**Typescript :** typescript is a type of scripting language which support all features of ES6 with data type concept.

To install TypeScript in CMD:

**>> npm install –g typescript**

Typescript also known as super set of JavaScript.

But browser doesn’t support typescript directly. We have to convert TS to JS. Using typescript transpiler we have to convert ts to js.

**>> tsc fileName.ts**

**>> node filename.js**

**Node JS :** Node JS is run time environment for JavaScript or library or framework. Before Node JS JavaScript is known as client side scripting language. But after node js JavaScript also known as Client side as well as server side scripting language.

Using server side JavaScript we can do file handling programming, creating web application, creating rest full web service, connection database it can be mysql or mongo db etc.

Before Node JS we were not able to run the JavaScript program without taking the help of html page.

After node js we can run the Javascript using node command on console or terminal without browser.

In node js program we can’t use BOM and DOM.

In JavaScript only function name must be match doesn’t matter number of parameter list and type of parameter list must match.

JavaScript by default can return any type of value as well as not mandatory to return the value.

**Working with Function:**

**Optional parameter**

Optional parameter declaration must from right to lift. If we want to declare the optional parameter we can declare one parameter or more than one parameter. There must be mandatory parameter between two optional parameter.

**Default initialization parameter**

Same rules apply for default initialization. Rather than ? we have to assign the default value.

**Rest operator or parameter**

If we make array variable as a parameter we have to array mandatory may be array hold 0 value or 1 value or many value.

Syntax

…variableName:datatype[]

In function we can use only one rest parameter and it must be last parameter in function.

**OOPs concept in typescript**

In JavaScript we can create user-defined object using 3 ways

1. Literal style

2. Function style

3. Class style

**ES5 and ES6 in JavaScript**

Typescript with class style using data type concept.

**Working with Constructor:**

To create the constructor in typescript as well as ES6 style javaScript we have to create the function with name constructor.

In Typescript we can write only one constructor it can be empty or parameter.

Typescript support access specifiers like public and private.

In typescript we can use private or public access specifier with constructor parameter variable to make the variable as instance variable.