# How to run a TypeScript Script

There are several ways to run a TypeScript script.

# Compile and Run with tsc (TypeScript Compiler)

Compile the TypeScript file:

tsc index.ts

This will generate a JavaScript file, typically index.js.

Run the generated JavaScript file:

node index.js

## **Using ts-node**

### Project setup

```
npm init -y
touch tsconfig.json
```

### tsconfig.json

```
{
  "compilerOptions": {
    "module": "commonjs",
    "target": "es6",
    "strict": true
  }
}
```

Make sure you have ts-node and typescript installed.

```
npm install ts-node typescript
```

### Run the script

```
npx ts-node ./index.ts
// Or
./node_modules/.bin/ts-node index.ts
```

## **Use tsx for Running TypeScript**

tsx is a modern, fast alternative to ts-node. It automatically runs TypeScript files without the need for compiling them first.

Install tsx:

npm install -g tsx

Run the TypeScript script:

tsx index.ts

## Use esbuild to Compile and Run

esbuild is an ultra-fast bundler and compiler. It can also execute TypeScript files.

Install esbuild:

```
npm install -g esbuild
```

Run the TypeScript file:

```
esbuild index.ts --bundle --outfile=out.js
&& node out.js
```

This compiles the TypeScript file and outputs a bundled out.js, which is then executed with Node.js.

## 5. Using Babel with TypeScript

Babel can also be used to transpile TypeScript into JavaScript, though it doesn't check types (it just strips them).

Install Babel along with TypeScript preset:

```
npm install --save-dev @babel/core
@babel/cli @babel/preset-typescript
```

Create a .babelrc file:

```
{
    "presets": ["@babel/preset-typescript"]
}
```

Then, compile and run the script:

```
npx babel index.ts --out-file index.js
node index.js
```

## Compile ts and run output file

```
npm i nodemon
npm i ts-node
nodemon --watch src/**/*.ts --exec 'ts-
node' src/index.ts

// --watch : Watches your TypeScript files
in the src directory.
   // --exec Runs the TypeScript files using
ts-node
   // index.ts: The entry file you want to
run.
```

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