Typescript

Description

Typescript is an open source programming language built by Microsoft, who's a primary language for Angular and Angular 2 application development. It's designed for large-scale operations in both client side and server side (Node.js) operations as a superset of Javascript. In this course, you'll start from the beginning and work your way up to more advanced concepts like type checking, iterators, and manipulating objects and arrays.

Classroom Registration Price (CHF)
1600
Virtual Classroom Registration Price (CHF)
1500
Course Content
Module 1. Introduction

- What is TypeScript?
- TypeScript Philosophy
- Why Use TypeScript?
- Using TypeScript

Module 2. The Basics of Variables

- Declaring a Variable
- Declaring Types in Untyped Code
- Hoisting Variables
- TypeScript Scope is JavaScript Scope
- Switch Scope
- The Multiple Methods of Declaring a String
- String-Tagged Templates
- What is a Number in TypeScript?
- Booleans, Functions, and Objects
- Avoiding `any` at Any Time Possible
- Mutable and Immutable Arrays
- Undefined Versus Null
- Returning nothing with Void
- The Primitive Type never
- Unknown: A Better any
- Literal Type to Narrow Primitive Type
- Symbol and Unique Symbol
- Casting to Change Type

Module 3. Comment

- TypeScript's Comments are like JavaScript's with One Exception

Module 4. Enum

- Enum With and Without Values

- Accessing Enum Values
- Speeding Up Enum
- Merging and Adding Functionality to Enum

Module 5. Generic Type

- Generic
- Generic and Classes
- Generic Constraint
- Generic with Construction Functions
- Generic Outside Class
- Generic Comparison
- Generic Inference
- Generic Default
- Generic and keyof

Module 6. Functions

- Definition
- Named and Anonymous Functions
- Function and Inference Variables
- Generic Return Type, Optional Parameter and Default Value
- Functions in Classes
- Function Relationship with "this"
- Function and Inference Return Types
- Overload Functions to Enrich your Definition
- String Literal and Overload Function
- Types of Function Headers

Module 7. Mapped Type

- Definition and Usages
- Immutable Data with Readonly
- Partial
- Nullable
- Pick
- Omit
- Record
- Extract
- Exclude
- ReturnType
- Custom Mapped Type

Module 8. Objects

- Introduction to TypeScript's Many Objects
- The Curly Braces Object
- New Object
- Lowercase vs UpperCase Object

Module 9. Index Signature

- Definitions and Usages

- String or Number Indexes
- Members of the Same Type
- Keys with Constants and Symbols

Module 10. Variables Advanced

- Intersecting with Types, Interfaces, and Generics
- Literal Type, Narrowing, and Const
- Union with Types and Tagged Union
- Const Assertion for Literal Values
- Tuple For Type and Length Arrays
- Casting to Change Type
- keyof to Validate a Member's Name
- On How TypeScript Handles Variance
- How to Narrow a Type with the in Operator
- What is a Conditional Type?
- TypeScript Inference
- Set and Dictionary

Module 11. Exception

- Creating an Exception
- Catching Synchronous Exceptions
- Catching Asynchronous Exceptions
- Assertion Functions

Module 12. Alias

- Aliases with the Structural Behavior of TypeScript
- Aliases with Type
- Aliases with Generic Types and Recursivity
- The Differences between Type Aliases and Interfaces
- Branded Alias

Module 13. Type Checking

- Comparing Variables
- Type Checking with typeof
- Type Checking with instanceof
- Type Checking and Interface with a Discriminator
- Type Checking with Intersections
- Type Checking an Interface with Custom User-Defined Type Guard
- Optional Chaining and Optional Element Access
- Nullish Coalescing
- Assertion Functions

Module 14. Iterators

- Iterating an Object's Keys with For-In
- Iterating an Object with Standard For/While
- Iterating and the Asynchronous Loop

Module 15. Manipulating Objects and Array

- Typing an Array
- Array with a Skipped Value
- Destructuring an Array
- Destructuring an Object
- The Spread Operator and Arrays
- The Spread Operator and Objects
- The Bang Operator

Documentation

- Digital courseware included

Participant profiles

- Newcomers in Typescript but not beginners in Javascript

Prerequisites

- To have experience with Javascript

Objectives

- At the end of this training, you will have a full understanding of all major concepts of Typescript, and you will know how these concepts are implemented

Niveau
Fondamental
Duration (in Days)
2
Reference
TSCRIPT