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Sign up

TypeScript training

3 days (21 hours)

Presentation

Learn how to optimize the performance and security of your JavaScript code with our TypeScript training course.

TypeScript adds new features to JavaScript to enhance the quality of your applications. This language, [beloved by developers](#), has proven its worth with a strong and rapid adoption curve.

Our TypeScript training course will teach you the basics of the language. You'll learn about the most important concepts: syntax, Types, compiling, functions, classes and decorators.

We'll also teach you about interoperability between TypeScript and JavaScript, and how to debug your developments.

As always, this course is based on the latest version of the technology, [TypeScript 5](#).

Objectives

- Understanding TypeScript, how to use it and compile it
- TypeScript coding skills
- Understanding the link between JavaScript and TypeScript
- Migrating JavaScript code to TypeScript

Target audience

- Front-end developers
- Technical architects
- Project managers

- Design engineers
- Webmasters

Prerequisites

- Knowledge of HTML and CSS
- JavaScript experience or [JavaScript training](#)

TypeScript training program

Introduction

- From JavaScript to TypeScript
- Why use TypeScript?
- What TypeScript isn't
- Installation

Types

- TypeScript vs JavaScript
- What is a Type?
- How do I use them?
- Assignability
- Annotations
- Type assignment and inference
- Type shapes
- Modifiers

Compiling it

- Inclusion and exclusion of files
- TypeScript Core libs
- Configuring the compiler
- Checking code quality
- Compiling your project

TypeScript basics

- Index.ts
- Variable types
 - The figures
 - G-strings
 - Booleans
- Object types

- Types of arrays
- Tuples
- Enums
- Coding with types
 - Any
 - Union
 - Literal
 - Aliases and custom types
 - Unknown
 - Never

The functions

- Function types
- Functions as Types
- Parameters
- Return types
- Call-signature compatibility

Classes and interfaces

- Class and inheritance
- Using "this"
- Public and private access modification
- Readonly
- Getters and Setters
- Abstract classes
- Why use interfaces?
- Interfaces as function types
- Extensions
- Merging interfaces
- Parameters and optional properties
- JavaScript compilation

Decorators

- What are decorators?
- Decorator factories
- Improving the use of decorators
- Add several decorators
- The properties
- Accessor and parameters

Migrating from ES to TypeScript

- Type Declarations
- Rest parameters
- Arrow functions
- The Spread operator

- How do I migrate from JavaScript to TypeScript?
- Type lookup
- Using third-party Javascript

Troubleshooting

- Return null
- The exceptions
 - Throwing
 - Returning
- The Option Type

Reactive programming

- Understanding reactive programming
- What is asynchronous propagation?
- Promises and futures
- ReactiveX observables
- Composable operators
- Hot observables vs. cold observables

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.