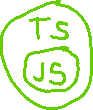
Week8 Day1

TypeScript – Typed Super Set of Java Script (Strongly typed scripting language)

<https://www.typescriptlang.org/> -- Official website. This language is developed by Microsoft.

Official Definition --- “TypeScript is a strongly typed programming language that builds on JavaScript, giving you better tooling at any scale.”



Data type of the variable is defined while declaring the variable.

Typescript --- Compiler (TSC) ---- Javascript (Transpilation = Translation +Compilation)

Translation = converting from one human readable format to another human readable format [English – French convertion – Translation ]

Java source code to byte code/object code [Compilation = Human understandable format to Machine understandable format]

All typescript file will have an extension (.ts)

TypeScript uses compile time type checking. Which means it checks if the specified types match **before** running the code, not **while** running the code.

Installing Typescript

1. Check node & npm version node -v npm -v
2. Npm (Node package Manager) – To add JS based dependencies
3. Npm install -g typescript –save -dev

In all the JS based framework, the configuration files will be in .json format only.

Example: tsconfig.json, angular.json, package.json

Data types in typescript

1. Boolean
2. Number
3. String
4. Undefined and null
5. Any
6. Void
7. Arrays
8. Tuples
9. Enum
10. Never

Normally anything starts with @symbol in java, is called as annotations, but in javascript it is called as decorators [@Component, @NgModule…. ]

Tsc –init (will create tsconfig.json)

Npm init (will create package.json)

Angular [JS based framework to develop Rich & Interactive UI (User Interface)]

Angular is a Framework used to create SPA (Single Page Applications)

MPA – Multi Page Application (index.html, home.html, about-us.html, contact-us.html etc.,)

Major challenge in MPA is (It’s a blocking operation) – Until it gets data from the server, browser will remain in blocked mode (Any other operations are not possible in this state)

Latest version of Angular 14.0.x (Once in a six month period, there will be a new version of angular]

SPA – Only One page (It will have many components) (index.html) [Non-blocking operation]

1. Check Node & NPM version [node -v, npm -v]
2. Npm I -g @angular/cli
3. Ng new my-app

<https://angular.io>

<https://angular.io/docs>

|  |  |  |
| --- | --- | --- |
| Sl No | JAVA (Spring Boot) | JavaScript Framework (Angular) |
| 1 | POM.xml | Package.json |
| 2 | Maven | Webpack |
| 3 | Starter class (Class with Main method) Entry point | Main.ts (Entry point) |
| 4 |  |  |

Angular app (Folder Structure)

Src (folder)

Node\_modules(folder) -- Will contain all the dependencies to run the angular app. (The size is around 250 mb)

Angular helps to create custom HTML tag.

Component is nothing but, reusable piece of code that can be executed n no of times.

Component has both UI & data to fill the UI.

SPA is equivalent to AJAX. (No complete page re-load, it will be very faster)

Angular framework contains

1. Component [@Component Decorator]
2. Module [@NgModule]
3. Directives
4. Pipe
5. Class
6. Interface
7. Service

Component will have 4 files

1. Component.ts (Main controller file)
2. Component.html (template or user interface)
3. Component.css (css applicable only for the selected Component)
4. Component.spec.ts (unit testing code)

Ng generate (component[c] / Service/ Route/ Pipe)

Types of data binding in angular

1. Interpolation binding {{ }}
2. One way binding (Property Binding /Method Binding)
3. Two way binding

Every angular application will have root module (app-root) & root component (app-component)

@Component({

  selector: 'app-login',

  templateUrl: './login.component.html',

  styleUrls: ['./login.component.css']

})