TypeScript compiler (tsc)

Typed JS compiler

CONCEPTS

tsc finds tsconfig.json by walking up from the current directory. Naming files on the command line makes it refuse to run unless you add --ignoreConfig.

tsconfig.json options + files
↓ tsc
Type check errors, exit code 1
↓ emit
JavaScript outDir

Type errors do not stop emit unless noEmitOnError is set. A non-zero exit code only tells you there were errors.

PROJECT SETUP

`tsc --init`
Create a tsconfig.json

`tsc`
Compile using the nearest tsconfig.json

`tsc -p <path>`
Compile a config file or directory

`tsc --noEmit`
Type-check without writing files

`tsc --watch`
Recompile when files change

`tsc --ignoreConfig <file>`
Compile given files, ignore tsconfig

`tsc --version`
Show the compiler version

`tsc --help --all`
List every compiler option

TSCONFIG KEYS

`"extends": "<file>"`
Inherit another config

`"include": ["src"]`
Files to compile

`"exclude": ["dist"]`
Files to skip

`"compilerOptions": {}`
Where all options below go

LANGUAGE & MODULES

`--target esnext`
Syntax level of emitted JS

`--module nodenext`
Module format for Node projects

`--module preserve`
Keep imports as written (bundlers)

`--moduleResolution bundler`
Resolution for bundler setups

`--lib <list>`
Built-in type libraries to include

`--types <list>`
Which @types packages to load

`--jsx react-jsx`
How JSX is compiled

`"paths": {"@/*": ["./src/*"]}`
Alias import prefixes

TYPE CHECKING

`--strict`
Enable all strict checks

`--noUncheckedIndexedAccess`
Indexed access may be undefined

`--skipLibCheck`
Skip checking .d.ts files

EMIT

`--outDir <dir>`
Write output files here

`--rootDir <dir>`
Root of the input tree

`--declaration`
Emit .d.ts files

`--sourceMap`
Emit .js.map files

`--verbatimModuleSyntax`
Keep imports/exports as written

PROJECTS & BUILDS

`tsc --build`
Build projects whose inputs changed

DEBUGGING

`tsc --showConfig`
Print the final merged config