Angular

Why?

* Front End – Framework
* Its gives you inbuild SPA – Single Page Application
* 2 types of forms in Angular – template driven and reactive forms
* CLI – Command Line Interface –RAD, all the commands are run on cmd to create a project structure,, build the project all the other steps
* MVC
* Angular Mobile application

Node JS

Npm- Node Package Manage

Steps to create the Angular project

* To install cli run the below command in cmd

Npm install @angular/cli –g

Create a folder in any drive for angularjs, open the folder in Visual Studio Code and open command line in VSC (CTRL+~)

* To create the project structure ng new <projectname>
* To open the project -> code.
* To run the project go to the project in VSC command line and go to src/app
* Run the command npm start (it will internally call ng serve)
* Angular-cli.json -> angular.json

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| JAVA(f1.java) | Typescript |
| Compile(javac) | F2.ts |
| Execute(java f1.class) | Npm install |
| Build-> package(converts into .jar file)- It is done by JRE | Tsc f2.ts which will create t2.js |
|  | We can execute the .js file by using it in html file or can use node |
|  | Build -> package which is done by Webpack |
|  |  |
|  |  |

* In Angular we don’t have to do all the commands written under typescripting. Babble will do it automatically.
* So in Angular we have the following steps
  + Babble to transpile(convert)
  + Ng server which is called by npm start
  + Ng build (to build the project and create the package which is called webpack)
* To start
* App module kickstart you app component
* When you give the command ng server-> it goes to angular.json to check which one is index.html and which is the main.ts file-> main.ts file gives you the path for AppModule.ts(main module) and then appcomponent(main component). Main component has the selector(which has template URL)
* Package.json – When we run the program it will go to the package.json and check whether the dependency (application like bootstrap) is added or not. If not it will add at the run time
* When a new component is created then it gets automatically added to app.module.ts and path is also automatically added to the import but when we create the component manually then we have to add manually to app.module.ts

Angular Main Components

* Components
* Module
* Directives
* Pipes
* Services
* Routes

Modules Template Pipes

Services Component Directives

* All the pages in an application are components
* When a component is created it has 4 files – html, ts, css and spec.ts
* @Component annotation has the following properties
  + Selector
  + Templateurl
  + Template
  + Style
  + Styleurl
  + Provider
* To reuse the component we use the <>, inside we write the page name.
* If you need to use a variable which you have defined in .ts file and use it in html then we use {{ variable name}}. This is interpolation
* @**Component**({
* selector: 'app-root', *// This is called in Index.html*
* templateUrl: './app.component.html',
* styleUrls: ['./app.component.css']
* })
* How to create a component
* Ng g c <component name>
  + Ng is for angular
  + G is for generate
  + C is for component
* angularJS
  + Index.html(app.root)root component selector is called
  + Main.js
* When a project is run then it will see the Index.html. In Index.html we see that <app-root> is called (in the body tag). This will refer to the app-component.ts file where the selector is given as app.root
* If we create a new component then we see the selector in component.ts file and call it in app-component.html(which is the root file

Steps to start

* Install NodeJS\
* Install Angular CLI – npm install @angular/CLI -g
* Create a project structure – ng new myproject
* Open the folder in Visual Studio Code
* Go to Terminal (Ctrl+~)
* npm start which will internally start ng serve
* As soon as the above command is executed then it will go to Index.html
* It will then see the angular.json file
* It will then see the main.js
* It will go to the AppModule(root Module)
  + It has the following annotation(@ngModule) properties
    - Declaration – Whenever a new component is created by using the command (ng g c Employee) then it gets automatically added in the selector of App Component. eg <app-employee> and then this should be added to the app-component.html underh1
    - Imports
    - providers
* It will go to the AppComponent(root component)
  + The @Component annotation has the below properties
    - Selectors – <app-component.ts> file has all the component selectors
    - Template URL
    - Style url
* App Component checks the selector which is <app-root> which will then
* App component html has the selector added to the h1 tag
* App-routing.module.ts – This is the file where we mentions all the tabs navigation in a page

Angular Forms:

* There are 2 types of forms specifically for Angular
  + Template driven Form
  + Reactive form – Model driven form
* Two Way Binding – Form to ts and then ts to form
* Banana case binding

HTTP Client Module

When we retrieve the json file data in form of array that is done by httpModule

Rest API works on a protocol of HTTP

http has verbs(status code)

Get-select

Put-update

Post-insert

Delete-remove

To consume JSON file

* Create a JSON file on JSON Server and run the json server. To read/consume this json file we need to have a service so we created a service.
* Now to consume the json file data in the service we need to inject the httpclient in the constructor of the service. We created a method in this service class which will get the json data through http.
* Create a model of item as class in ts file which is similar to itme.json file.
* Now this has to be called in a component. So we created a http service component. Here we created a variable with type Item class. And in the constructor of that component class we have injected the service class with a new variable
* Then in that component class we created a method which will read the json file data using subscribe method(used for reading json file) and this method is called in onInit