📘 CHAPTER 2: TypeScript Setup — Installing, Compiling, and tsconfig.json

***1. What Is tsc?***

tsc is the TypeScript compiler. It takes your .ts files and converts them to .js files , the only format browsers understand.

🧠 Why?  
TypeScript adds types for development only. Browsers can't run TypeScript directly.

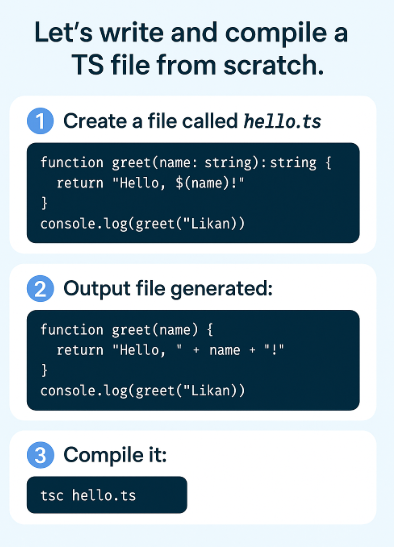
Analogy - tsc is like a translator, it takes a structured typed language (TS) and produces vanilla JavaScript (JS) for runtime.

***2. How to Install TypeScript***



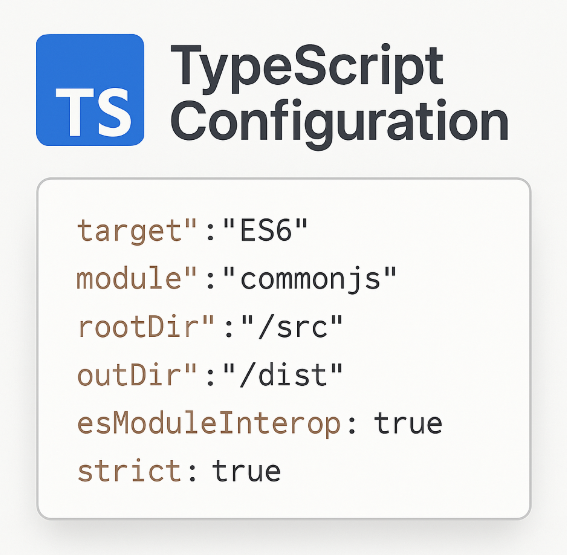
***3. Your First TypeScript File***

Let’s write and compile a TS file from scratch.



***🗂️ 4. What is tsconfig.json?***

This file configures how the compiler behaves for your project. To create it run this command tsc –init .This generates a tsconfig.json file like this -



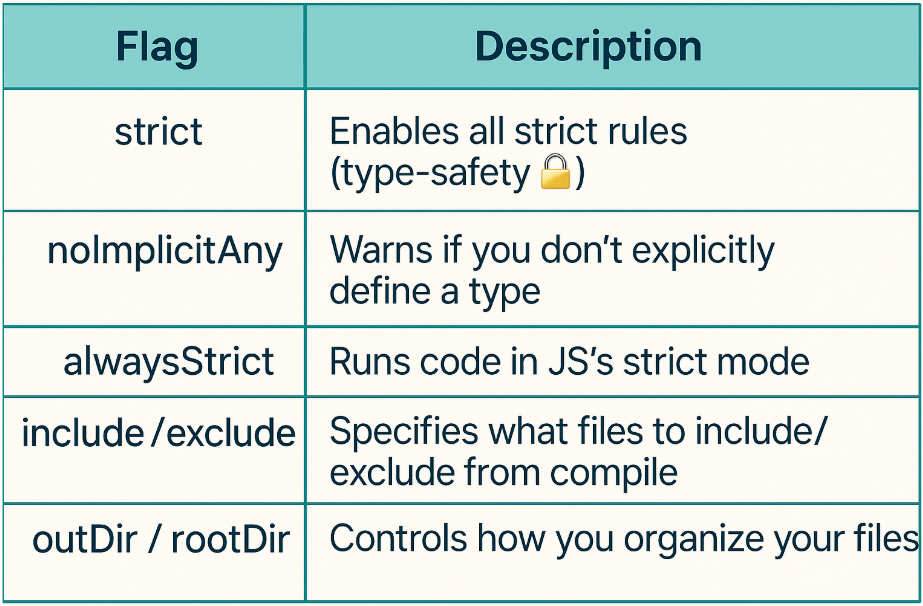
***Explanation of important fields -***

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

***5.Your First TypeScript Project Structure***



***6. Important Compiler Flags (in tsconfig.json)***



🧠 Best Practice for Interviews: Always turn on strict and noImplicitAny in real projects.

🧠 Interview Insights

***Q: What does the TypeScript compiler do?***

A: It checks your code for type errors and converts .ts into browser-compatible .js files.

***Q: What is tsconfig.json used for?***

A: It configures how your TypeScript project compiles: target version, output folder, strictness, etc.

***Q: Can the browser run TypeScript directly***?

A: ❌ No. Only JavaScript runs in the browser. You need to compile TS first.

📁 rootDir vs outDir in tsconfig.json

***rootDir (Source folder)***

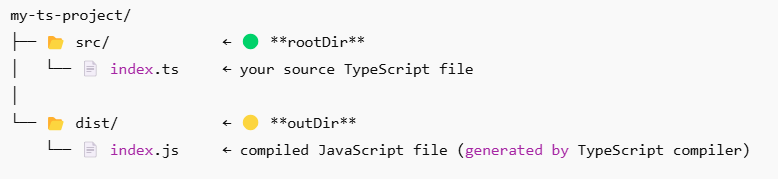
* This is where your TypeScript (.ts) source files live
* It tells the compiler: Start reading files from here

***outDir (Output folder)***

* This is where your compiled JavaScript (.js) files will go
* It tells the compiler: Place the compiled code here

***🔧 Example Setup***

Suppose you have this project structure

In your tsconfig.json

