

# TypeScript

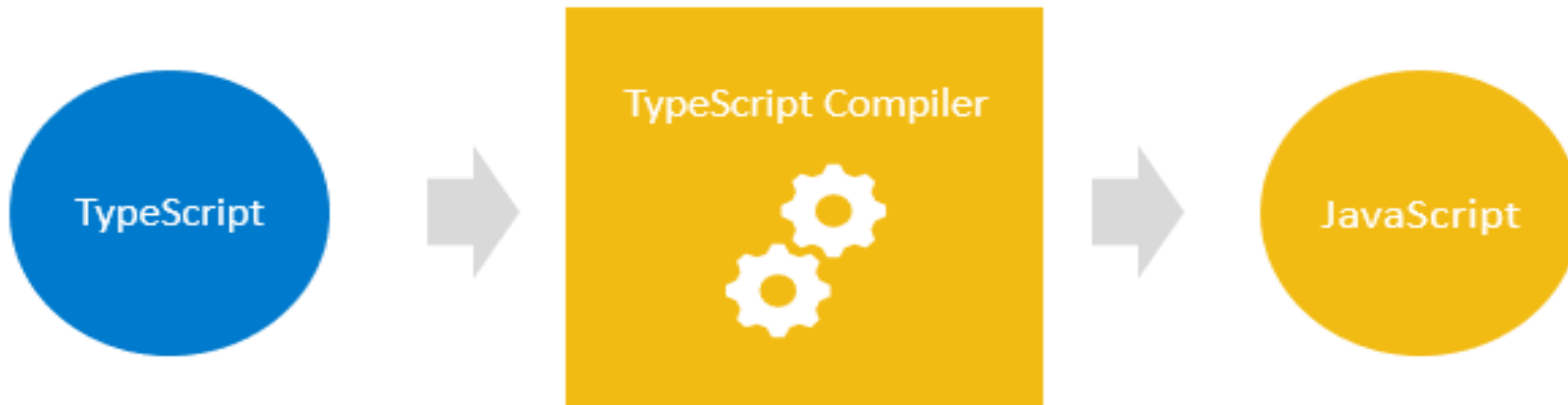
Capgemini 



## TypeScript 4.0:

TypeScript is a programming language developed and maintained by Microsoft. It is a strict syntactical superset of JavaScript and adds optional static typing to the language. TypeScript is designed for the development of large applications and compiles to JavaScript. As TypeScript is a superset of JavaScript, existing JavaScript programs are also valid TypeScript programs.

Angular, one of the largest frontend frameworks, is using TypeScript.





## **Features of TypeScript:**

- ❑ TypeScript Code is converted into Plain JavaScript Code:
- ❑ JavaScript is TypeScript.
- ❑ TypeScript totally follows the OOPS concept .
- ❑ Use TypeScript anywhere.
- ❑ TypeScript supports JS libraries

## **Advantages of using TypeScript over JavaScript**

- ❑ TypeScript always points out the compilation errors at the time of development only. Because of this at the run-time the chance of getting errors is very less whereas JavaScript is an interpreted language.
- ❑ TypeScript has a feature which is strongly-typed or supports static typing. That means Static typing allows for checking type correctness at compile time. This is not available in JavaScript.
- ❑ TypeScript is nothing but JavaScript and some additional features .



## **History:**

In 2010, [Anders Hejlsberg](#) (the creator of TypeScript) started working on TypeScript at Microsoft and in 2012 the first version of TypeScript was released to the public (TypeScript 0.8).

TypeScript 0.9, released in 2013, added support for generics.

On 22 September 2016, TypeScript 2.0 was released; it introduced several features, including the ability for programmers to optionally prevent variables from being assigned null values.

TypeScript 3.0 was released on 30 July 2018.

TypeScript 4.0 was released on 20th, August 2020.



# TypeScript - Environment Setup

TypeScript development environment setup involves the installation of below tools.

- **Integrated development environments (IDEs):** The editor helps to write your source code.
- **Installing Node.js:** An open-source framework that provides the packages needed for TypeScript and Angular development.
- **The TypeScript Compiler:** The TypeScript compiler is itself a **.ts** file compiled down to JavaScript (.js) file. The TSC (TypeScript Compiler) is a source-to-source compiler (transcompiler / transpiler).