**What should know before learning Type Script.**

Java Script:

1. Variables
2. Arrays
3. Objects
4. Function
5. Arrow function
6. Destruction

**Top three questions people talk about type script.**

1. What is type script ?
2. Why do we need it?
3. How is it different from Java Script?

Type script is a programming language created by Microsoft to address some of the shortcomings of java script.

TypeScript is a superset of JavaScript, which means that any valid JavaScript code is also valid TypeScript code. TypeScript adds optional static typing, class-based object-oriented programming, and other features that make it easier to build and maintain large-scale JavaScript applications.

Graphical user interface

Description automatically generated

**shortcomings of java script**

JavaScript is a powerful and flexible programming language, but it also has some well-known shortcomings that can make it challenging to build and maintain complex applications. Some of the most common issues with JavaScript include:

1. Type system: JavaScript is a dynamically-typed language, which means that type checking is done at runtime. This can lead to errors that are difficult to catch and debug.
2. Lack of modularity: JavaScript lacks a built-in module system, making it difficult to organize code and manage dependencies.
3. Debugging: JavaScript can be challenging to debug, especially in large and complex applications.
4. Tooling: JavaScript tooling is not as mature as other programming languages, which can make it difficult to find good development environments, IDEs, and other tools.
5. Large codebases: As JavaScript applications grow in size and complexity, it can become difficult to maintain code and manage dependencies.

TypeScript was designed to address many of these issues by adding optional static typing, a built-in module system, improved debugging support, and other features that make it easier to build and maintain complex JavaScript applications.

A screenshot of a computer

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Static Typed VS Dynamically Typed Language

**Static Typed**: We know the type of variable at the time of compile time or while coding.

**Dynamically Typed:** The type of variable is dynamic so it’s determined at run time and it can also change , we can declare variable set it to number (int number = 10;) and later on change it to string (number = “ a”;) so this variable don’t have fixed or static type.

**We will learn in Type Script:**

1. The Any type.
2. Arrays
3. Tuples
4. Enums
5. Functions
6. Objects

**Built-in types**

**Java Script Built-in types**

Number

String

Boolean

Null

Undefined

Object

**Type script Built-in types**

Any

Unknown

Never

Enum

Tuple