What is TypeScript ?

TypeScript is a strongly typed, object oriented, compiled language. It was designed by **Anders Hejlsberg** (designer of C#) at Microsoft. TypeScript is both a language and a set of tools. TypeScript is a typed superset of JavaScript compiled to JavaScript.

Features of TypeScript ?

1. **TypeScript is just JavaScript**. TypeScript starts with JavaScript and ends with JavaScript. Typescript adopts the basic building blocks of your program from JavaScript. Hence, you only need to know JavaScript to use TypeScript. All TypeScript code is converted into its JavaScript equivalent for the purpose of execution.
2. **TypeScript supports other JS libraries**. Compiled TypeScript can be consumed from any JavaScript code. TypeScript-generated JavaScript can reuse all of the existing JavaScript frameworks, tools, and libraries.
3. **JavaScript is TypeScript**. This means that any valid **.js** file can be renamed to **.ts** and compiled with other TypeScript files.
4. **TypeScript is portable**. TypeScript is portable across browsers, devices, and operating systems. It can run on any environment that JavaScript runs on.

Why Use TypeScript ? (Benefits)

1. **Compilation** − JavaScript is an interpreted language. Hence, it needs to be run to test that it is valid. It means you write all the codes just to find no output, in case there is an error. Hence, you have to spend hours trying to find bugs in the code. The TypeScript transpiler provides the error-checking feature. TypeScript will compile the code and generate compilation errors, if it finds some sort of syntax errors. This helps to highlight errors before the script is run.

1. TypeScript **supports Object Oriented Programming** concepts like classes, interfaces, inheritance, etc.

The TypeScript Compiler



The TSC generates a JavaScript version of the **.ts** file passed to it. In other words, the TSC produces an equivalent JavaScript source code from the Typescript file given as an input to it. This process is termed as transpilation.

**Instructions to install typescript :**

1. Download and install node. <https://nodejs.org/en/>
2. Download Visual Code Studio and install. <https://code.visualstudio.com/docs?dv=win>
3. Open command prompt and run following command to check node version

node -v

1. Type the following command to install typescript globally  
    ng new **projectName (go to project folder)**
2. Type the following command to install typescript globally  
    npm install -g typescript
3. Install angular command line type the following command  
    npm install -g @angular/cli
4. Generate new component  
    ng g c component-name
5. Install Bootstrap framework  
    npm install bootstrap