



TypeScript Training Curriculum

STRUCTURE



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“Learn the end-to-end typescript fundamentals and advanced concepts to use it well with your JavaScript projects.”

About Croma Campus:

Croma Campus Training & Development Private Limited is an education platform since 2010 providing rigorous industry-relevant programs designed and delivered in collaboration with world-class faculty and industry.

- Hands-On Live Projects
- Simulation Test Papers
- Industry Cases Studies
- 61,640+ Satisfied Learners
- 140+ Training Courses
- 100% Certification Passing Rate
- Live Instructor Classroom / Online Training
- 100% Placement Assistance

Course Objectives:

- Know all about TypeScript and get the fundamental skills.
- The benefits Typescript brings to your JavaScript projects
- How to define custom types using Interface?
- How to write generics and constraints?
- How TypeScript works with Asynchronous code?
- How to use TypeScript in your chosen JavaScript framework?

Course Description:

Our comprehensive TypeScript training course will get you up to speed with Microsoft's popular superset of JavaScript. Typescript brings strong types to your JavaScript projects. Your code will become more robust.

You will identify potential problems earlier. The code your team writes will more clearly communicate its meaning and intent. Typescript will encourage a workflow where your code is always working.

This course can be customised to be delivered alongside your favourite JS frameworks and libraries such as Angular, React, GraphQL, Node.js and even bring in topics from our Advanced TypeScript training course - let us know about your specific learning goals and project requirements to find out how we can help.

Croma Campus Training Program Deliverables:

- **Session Recordings** - Original Class Room Voice & Video Recording
- **Training Material** - Soft Copy Handbooks
- **Assignments** | Multiple Hands-on Exercises
- **Test Papers** - We provide **Practice Test** as part of our course to help you prepare for the actual certification exam.
- **Live Case Studies**

- **Live Projects** - Hands-on exercises and Project work. You will work on real time industry-oriented projects and assignments for each module to practice.
- **Key focus on Hands-on exercises and Project work.** You will work on real time industry-oriented projects.
- Faculty with more than **10+ Years of Experience** in the Industry.
- **Technical Resume Designing & Job Assistance:** With more than 100+ Clients across the Globe and we help learners to get a good job in their respective field. We also help learners with resume preparation.
- **Interview Q&A**
- **About Croma Campus Training Certificate:** Croma Campus will provide you with an industry-recognized (Certified by **ISO 9001:2015 & E-Cell IIT Jodhpur**) course completion certificate which has lifelong validity.
- **How I Unlock my Croma Campus Certificate:** Attend Complete Batch & Submit at least One Completed Project.

Course Content:

Module 1: Introduction

- Introducing TypeScript
- Different versions in TypeScript
- What's new in the latest version?
- Defining types in "JavaScript"
- Introduction to ASTs
- Defining types in Typescript
- Writing your first TypeScript function
- Configuring Your Environment
- Choosing your TypeScript editor
- Installing TypeScript

Module 2: Amazing Developer Experience in TypeScript

- Creating a TypeScript project
- Navigating a TypeScript Project
- Refactoring a TypeScript Project
- Our First TypeScript Application
- From index.html to TypeScript
- Running the TypeScript Compiler in Watch Mode

Module 3: Basic Type Constructs and Their Uses

- String and Number Types
- No Emit On TypeScript Error
- String Literal Types
- Union Types and Type Aliases
- Function Parameter and Return Types
- Void and Never Types
- Null and Undefined Types

- Describing values using Interfaces

Module 4: Functions in TypeScript

- Understanding Functions
- Specifying function parameter types
- Adding function overloads

Module 5: Classes

- Class Properties
- Static vs Instance Properties
- Class Methods
- Extends and Implements
- Access Modifiers

Module 6: Generics and Files

- Introducing generics
- Creating generic classes
- Applying generic constraints
- Introduction to “.d.ts” Files
- Definitely Typed and @types

Module 7: Modules

- Understanding the need for modules in JavaScript
- Organizing your code with namespaces
- Using namespaces to encapsulate private members
- Understanding the difference between internal and external modules
- Switching from internal to external modules
- Imports and exports
- Configuring compiled module output
- Loading external modules via web pack

Module 8: Decorators

- Implementing method decorators
- Implementing class decorators
- Implementing property decorators
- Implementing decorator factories

Module 9: Compiler Configuration in-depth

- The anatomy of the tsconfig.json
- Excluding files from our compilation
- Including files in our compilation
- Fine-tuning which files gets included
- Controlling when to output JavaScript

- Emitting declaration files
- Emitting source-maps
- Increasing the default type safety of the compiler
- Decreasing the default type safety of the compiler
- Allowing unreachable code and unused labels
- Using the compiler to enforce high quality source code
- Module scoping and the module option
- Module vs target and resolution strategy
- Configuring compiler CLI output
- Typescript's relationship with strict mode
- Advanced tweaks to emitted output
- Fine-tuning type acquisition
- Configuring TypeScript helper inclusion
- Advanced output controls
- React and JSX options (.tsx files)

Module 10: Advanced Type Constructs

- Typed this
- Type Guards
- Type Assertions
- Non-null Assertion Operator
- Intersection Types
- key of and Lookup Types
- Mapped Types
- All about objects

Module 11: Declaration Merging

- Merging interfaces
- Module augmentation

Module 12: Enums

- Declaring Enums
- Const and ambient Enums
- Exhaustively checks on Enums

Module 13: TypeScript Library Project

- Project initialization
- TypeScript configuration
- Tests setup
- Prettier TypeScript
- Multi-platform build
- Publishing our project
- Adding the first feature

- Ensuring code coverage
- Fine tuning our types and tests
- Project review and future

Module 14: Placement Guide

- Tips to Clear an Interview
- Common Interview questions and answers
- TypeScript Interview Questions and Answers
- Resume Building Guide
- Attempt for the related Certification Exam, if any
- Start Applying for Jobs