using code .

then run the project using command as ng serve -o

Till Angular 16.x version whenever we created any component we need to provide that component details in angular modules.

app.module.ts file

module is collection of more than one components

angular provided @NgModule decorator

which contains few property

ie declaration : in this section we need to declare all component declaration.

Ie imports : in this section we can import user defined or pre defined modules.

We are importing browser module because we are going to display the output on browser.

Using angular we can create web page, we can create mobile application , standalone application.

Bootstrap : in this section we are giving the information which one is parent component.

ng generate component header

or

ng g c header

create folder component and use in app.component.html

ng g c footer

angular data binding

data binding provide the bridge between html or template or view to angular component or ts file.

Using data binding we can share the data between view or template to component and vice-versa.

ng new angular-data-binding

routing -→no

styling -→ css

cd angular-data-binding

code . open the project in vs code

open app.component.html page remove all coding

<h2>Angular Data Binding </h2>

ng server -o

2 types of data binding

1. One data binding or uni-directional
    a. String interpolation : it is a type of one data binding which help to share the data between component to view

    Component (ts)----------→ View or template (.html)

    {{}} syntax {{}} must be use in html page.

    {{variableName}} : variable must be part of component file.

    {{functionName()}} : function must be part of that component file

    {{expression}}

    {{10+20}}

    {{20-10}}

    ng g c string-interpolation

2. Two data binding or by-directional