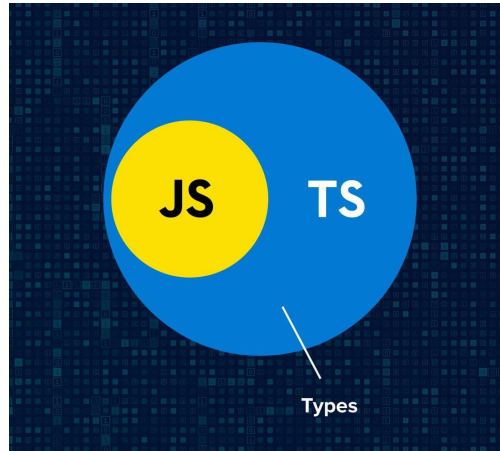

Introduction to Typescript

What is Typescript ?

- TypeScript is JavaScript for application-scale development.
- **Strongly typed**, object oriented, compiled language
- JavaScript plus some additional features.



Why use Typescript ?

- Strongly typed
- Code readability
- Interfaces
- Generics

Playground

<https://www.typescriptlang.org/play?#code/Q>

Basic Data Types

- number
 - Represents both integer and fractions
 - ex : **let num : number = 3;**
- string
 - Sequence of character
 - ex: **let str : string = "Hello";**
- boolean
 - Logical values
 - ex: **let isLoading : boolean = true;**

Function

Syntax :

function name(param1 : type, param2: type): return type

{

}

Ex :

```
function sum(num1: number, num2: number): number {  
    return num1 + num2;  
}
```

Class

Syntax :

```
class className {  
    //member variables  
  
    //methods  
}
```

Ex :

```
class Car {  
    name: string;  
  
    constructor(name: string) {  
        this.name = name;  
    }  
  
    move() {  
        console.log(`${this.name} is moving`);  
    }  
}
```

Creating TS project

1. mkdir typescript-project
2. cd typescript-project
3. touch index.ts
 - a. Enter the code
4. Create Dockerfile
 - a. touch Dockerfile
 - b. Enter the code
5. Build and run docker file
 - a. docker build . -t ts-project
 - b. docker run -it ts-project sh
6. node index.js

index.ts

```
let str: string = 'Hello TypeScript';  
console.log(str);
```

Dockerfile

```
FROM node:16.16.0-alpine3.15  
  
RUN npm i -g typescript --save-dev  
  
COPY ./ /app/www/typescript-project/  
  
RUN cd /app/www/typescript-project \  
  
    && npx tsc --init && npx tsc  
  
WORKDIR /app/www/typescript-project
```

What is tsconfig.json ?

- This file indicates that directory is the **root** of typescript project
- Specifies root files and **compiler options**
- Ex :
 - **target : "es2016"**
 - Set the js version for emitted js
 - **noImplicitAny : true**
 - Show error if implied type is any
 - **strictPropertyInitialization : true**
 - Show error if class member is not initialized through constructor

Reference

- [Handbook](#)
- [Tutorial](#)

Thank You