

TypeScript Mastery

A Step-by-Step Learning Experience

Presented by Sir Ameen Alam

(Part 1)

Meet Ameen Alam

An accomplished professional with extensive expertise in Cloud Computing and DevOps. He holds multiple certifications, including AWS Developer Associate and Kubernetes Application Developer, and has over 8 years of experience in the IT, finance, and banking industry. Ameen is currently the Founder & CTO at Doblier Inc.



fb.com/SheikhAmeenAlam



linkedin.com/in/ameen-alam



instagram.com/sheikhameenalam



yt.com/ameenalamofficial



Meet Our Faculty

Whatsapp Channel: Latest News



<https://bit.ly/49werTR>

Books

Essential TypeScript 5

Third Edition by Adam Freeman (Author)

Press **F11** to exit full screen

ESSENTIAL TypeScript 5

THIRD EDITION

Adam Freeman

 MANNING



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Install Node.js, Git, TypeScript,
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Write a simple "Hello, World!"
program

04

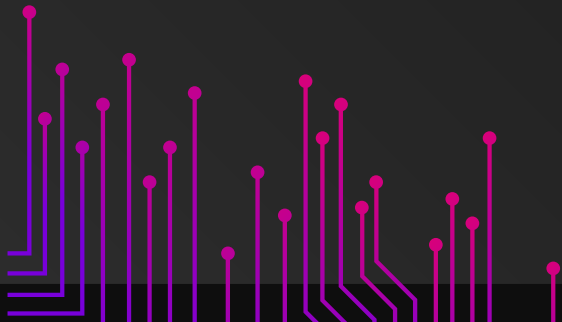
Hands-on Exercises

Getting Started Exercises with
TypeScript and Node.js

01

Introduction to TypeScript

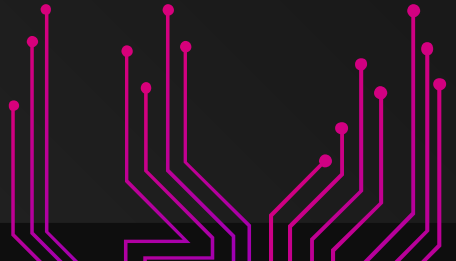
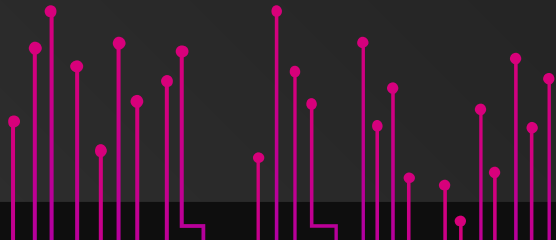
TypeScript as a statically typed superset of
JavaScript



Introduction

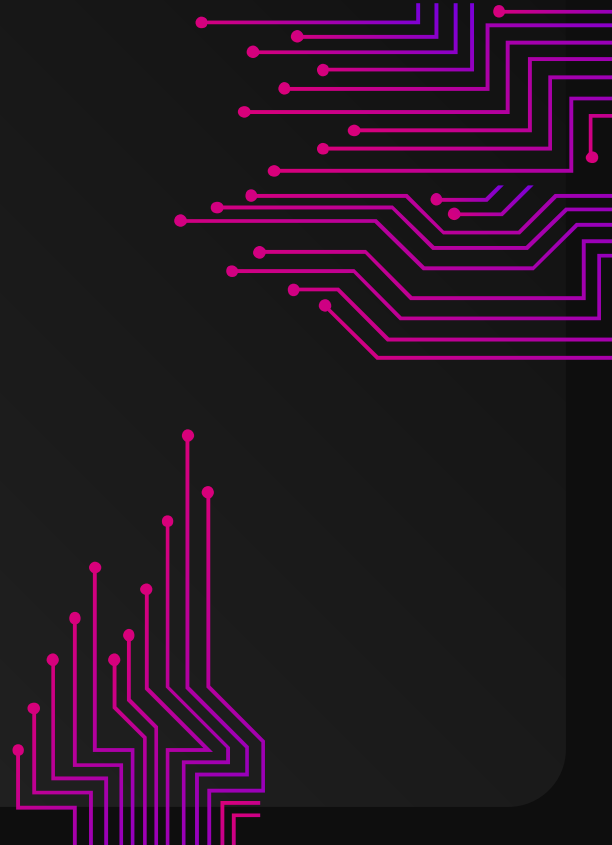
TypeScript is a superset of JavaScript that adds optional static typing to the language. This means that TypeScript code can be checked for errors during development, which can help to catch bugs early on.

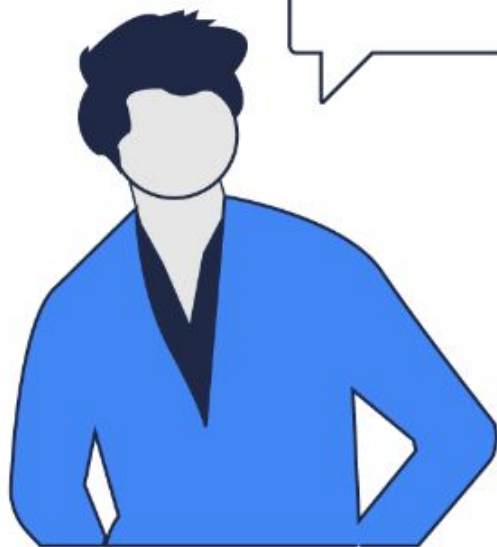
TypeScript also provides other features that make it a more powerful and versatile language than JavaScript, such as generics, interfaces, and type aliases.



Understanding Programming Languages

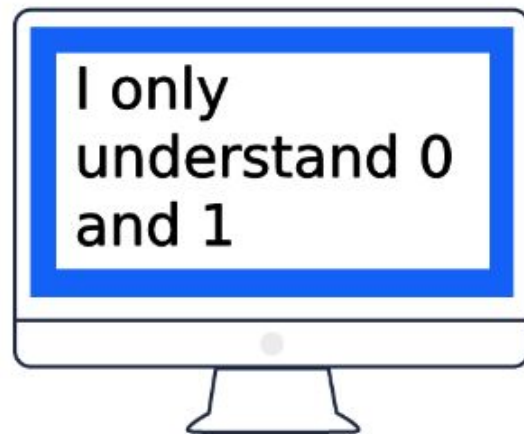
Imagine you're planning a trip. To communicate effectively with people in the places you'll visit, you might learn their languages. Similarly, programming languages are like human languages but for computers. They allow us to give instructions to computers and tell them what to do.





Hello

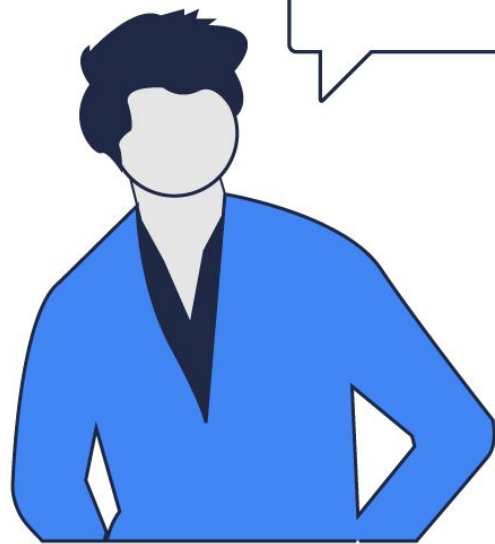
??????????





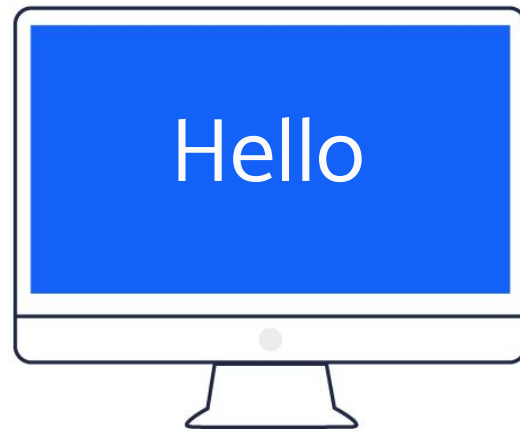
CODE IN
LANGUAGE OF
LOW LEVEL





Hello

10101100



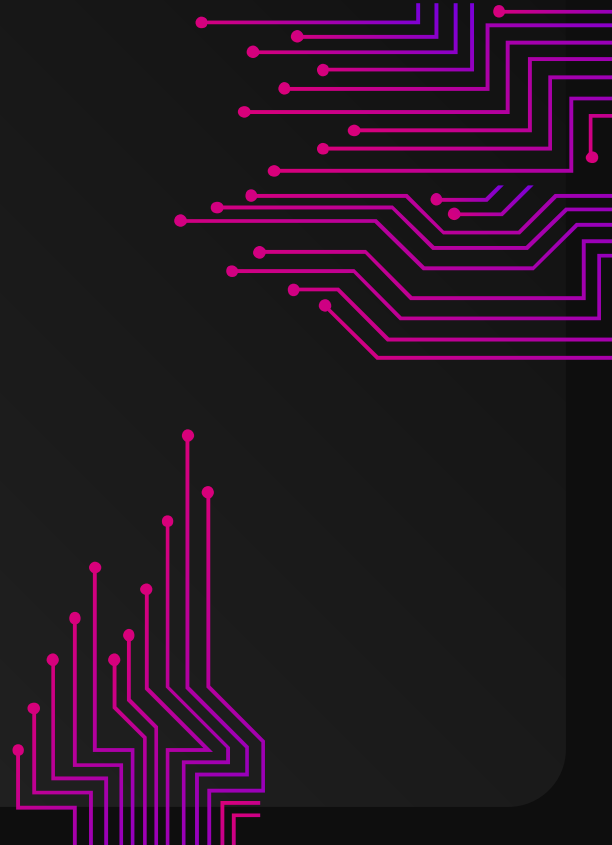


CODE IN
LANGUAGE OF
HIGH LEVEL



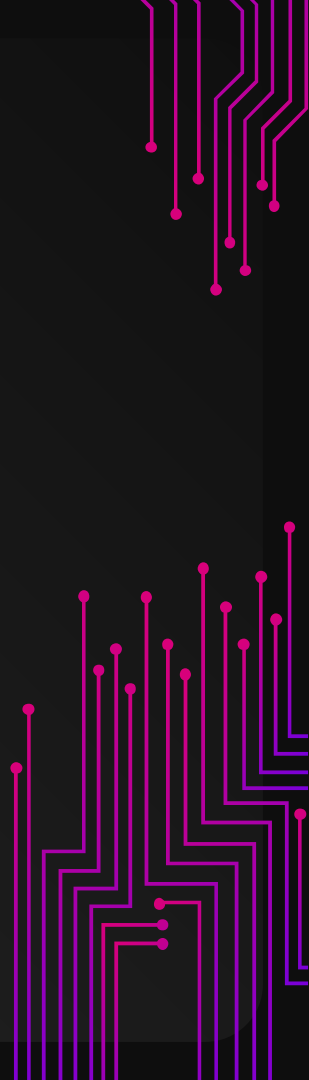
Why Learn Programming?

In today's digital world, programming skills are becoming increasingly valuable. Just like knowing English opens up opportunities in various fields, programming can lead to exciting careers in technology, web development, and software engineering. It also empowers you to create your own digital solutions and automate tasks.



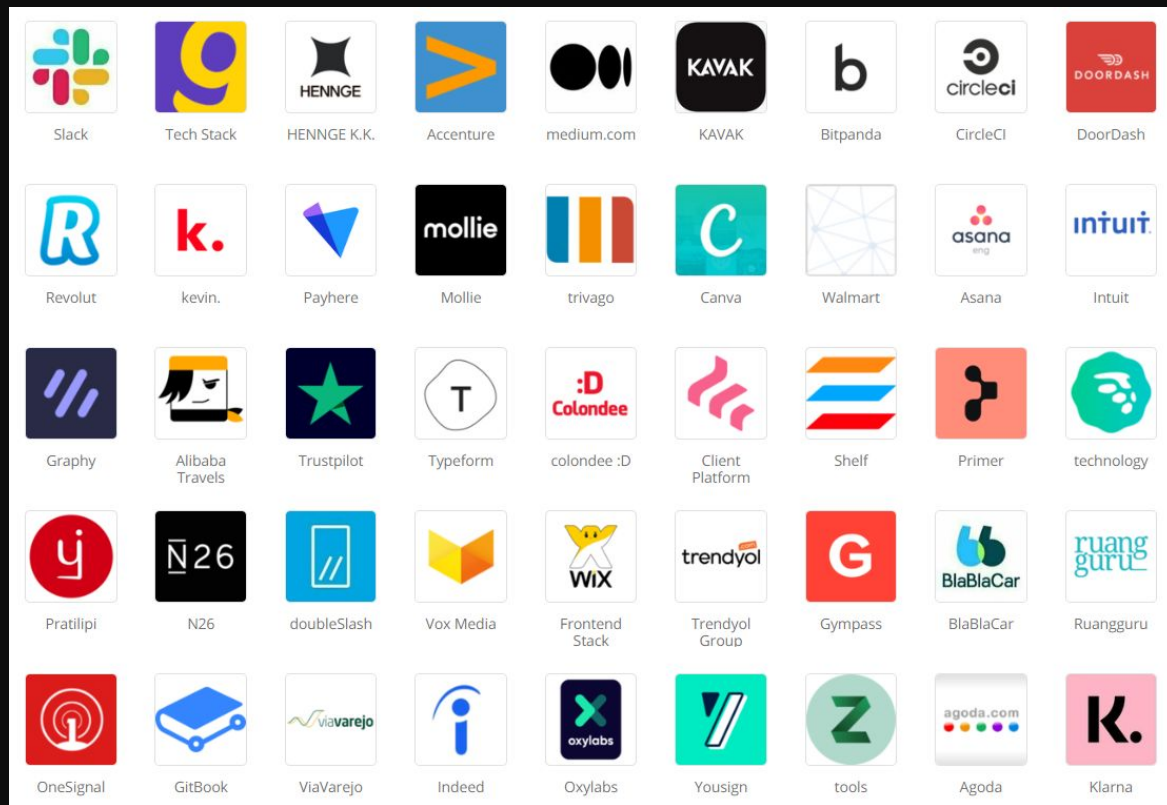
Why Choose TypeScript?

TypeScript is a powerful and versatile programming language that adds optional static typing to JavaScript, making it more reliable and maintainable. Imagine a chef using a recipe with precise measurements and instructions compared to one with vague guidelines. TypeScript is like the chef with a precise recipe, ensuring consistent and error-free outcomes.



Programming Languages Most In Demand In 2023

Before tackling the list of the most in-demand programming languages for 2023, let's see which ones ranked first in popularity in 2022. In a list of the top programming languages used by developers in 2022, released by [Statista analysts](#), JavaScript came in first. It was closely followed by HTML, then SQL, Python and TypeScript, in that order.



5302+ companies reportedly use TypeScript in their tech stacks

Chapter #1

Understanding

TypeScript

**TypeScript's headline
features are focused on
developer productivity**



Who is Developer?

Who is Developer?

Imagine you're building a house. You have architects who design the blueprint, engineers who understand how to make it structurally sound, and construction workers who put everything together. In the world of technology, developers play a similar role.

Who is Developer?

Developers are the builders of the digital world. They create the software, websites, apps, and other digital tools that we use every day.

They are the ones who?

Translate ideas into reality

Just like architects turn sketches into houses, developers turn ideas into working software. They use programming languages to write code that instructs computers what to do.

Solve problems with code

Whether it's making online shopping easier or helping us navigate a new city, developers use their skills to solve problems creatively and efficiently using code.

Connect people and information

From social media platforms to online banking systems, developers build the digital infrastructure that allows us to connect with each other and access information.

There are different types of developers, each with their own specializations

Front-end developers: They focus on the visual elements and user interface of websites and apps.

Back-end developers: They work behind the scenes, building the logic and server-side functionality of software.

Full-stack developers: They have expertise in both front-end and back-end development.

**You don't need a
specific degree to
be a developer**

HOW TO BE SUCCESSFUL AS A SELF TAUGHT DEVELOPER



TypeScript Productivity Features

Static types

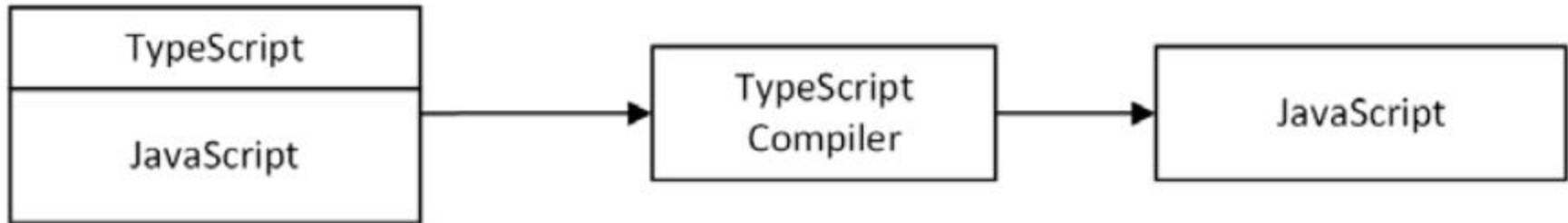
Access control keywords

Concise class constructor syntax

Help prevent common coding errors

TypeScript productivity features are applied to JavaScript code.

TypeScript package includes a compiler
Compiled file can be executed by a JavaScript runtime, such as **Node.js** or a **browser**



The TypeScript Transformation to JavaScript Code

TypeScript with more focus and applying its features just to the parts of your code that are especially complex or that you expect to cause problems.



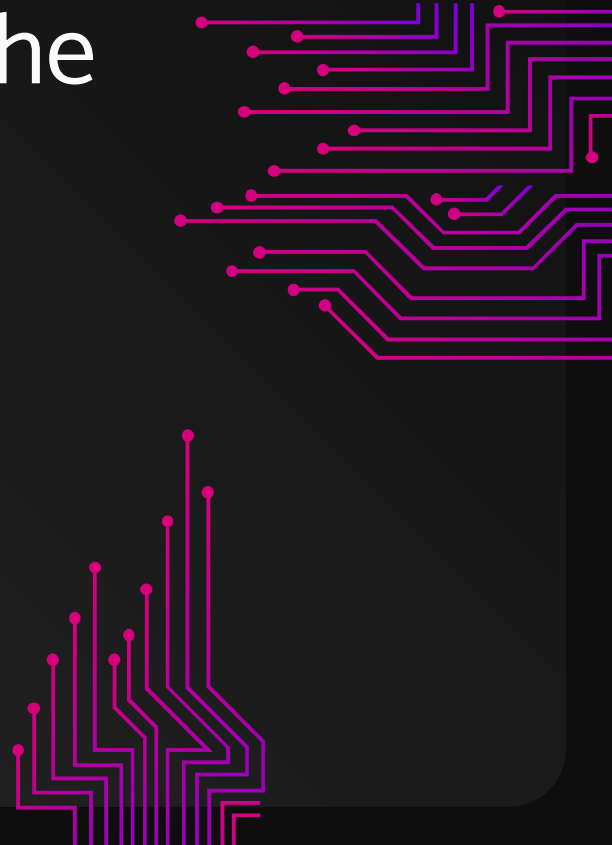
Some TypeScript features are implemented entirely by the compiler and leave no trace in the JavaScript code that is executed when the application runs.



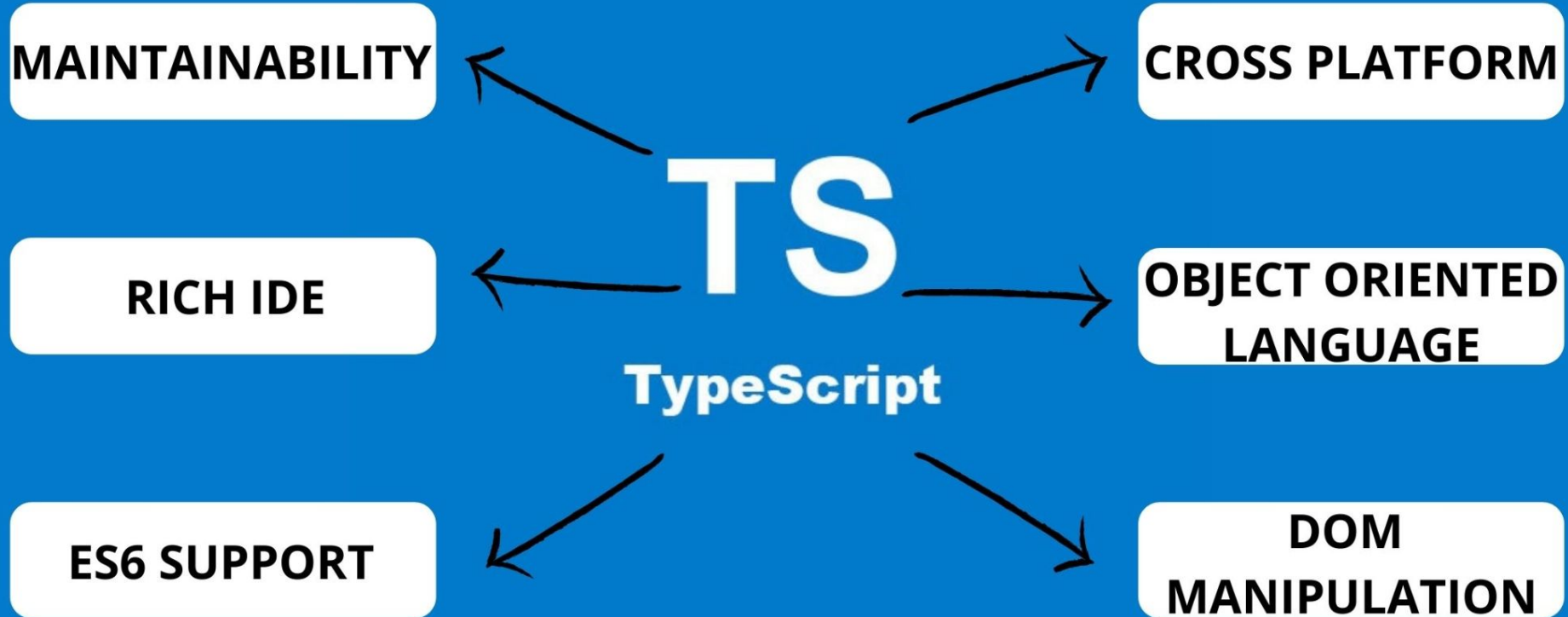
TypeScript enhances JavaScript, but the result is still JavaScript, and development in a TypeScript project is largely a process of writing JavaScript code.



Chapters 3 and 4 describe the
JavaScript features



WHY TYPESCRIPT



Why Use TypeScript?



- ✓ Compile-Time Errors
- ✓ Runs Everywhere
- ✓ Tooling Over Documentation
- ✓ Object-Oriented Programming
- ✓ Static typing

Why Choose TypeScript over JavaScript?



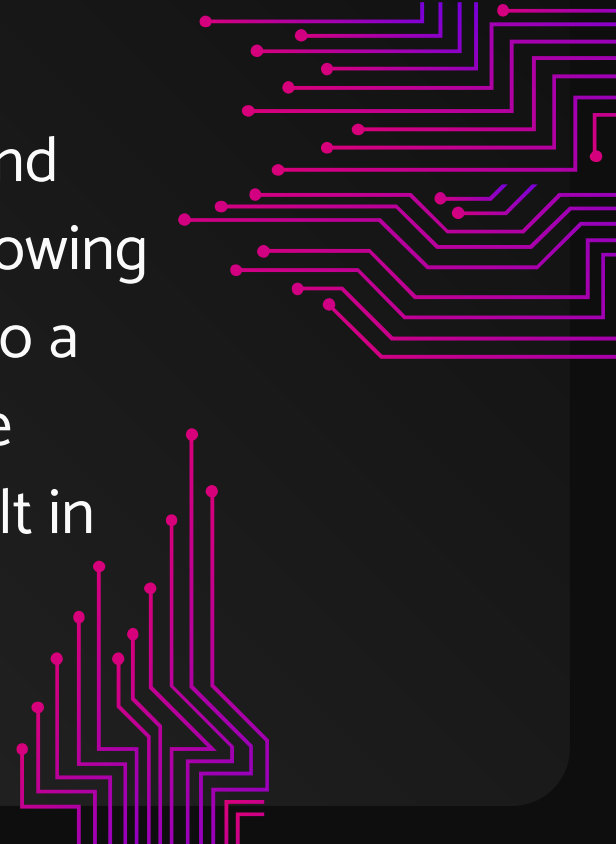
- ✓ Optional Static Typing
- ✓ IDE Support
- ✓ Object Orientation
- ✓ Readability
- ✓ Community Support



NEXT.js

Real-world Analogy: Baking a Cake

Think of baking a cake as an analogy for programming. The recipe is like the code, and the ingredients are like the data. Just as following a recipe with the correct ingredients leads to a delicious cake, using the right code with the appropriate data produces the desired result in programming.



Expectations



Reality

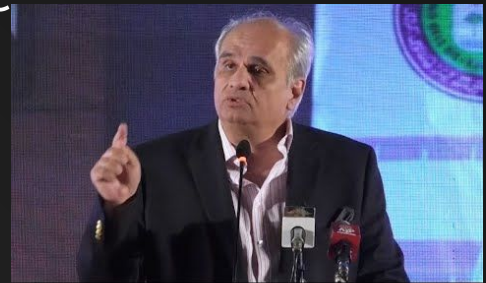


Sir Zia Khan

A beacon of knowledge and
innovation!

“TypeScript is a valuable tool for creating reliable and maintainable software applications. Its static typing, code clarity, and tooling support make it an excellent choice for beginners and experienced programmers alike. By learning TypeScript, you’ll open doors to exciting career opportunities and gain the power to create your own digital solutions.”

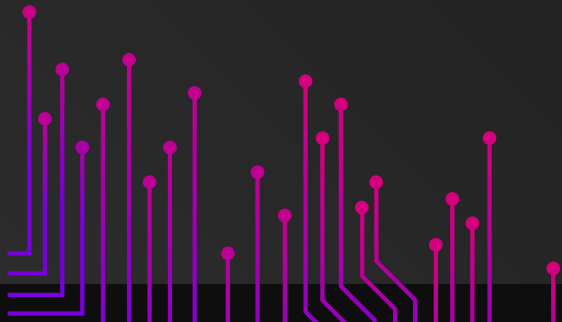
–Sir Zia Khan



02

Setting Up Your Environment

To develop TypeScript applications, you will need to install the following tools



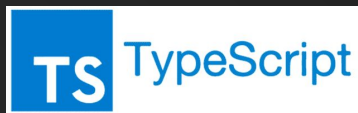
Setting Up Your Environment



Node.js is a runtime environment for JavaScript. It is used to run TypeScript code after it has been compiled to JavaScript.



Distributed version control system designed to handle everything from small to very large projects with speed and efficiency.



TypeScript is the compiler that converts TypeScript code to JavaScript.



Visual Studio Code

VS Code is a popular code editor that has excellent support for TypeScript.

Chapter #2

Your First TypeScript Application

NodeJS Installation

Install Node.js

Download the Node.js installer from the official website (<https://nodejs.org/en>) and run the installer.

Node.js® is an open-source, cross-platform JavaScript runtime environment.

Download Node.js®

20.10.0 LTS

Recommended For Most Users

21.2.0 Current

Latest Features

[Other Downloads](#) | [Changelog](#) | [API Docs](#)

[Other Downloads](#) | [Changelog](#) | [API Docs](#)

For information about supported releases, see the [release schedule](#).

Welcome to the Node.js Setup Wizard



The Setup Wizard will install Node.js on your computer.

Back

Next

Cancel

Installing Node.js



Please wait while the Setup Wizard installs Node.js.

Status: Generating script operations for action:



Back

Next

Cancel

Completed the Node.js Setup Wizard



Click the Finish button to exit the Setup Wizard.

Node.js has been successfully installed.

Back

Finish

Cancel



cmd



All

Work

Apps

Documents

Web

Settings

People



GCI Global Ltd



Best match



Command Prompt

App

Search work and web



cmd - See work and web results



cmd ipconfig



cmd commands



cmdb



cmdr



cmdcd



cmd hostname



Apps



Node.js command prompt



Install Additional Tools for Node.js



Command Prompt

App



Open



Run as administrator



Open file location



Pin to Start



Pin to taskbar



Command Prompt



Microsoft Windows [Version 10.0.22621.2715]
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C:\Users\AmeenAlam>node -v
v20.10.0

C:\Users\AmeenAlam>npm -v
10.2.3

C:\Users\AmeenAlam>|

Git Installation



Git 2.43.0 Setup



Information

Please read the following important information before continuing.



When you are ready to continue with Setup, click Next.

GNU General Public License

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place - Suite 330, Boston, MA 02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change

<https://gitforwindows.org/>

Next

Cancel



Git 2.43.0 Setup



Installing

Please wait while Setup installs Git on your computer.



Extracting files...

C:\Program Files\Git\mingw64\bin\git-lfs.exe



<https://gitforwindows.org/>

Cancel

Completing the Git Setup Wizard



Setup has finished installing Git on your computer. The application may be launched by selecting the installed shortcuts.

Click Finish to exit Setup.

☐ Launch Git Bash

☒ View Release Notes

Finish



Administrator: Command Pro



Microsoft Windows [Version 10.0.22621.2715]
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```
C:\Users\Administrator>git --version  
git version 2.43.0.windows.1
```

```
C:\Users\Administrator>|
```

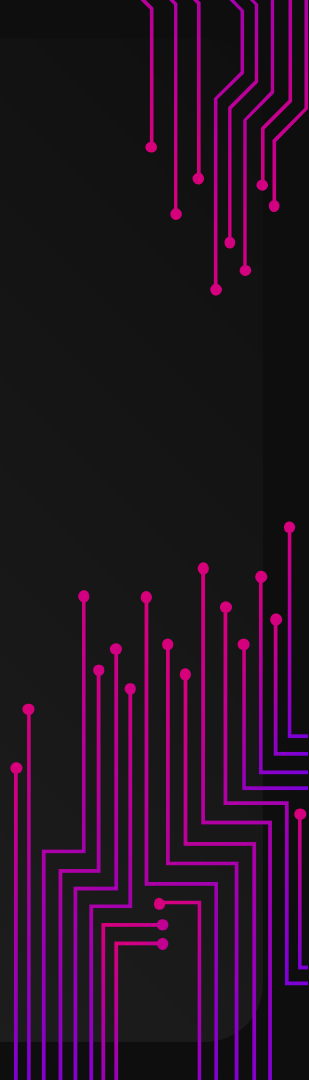
TypeScript Installation

Install TypeScript

Open a command prompt or terminal and run the following command:

```
npm install --global typescript@5.0.2
```

```
tsc --version
```

A decorative graphic on the right side of the slide, consisting of a series of vertical and horizontal lines in a light blue color, resembling a circuit board or a stylized 'E' shape.



Administrator: Command Pro



Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

```
C:\Users\Administrator>git --version  
git version 2.43.0.windows.1
```

```
C:\Users\Administrator>npm install --global typescript@5.0.2
```

added 1 package in 2s

npm notice

npm notice New patch version of npm available! 10.2.3 -> 10.2.4

npm notice Changelog: <https://github.com/npm/cli/releases/tag/v10.2.4>

npm notice Run `npm install -g npm@10.2.4` to update!

npm notice

```
C:\Users\Administrator>
```



Administrator: C:\WINDOWS' X



Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Administrator>tsc -v
Version 5.3.2

C:\Users\Administrator>|

VS Code

Installation

Install VS Code

Download VS Code from the official website (<https://code.visualstudio.com/download>) and install it.

[Version 1.84](#) is now available! Read about the new features and fixes from October.

Download Visual Studio Code

Free and built on open source. Integrated Git, debugging and extensions.



↓ Windows

Windows 10, 11

User Installer
System Installer
.zip
CLI

x64 Arm64
x64 Arm64
x64 Arm64
x64 Arm64



↓ .deb

Debian, Ubuntu

↓ .rpm

Red Hat, Fedora, SUSE

.deb x64 Arm32 Arm64
.rpm x64 Arm32 Arm64
.tar.gz x64 Arm32 Arm64
Snap Snap Store
CLI x64 Arm32 Arm64



↓ Mac

macOS 10.15+

.zip Intel chip Apple silicon Universal
CLI Intel chip Apple silicon

Select Additional Tasks

Which additional tasks should be performed?



Select the additional tasks you would like Setup to perform while installing Visual Studio Code, then click Next.

Additional icons:

☐ Create a desktop icon

Other:

- ☒ Add "Open with Code" action to Windows Explorer file context menu
- ☒ Add "Open with Code" action to Windows Explorer directory context menu
- ☒ Register Code as an editor for supported file types
- ☒ Add to PATH (requires shell restart)

< Back

Next >

Cancel

Setup - Microsoft Visual Studio Code (User)



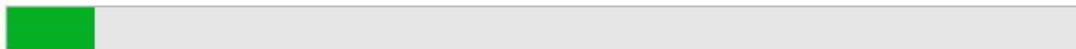
Installing

Please wait while Setup installs Visual Studio Code on your computer.



Extracting files...

C:\Users\AmeenAlam\AppData\Local\Programs\Microsoft VS Code\Code.exe



Cancel

Completing the Visual Studio Code Setup Wizard

Setup has finished installing Visual Studio Code on your computer. The application may be launched by selecting the installed shortcuts.

Click Finish to exit Setup.



☒ Launch Visual Studio Code

Finish



Welcome ×



< Welcome



Get Started with VS Code

Discover the best customizations to make VS Code yours.



Personalize your VS Code

Keep your essential VS Code customizations backed up and updated across all your devices.

[Backup and Sync Settings](#)

Choose the look you want



One shortcut to access everything



Rich support for all your languages

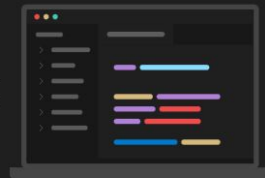


Open up your code



Mark Done

Next Section →



0 0 0 0

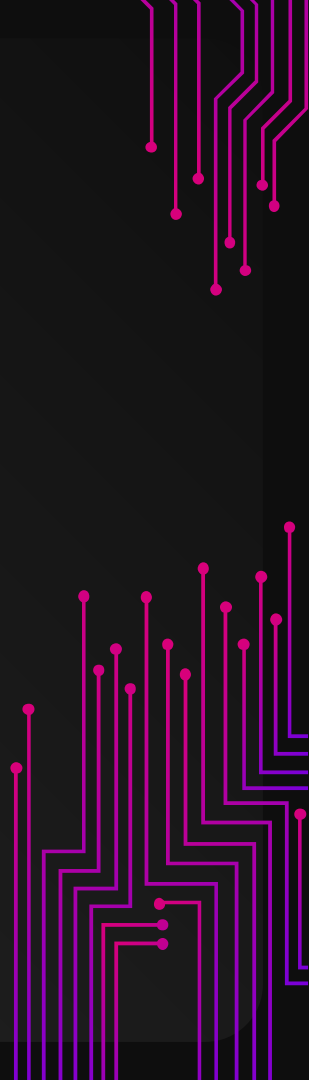
Code collects usage data. Read our [privacy statement](#) and learn how to [opt out](#).



TypeScript Extension

Install the TypeScript extension

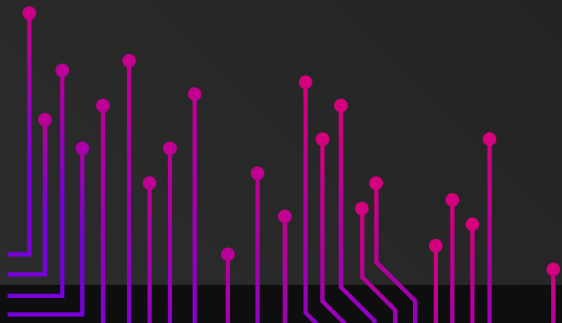
Open VS Code and go to Extensions > Search Extensions. Search for TypeScript and install the TypeScript: JavaScript with Language Features extension.



03

Your First TypeScript Program

Let's write a simple "Hello, World!" program in TypeScript.



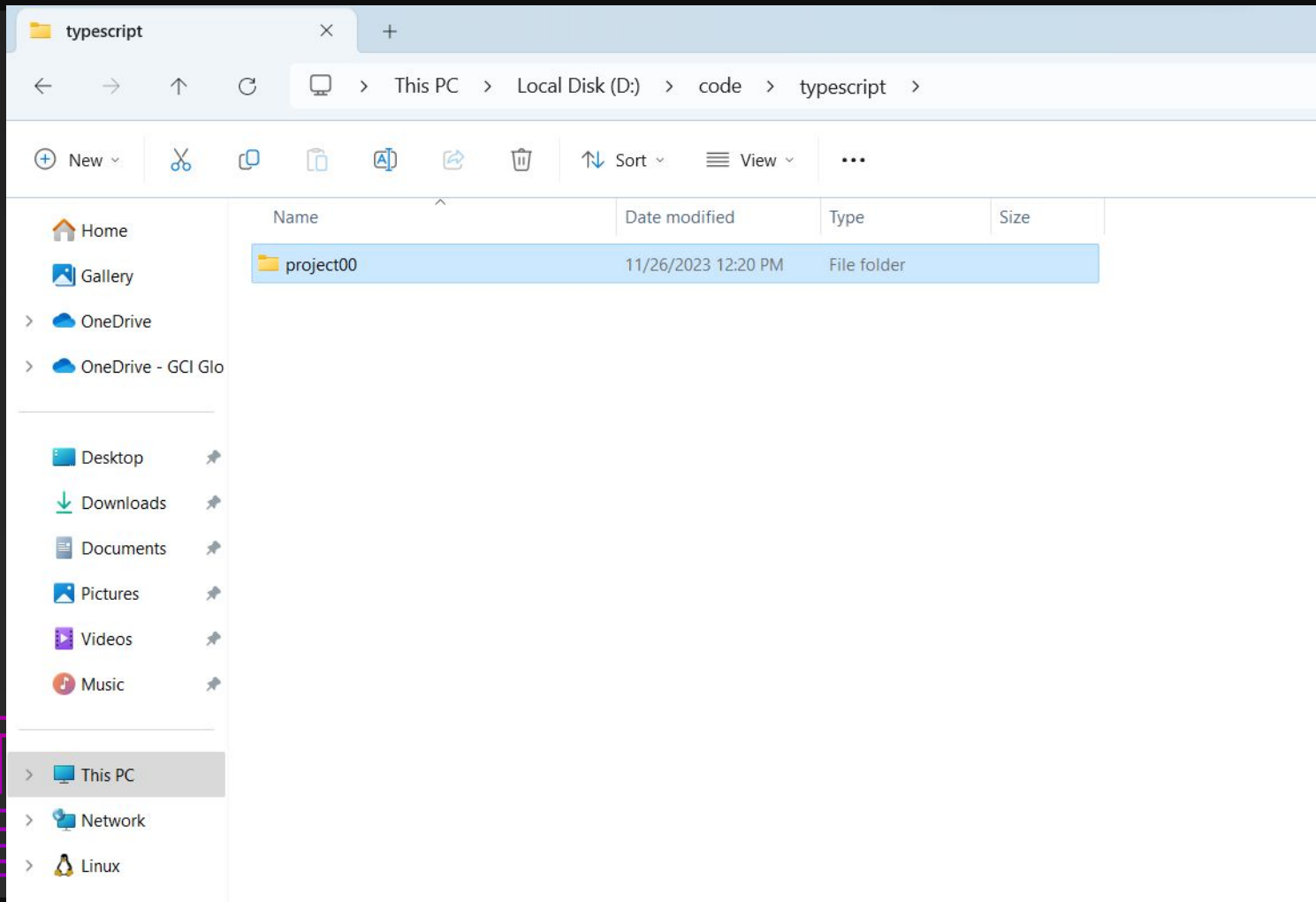
Hello World

Your First TypeScript Program

Let's write a simple "Hello, World!" program in TypeScript.

```
console.log("Hello, World!");
```

This code will print the text "Hello, World!" to the console.



File Edit Selection View Go Run Terminal Help

Search



EXPLORER

NO FOLDER OPENED

You have not yet opened a folder.

Open Folder

To Open Folder

CTRL + K CTRL + O

Open Folder

< > > Ameen Alam >

Search Ameen Alam

Organize

New folder



Home

> OneDrive

> OneDrive - GCI

Desktop

Downloads

Documents

Pictures



.vscode



Contacts



Desktop



Documents



Downloads



Favorites



Links



Music



OneDrive



OpenVPN



Pictures



Saved Games



Searches



Videos

Folder: D:\code\typescript\project00

Select Folder

Cancel



EXPLORER



▼ PROJECT00



> OUTLINE

> TIMELINE



0 0 0 0



Show All Commands **Ctrl** + **Shift** + **P**

Go to File **Ctrl** + **P**

Find in Files **Ctrl** + **Shift** + **F**

Toggle Full Screen **F11**

Show Settings **Ctrl** + **,**



File Edit Selection View Go Run Terminal Help



project00



EXPLORER



PROJECT00



TS main.ts

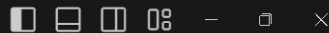




File Edit Selection View Go ...



project00



EXPLORER



PROJECT00



TS main.ts



> OUTLINE

> TIMELINE



0 0 0 0

TS main.ts



TS main.ts

```
1 console.log("Hello, World!");
```

Ln 1, Col 30 Spaces: 4 UTF-8 CRLF {} TypeScript

Compile this code to JavaScript

To compile this code to JavaScript, open a command prompt or terminal and navigate to the directory where you saved the TypeScript file. Then, run the following command:

```
tsc main.ts
```



File Edit Selection View Go Run

Terminal Help



project00



EXPLORER

PROJECT00



TS main.ts



New Terminal **Ctrl+Shift+`**

Split Terminal **Ctrl+Shift+5**

Run Task...

Run Build Task... **Ctrl+Shift+B**

Run Active File

Run Selected Text

Show Running Tasks...

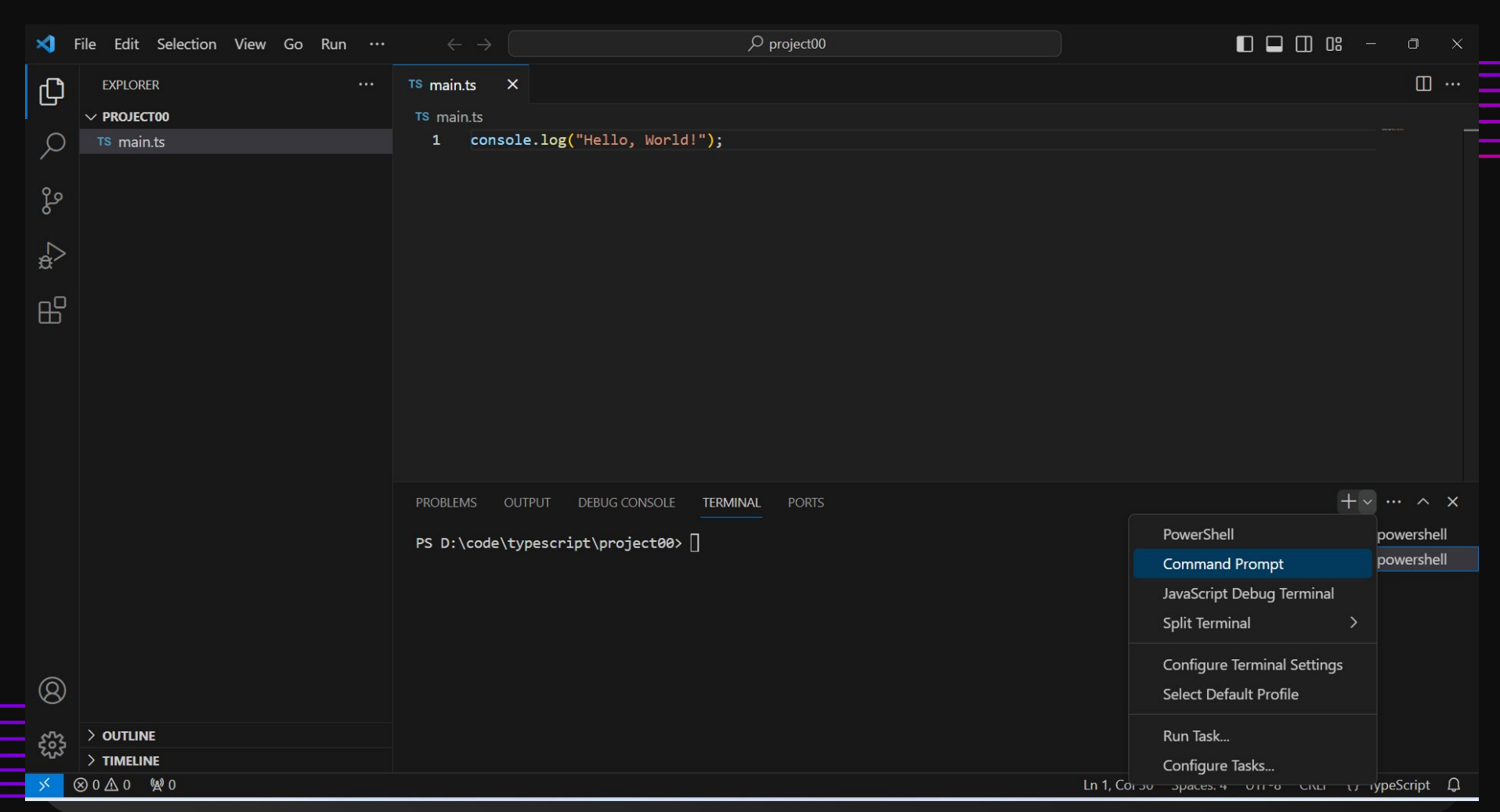
Restart Running Task...

Terminate Task...

Configure Tasks...

Configure Default Build Task...

ld!");



EXPLORER

PROJECT00

TS main.ts

TS main.ts

TS main.ts

```
1 console.log("Hello, World!");
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

D:\code\typescript\project00>tsc main.ts

powershell

powershell

cmd

OUTLINE

TIMELINE

FileEditSelectionViewGoRun...project00

EXPLORER

PROJECT00

JS main.js

TS main.ts

TS main.ts

1 console.log("Hello, World!");

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

D:\code\typescript\project00>tsc main.ts

D:\code\typescript\project00>

+

^

...

^

x

powershell

powershell

cmd

<

0 0 0

Ln 1, Col 30

Spaces: 4

UTF-8

CRLF

{ }

TypeScript

EXPLORER

PROJECT00

- JS main.js
- TS main.ts

TS main.ts JS main.js

JS main.js

```
1 console.log("Hello, World!");
2
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

D:\code\typescript\project00>tsc main.ts

D:\code\typescript\project00>

powershell

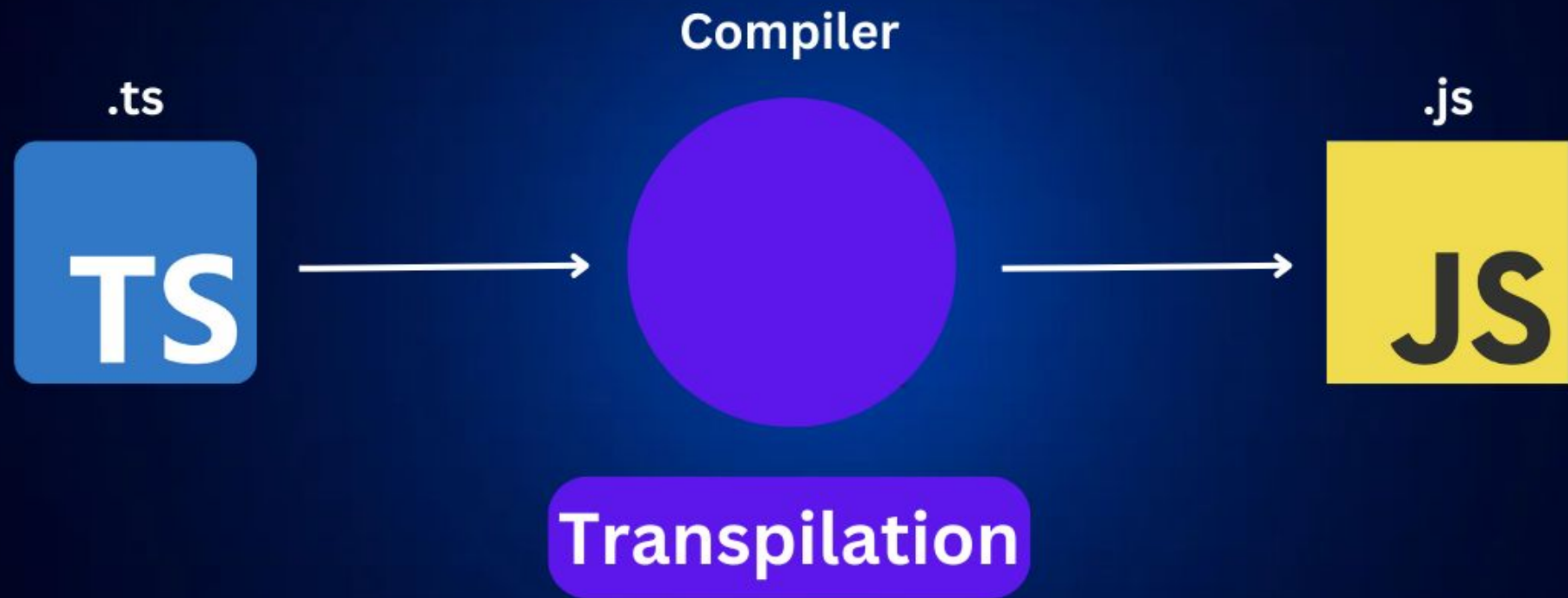
powershell

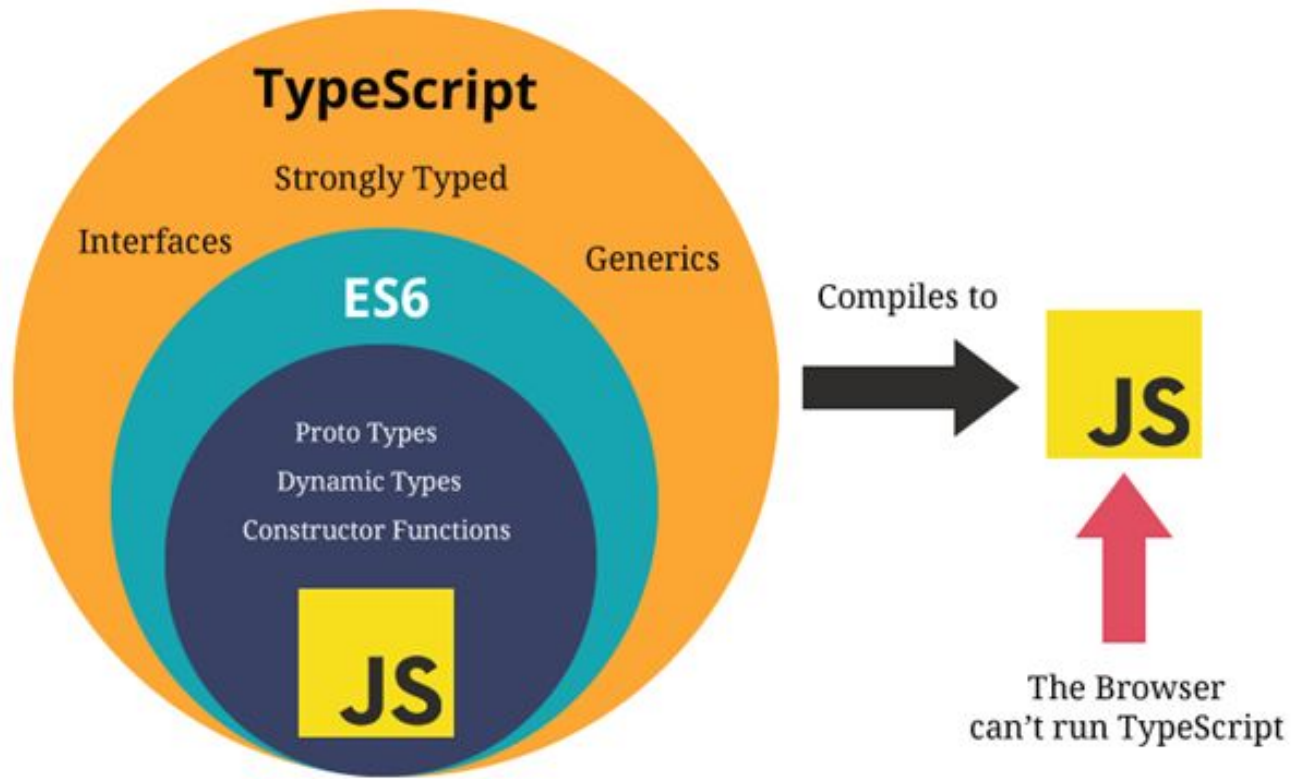
cmd

OUTLINE
TIMELINE

< 0 0 0

Ln 2, Col 1 Spaces: 4 UTF-8 LF {} JavaScript





Compile this code to JavaScript

This will create a JavaScript file named `main.js` in the same directory. You can then run this JavaScript file using Node.js:

```
node main.js
```

This will print the text "Hello, World!" to the console.

Congratulations

Visual Studio Code interface showing a successful TypeScript compilation and execution.

EXPLORER

- PROJECT00
 - JS main.js
 - TS main.ts

main.ts

```
1 console.log("Hello, World!");
```

main.js

```
1 console.log("Hello, World!");
```

TERMINAL

```
Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

D:\code\typescript\project00>tsc main.ts

D:\code\typescript\project00>node main.js
Hello, World!

D:\code\typescript\project00>
```

CONGRATULATIONS

Ln 2, Col 1 Spaces: 4 UTF-8 LF {} JavaScript



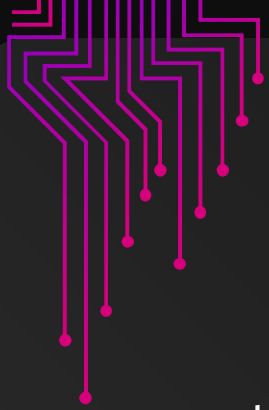
I'M A Programmer

I'M A Programmer



Problem-Solving Power15

We'll dedicate 15 minutes to a focused
question-and-answer session.



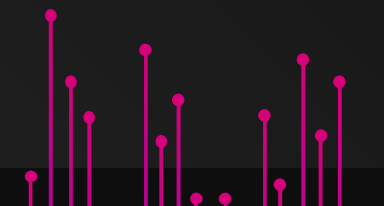
Problem-Solving Power15

Bring your specific problems and questions to the table.

Collaborate with fellow students and learn from their inquiries.

Receive personalized guidance and feedback from experienced faculty.

Gain valuable insights and sharpen your troubleshooting skills.





Benefits of attending

Boost your problem-solving

expertise: Develop a structured approach to analyzing and solving programming challenges.

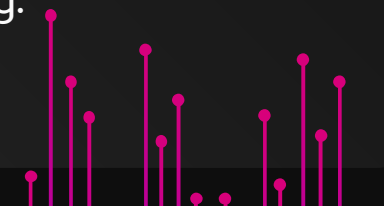
Sharpen your coding skills:

Practice writing efficient and effective code through engaging exercises.

Enhance your

understanding: Gain deeper insights into key programming concepts and applications.

Build your confidence: Feel empowered to tackle complex tasks and independent learning.



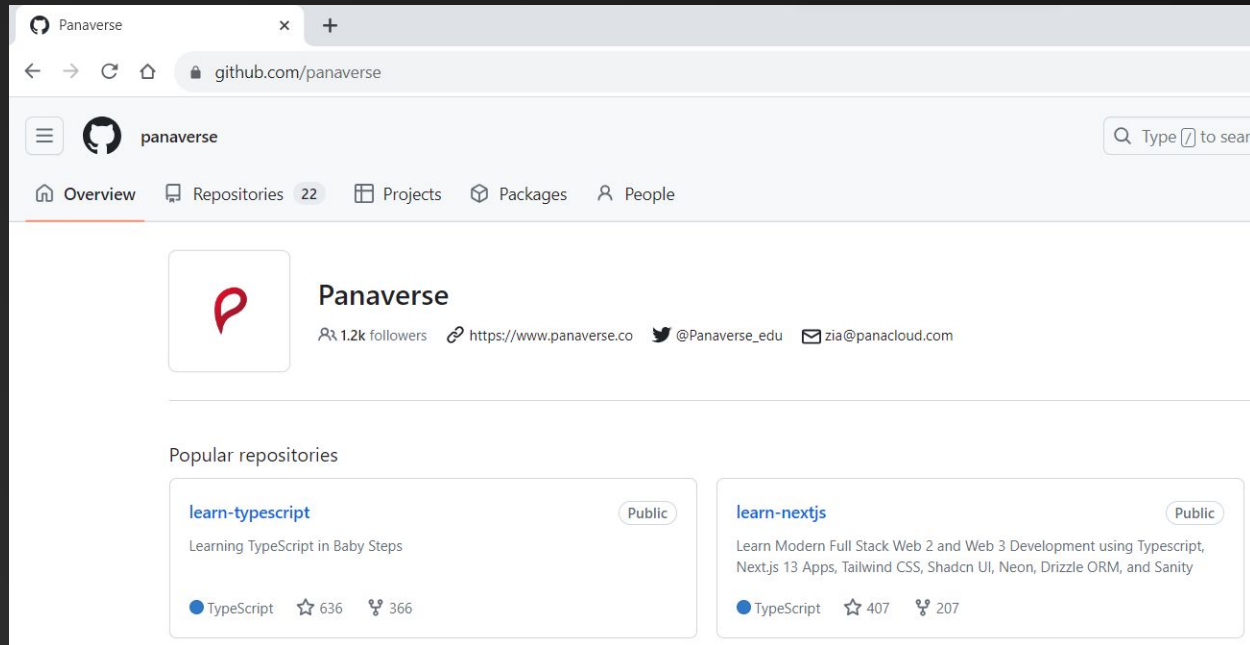


PanaVerse

Learn TypeScript

Learn TypeScript 5.0+ in Baby Steps

<https://github.com/panaverse/learn-typescript>



The screenshot shows the GitHub profile page for Panaverse. The page includes a header with the Panaverse logo and name, a search bar, and navigation tabs for Overview, Repositories (22), Projects, Packages, and People. The main content area displays the Panaverse profile with a red logo, 1.2k followers, and links to the website, Twitter, and email. Below the profile, the 'Popular repositories' section lists two repositories: 'learn-typescript' and 'learn-nextjs'. Both repositories are marked as 'Public' and show their respective star and fork counts.

Repository	Stars	Forks
learn-typescript	636	366
learn-nextjs	407	207

learn-typescript Public

Watch 101

Fork 366

Star 636

master

2 branches 0 tags

Go to file

Add file

<> Code



ziaukhan add node projects

fcd5595 on Aug 24 204 commits

NODE_PROJECTS	add node projects	3 months ago
step00_helloworld	update	last year
step00a_json_objects	add links	last year
step00b_syntax_error	update step 00	last year
step00c_type_error	update step 00	last year
step00d_assignability_error	update step 00	last year
step01_strong_typing	add step 00 a b c	last year
step02_const_let	update step 02	last year
step03a_modules	add step 03	last year
step03b_native_ECMAScript_modules	add video	last year
step03c_import_inquirer_ECMAScript...	add 3c	last year
step03d_chalk	add firequiz	last year

About

Learning TypeScript in Baby Steps

[typescript](#) [learning-typescript](#)

Readme

MIT license

Activity

636 stars

101 watching

366 forks

Report repository

Releases

No releases published

Packages

No packages published

📁 Files

🔗 master + 🔍

🔍 Go to file t

- > 📁 NODE_PROJECTS
- 📁 step00_helloworld
 - 📄 .gitignore
 - 📄 app.ts
 - 📄 package-lock.json
 - 📄 package.json
 - 📄 readme.md
 - 📄 tsconfig.json
- > 📁 step00a_json_objects
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- > 📁 step00d_assignability_error
- > 📁 step01_strong_typing
- > 📁 step02_const_let
- > 📁 step03a_modules

learn-typescript / step00_helloworld / 📄

Add file ▾ ⋮

👤 ziaukhan update 4335518 · last year 🕒 History

Name	Last commit message	Last commit date
📁 ..		
📄 .gitignore	update	last year
📄 app.ts	add step 00 a b c	last year
📄 package-lock.json	update	last year
📄 package.json	update	last year
📄 readme.md	update	last year
📄 tsconfig.json	updated helloworld steps	last year

readme.md ✎

[For the latest docs](#)

Hello World Steps:

Files

master + Q

Go to file t

- > NODE_PROJECTS
- > step00_helloworld
 - .gitignore
 - app.ts
 - package-lock.json
 - package.json
 - readme.md
 - tsconfig.json
- > step00a_json_objects
- > step00b_syntax_error
- > step00c_type_error
- > step00d_assignability_error
- > step01_strong_typing
- > step02_const_let
- > step03a_modules

learn-typescript / step00_helloworld / app.ts

ziaukhan add step 00 a b c

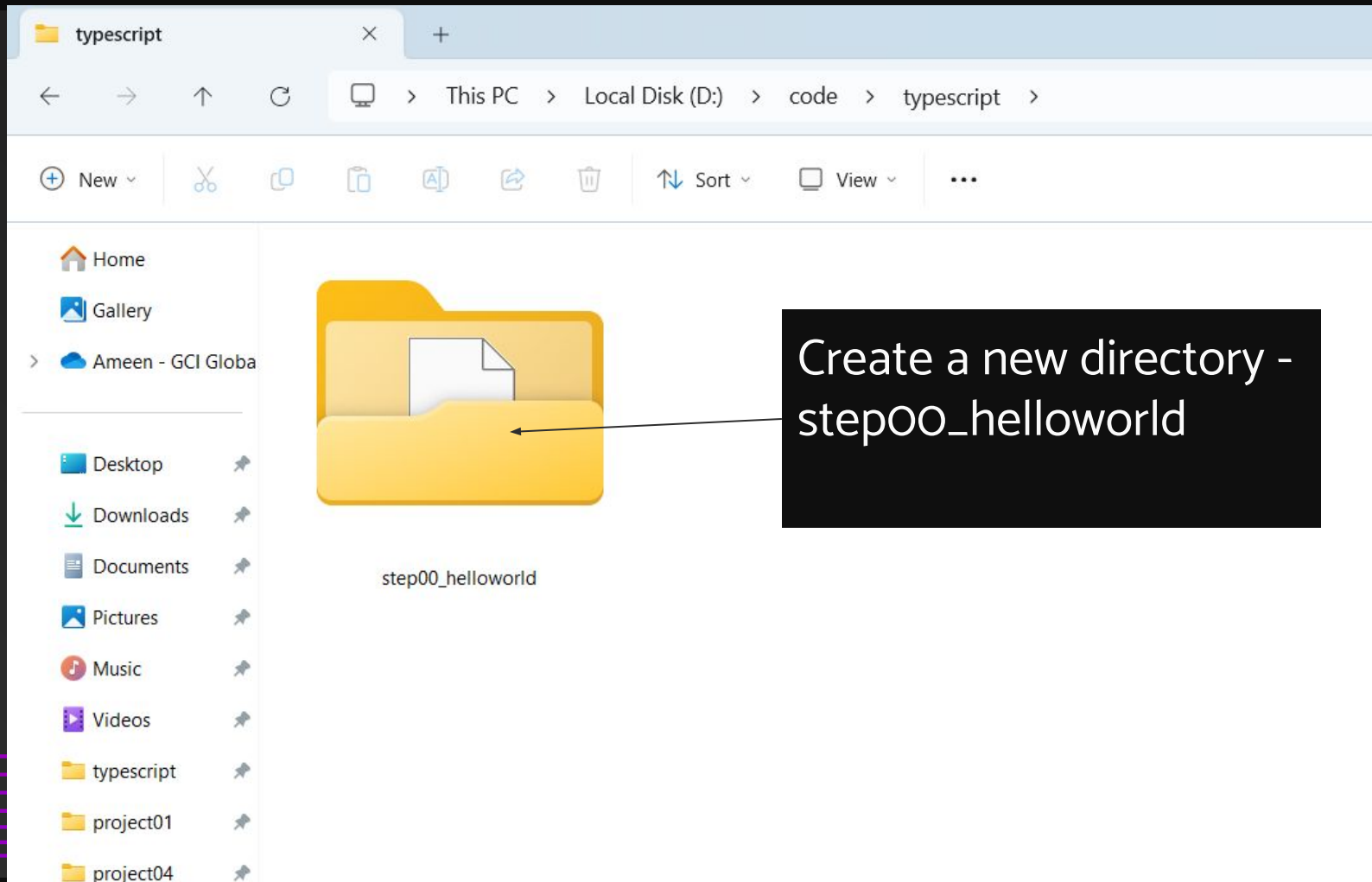
538041f · last year History

Code Blame 4 lines (3 loc) · 147 Bytes

Raw Copy Download Edit View

```
1 let message = "Hello World";// Infering Types,  
2 //take your cursor on the variable name  
3 console.log(message);  
4
```

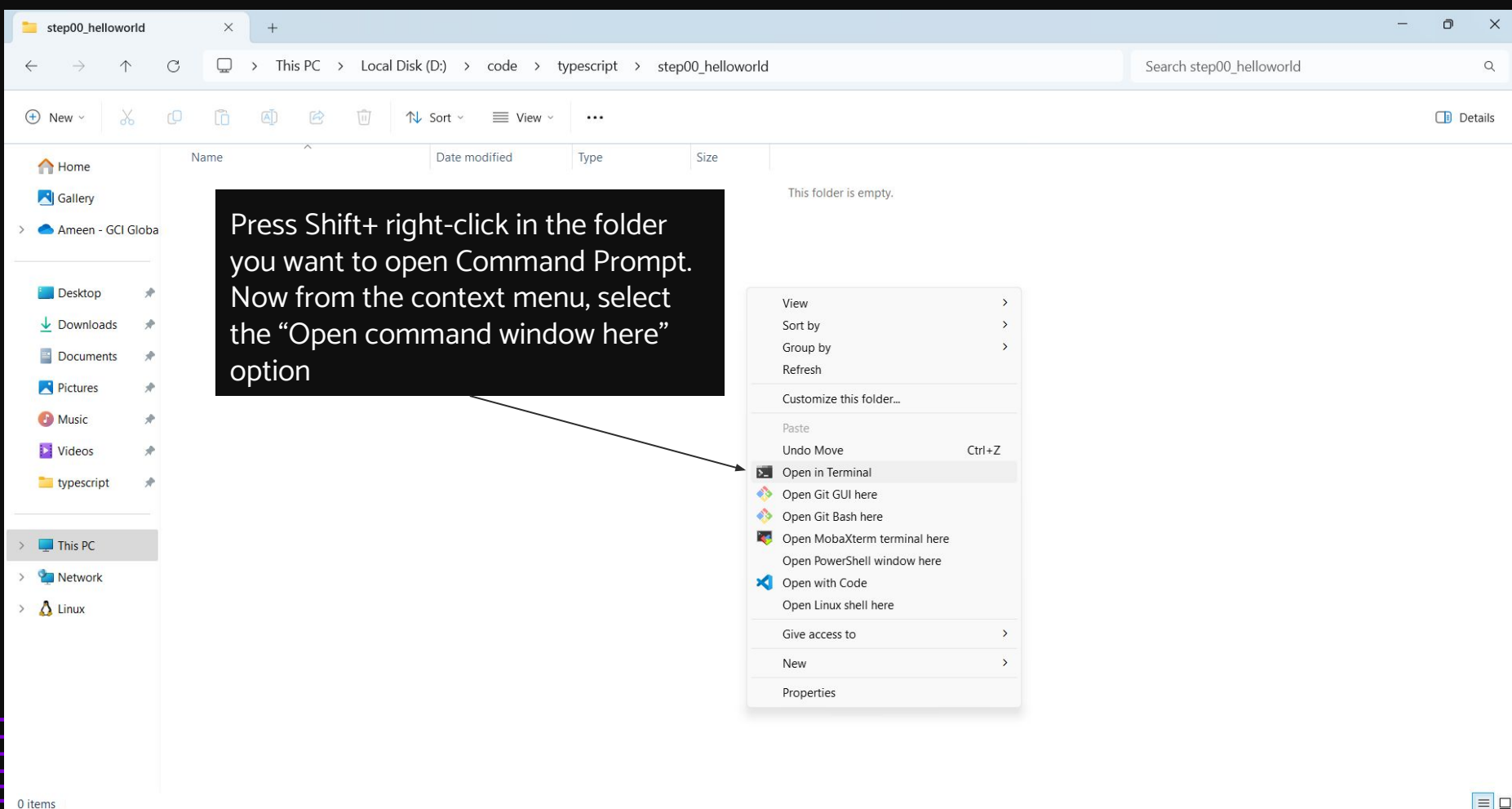
Step00_helloworld

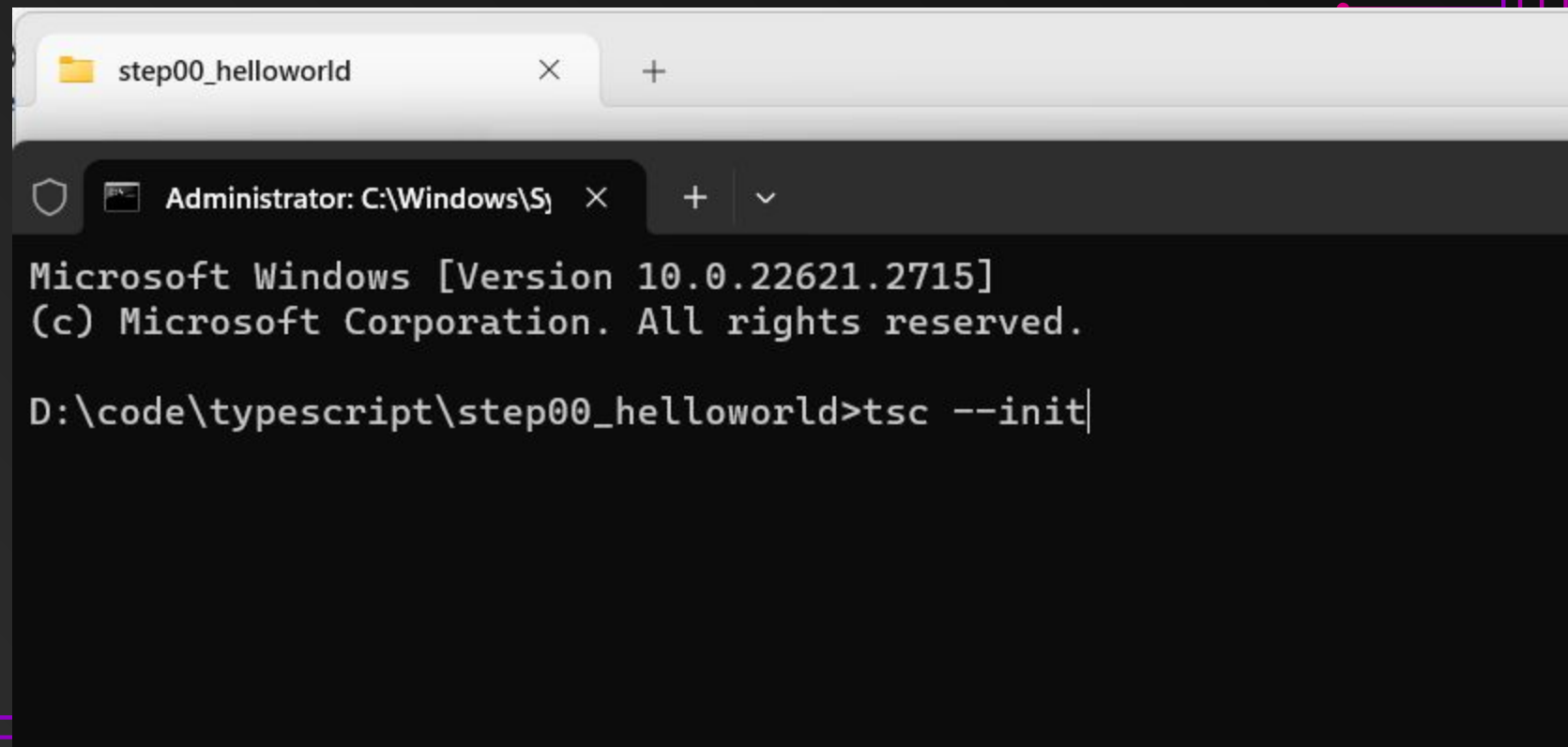


Generate tsconfig.json by giving this command:

Press Shift+ right-click in the folder you want to open Command Prompt. Now from the context menu, select the “Open command window here” option.

```
tsc --init
```





EXPLORER

STEP00_HELLOWORLD

tsconfig.json

OUTLINE

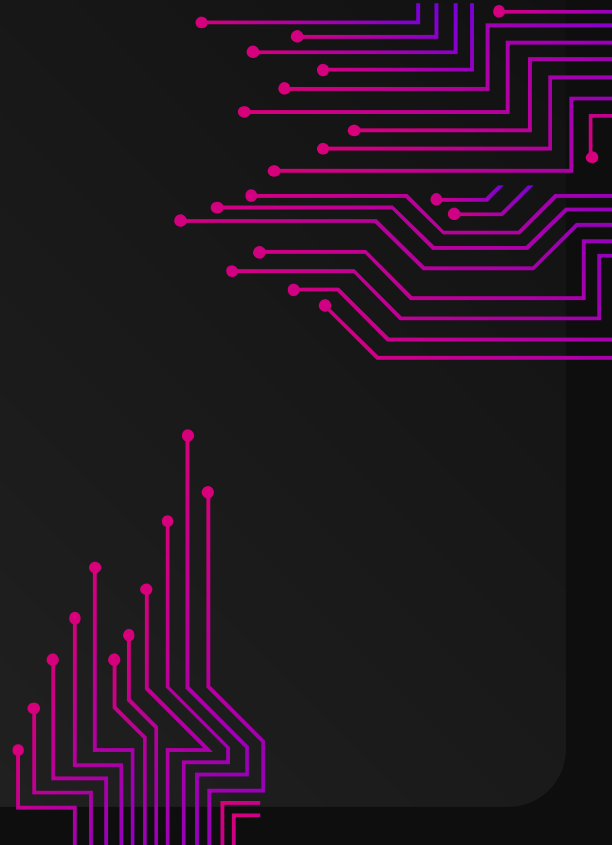
TIMELINE

```
tsconfig.json
1
2 "compilerOptions": {
3   /* Visit https://aka.ms/tsconfig to read more about this file */
4
5   /* Projects */
6   // "incremental": true,           /* Save .tsbuildinfo files to allow for increment
7   // "composite": true,           /* Enable constraints that allow a TypeScript pro
8   // "tsBuildInfoFile": "./.tsbuildinfo", /* Specify the path to .tsbuildinfo incremental c
9   // "disableSourceOfProjectReferenceRedirect": true, /* Disable preferring source files instead of dec
10  // "disableSolutionSearching": true, /* Opt a project out of multi-project reference c
11  // "disableReferencedProjectLoad": true, /* Reduce the number of projects loaded automatic
12
13  /* Language and Environment */
14  "target": "es2016", /* Set the JavaScript language version for emitte
15  // "lib": [], /* Specify a set of bundled library declaration f
16  // "jsx": "preserve", /* Specify what JSX code is generated. */
17  // "experimentalDecorators": true, /* Enable experimental support for legacy experim
18  // "emitDecoratorMetadata": true, /* Emit design-type metadata for decorated declar
19  // "jsxFactory": "", /* Specify the JSX factory function used when tar
20  // "jsxFragmentFactory": "", /* Specify the JSX Fragment reference used for fr
21  // "jsxImportSource": "", /* Specify module specifier used to import the JS
22  // "reactNamespace": "", /* Specify the object invoked for 'createElement'
23  // "noLib": true, /* Disable including any library files, including
24  // "useDefineForClassFields": true, /* Emit ECMAScript-standard-compliant class field
25  // "moduleDetection": "auto", /* Control what method is used to detect module-f
26
27  /* Modules */
28  "module": "commonjs", /* Specify what module code is generated. */
29  // "rootDir": "./", /* Specify the root folder within your source fil
30  // "moduleResolution": "node10", /* Specify how TypeScript looks up a file from a
```

Creating the compiler configuration file - TypeScript

To define the configuration for the TypeScript compiler, create a file called `tsconfig.json`

I describe the TypeScript
compiler in chapter 5



Administrator: C:\WINDOWS' x + v

Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

D:\code\typescript\step00_helloworld>tsc --init

Created a new tsconfig.json with:

```
target: es2016
module: commonjs
strict: true
esModuleInterop: true
skipLibCheck: true
forceConsistentCasingInFileNames: true
```

You can learn more at <https://aka.ms/tsconfig>

D:\code\typescript\step00_helloworld>npm init -y|

Make it a Node.js project by
giving the following command:

npm init -y

Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

D:\code\typescript\step00_helloworld>tsc --init

Created a new tsconfig.json with:

```
target: es2016
module: commonjs
strict: true
esModuleInterop: true
skipLibCheck: true
forceConsistentCasingInFileNames: true
```

You can learn more at <https://aka.ms/tsconfig>

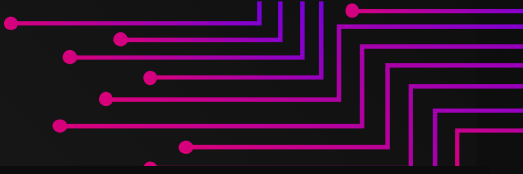
D:\code\typescript\step00_helloworld>npm init -y
Wrote to D:\code\typescript\step00_helloworld\package.json:

```
{
  "name": "step00_helloworld",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC"
}
```

D:\code\typescript\step00_helloworld>

Initializing The Project Folder - NodeJS

The npm init command creates a package.json file, which is used to keep track of the packages required by the project and also to configure the development tools.



```
D:\code\typescript\step00_helloworld>npm i @types/node -D
```

```
added 2 packages, and audited 3 packages in 2s
```

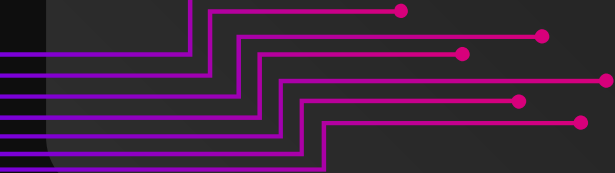
```
found 0 vulnerabilities
```

```
D:\code\typescript\step00_helloworld>|
```



Install types for Node.js

```
npm i @types/node -D
```





File Edit Selection View Go Run ...



step00_helloworld [Administrator]



EXPLORER



STEP00_HELLOWORLD



> node_modules

package-lock.json

package.json

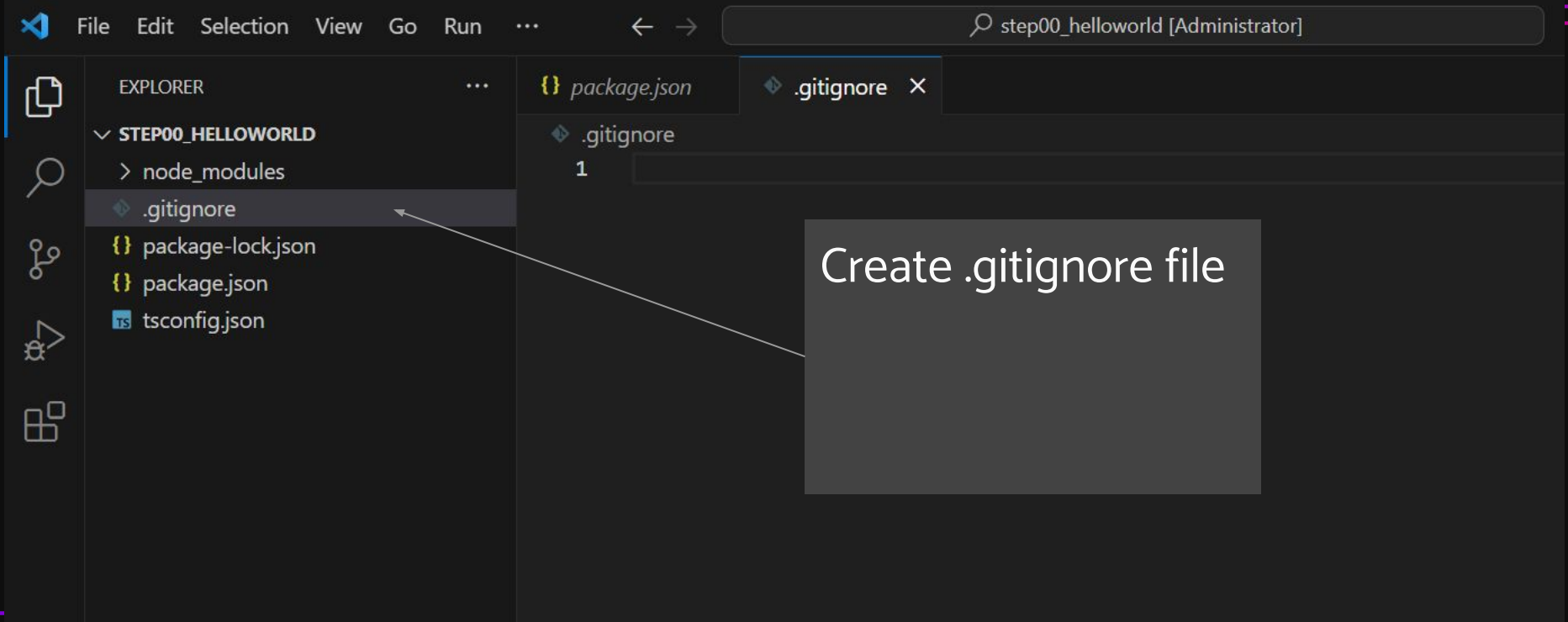
tsconfig.json



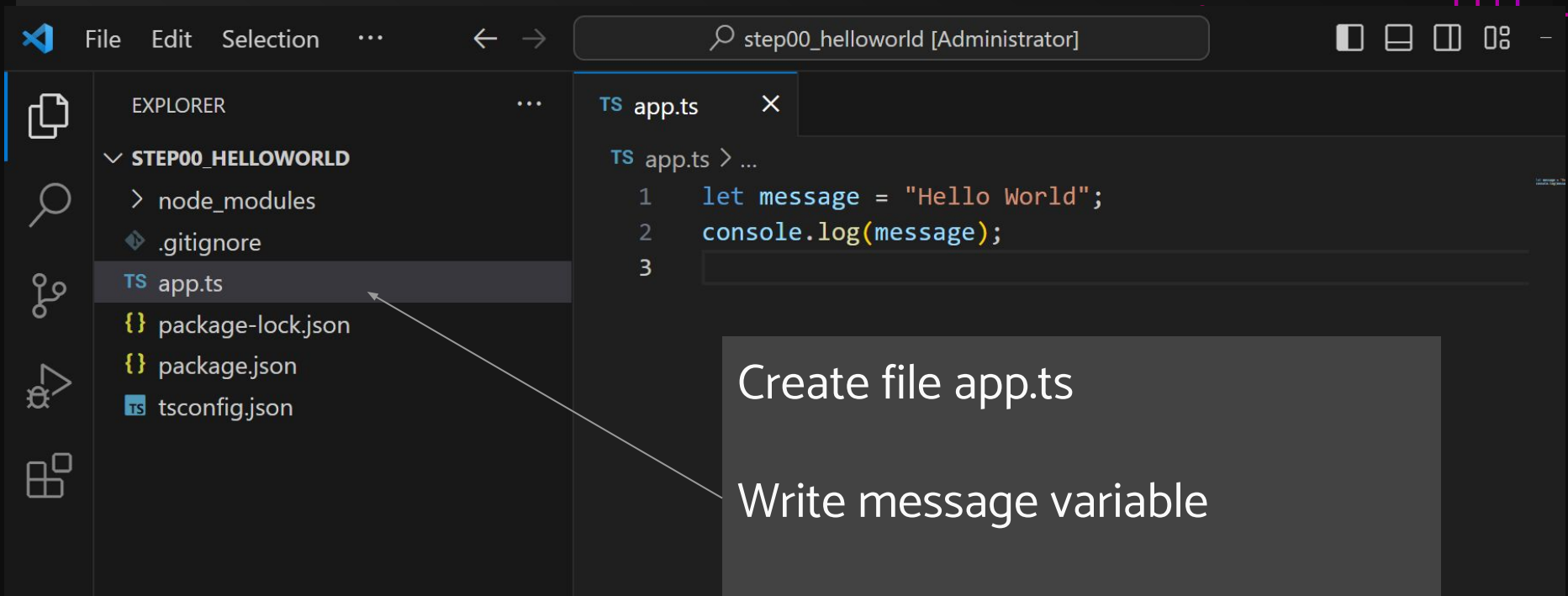
package.json

package.json > ...

```
1  {
2    "name": "step00_helloworld",
3    "version": "1.0.0",
4    "description": "",
5    "main": "index.js",
6    "scripts": {
7      "test": "echo \"Error: no test specified\" && exit 1"
8    },
9    "keywords": [],
10   "author": "",
11   "license": "ISC",
12   "devDependencies": {
13     "@types/node": "^20.10.1"
14   }
15 }
16
```



Create .gitignore file





Administrator: C:\WINDOWS' X



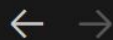
```
D:\code\typescript\step00_helloworld>tsc
```

```
D:\code\typescript\step00_helloworld>|
```

Running the compiler
Transpile typescript
to javascript



File Edit Selection ...



step00_helloworld [Administrator]



EXPLORER



✓ STEP00_HELLOWORLD

> node_modules

.gitignore

JS app.js

TS app.ts

{ } package-lock.json

{ } package.json

TS tsconfig.json



TS app.ts

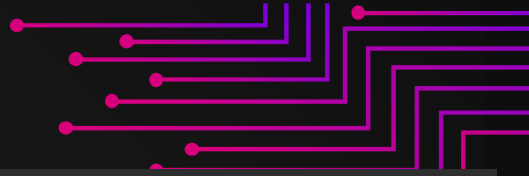
JS app.js



JS app.js > ...

```
1  "use strict";
2  let message = "Hello World";
3  console.log(message);
4  |
```

Compiling and Executing



Administrator: C:\WINDOWS' ×



```
D:\code\typescript\step00_hello_world>tsc
```

```
D:\code\typescript\step00_hello_world>node app
```

```
Hello World
```

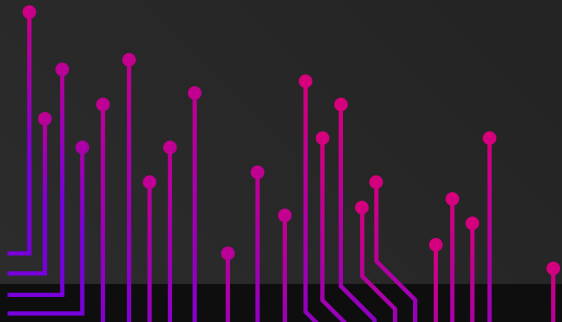
```
D:\code\typescript\step00_hello_world>
```

Congratulations

04

Hands-on Exercises

Getting Started Exercises with TypeScript and Node.js



Getting Started Exercises with TypeScript and Node.js

Note: Try these short programs to get some firsthand experience with TypeScript and Node.js. You might want to create a new folder for each exercise to keep them organized. Create a single Github repository to commit the code for these exercises and once finished submit the URL of the repo.

Assignment Competition

Getting Started Exercises with TypeScript and Node.js

Who will be the first to complete TypeScript and Node.js exercises ?

https://github.com/panaverse/learn-typescript/blob/master/NODE_PROJECTS/getting-started-exercises.md

learn-typescript/NODE_PROJECT

github.com/panaverse/learn-typescript/blob/master/NODE_PROJECTS/getting-started-exercises.md

panaverse / learn-typescript

Type to search

<> Code Issues 4 Pull requests 9 Actions Projects Wiki Security Insights

Files

master

Go to file

> NODE_PROJECTS

step00_helloworld

step00a_json_objects

step00b_syntax_error

step00c_type_error

step00d_assignability_error

step01_strong_typing

step02_const_let

step03a_modules

step03b_native_ECMAScript_mo...

step03c_import_inquirer_ECMAS...

step03d_chalk

step04_unions_literals

step05a_objects

step05b_object_alias

step05c_structural_typing_object...

learn-typescript / NODE_PROJECTS / getting-started-exercises.md

ziaukhan add node projects fcd5595 · 3 months ago History

Preview Code Blame 333 lines (282 loc) · 16.7 KB Raw Copy Download Edit

Getting Started Exercises with TypeScript and Node.js

Note: Try these short programs to get some firsthand experience with TypeScript and Node.js. You might want to create a new folder for each exercise to keep them organized. Create a single Github repository to commit the code for these exercises and once finished submit the URL of the repo.

1. Install [Node.js](#), [TypeScript](#) and [VS Code](#) on your computer.
2. Personal Message: Store a person's name in a variable, and print a message to that person. Your message should be simple, such as, "Hello Eric, would you like to learn some Python today?"
3. Name Cases: Store a person's name in a variable, and then print that person's name in lowercase, uppercase, and titlecase.
4. Famous Quote: Find a quote from a famous person you admire. Print the quote and the name of its author. Your output should look something like the following, including the quotation marks:

Albert Einstein once said, "A person who never made a mistake never tried anything new."
5. Famous Quote 2: Repeat Exercise 4, but this time store the famous person's name in a variable called famous_person. Then compose your message and store it in a new variable called message. Print your message.

Project Competition

TypeScript Node Projects

Who will be the first to complete TypeScript Node Projects ?

https://github.com/panaverse/learn-typescript/tree/master/NODE_PROJECTS

Files

master

Go to file

NODE_PROJECTS

- step00_helloworld
- step00a_json_objects
- step00b_syntax_error
- step00c_type_error
- step00d_assignability_error
- step01_strong_typing
- step02_const_let
- step03a_modules
- step03b_native_ECMAScript_mo...
- step03c_import_inquirer_ECMAS...
- step03d_chalk
- step04_unions_literals
- step05a_objects
- step05b_object_aliasing
- step05c_structural_typing_object...
- step05d_nested_objects
- step05e_intersection_types

learn-typescript / NODE_PROJECTS /

Add file



ziaukhan add node projects

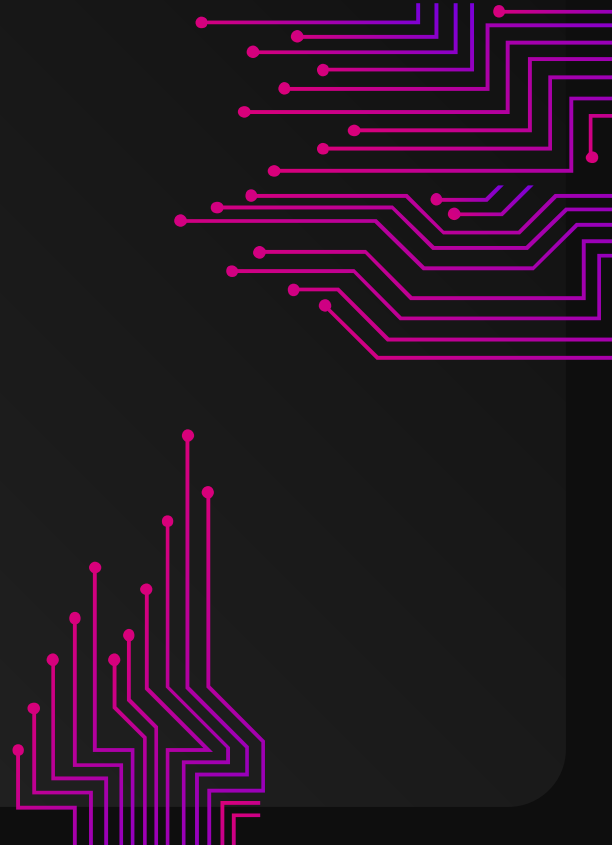
fcd5595 · 3 months ago History

Name	Last commit message	Last commit date
..		
project00_calculator	add node projects	3 months ago
project01_number_guessing-game	add node projects	3 months ago
project02_atm	add node projects	3 months ago
project03_todo_list	add node projects	3 months ago
project04_currency_converter	add node projects	3 months ago
project05_word_counter	add node projects	3 months ago
project06_student_management_system	add node projects	3 months ago
project07_adventure_game	add node projects	3 months ago
project08_quiz	add node projects	3 months ago
project09_countdown_timer	add node projects	3 months ago
project10_oop	add node projects	3 months ago
project11_oop_mybank	add node projects	3 months ago
project12_oop_mybank	add node projects	3 months ago

Submit your projects here

TypeScript Project Submission Form

We'll share the link with you later.



Documentation

TypeScript Documentation

Get Started

Quick introductions based on your background or preference.

[TS for the New Programmer](#)

[TypeScript for JS Programmers](#)

[TS for Java/C# Programmers](#)

[TS for Functional Programmers](#)

[TypeScript Tooling in 5 minutes](#)

Handbook

A great first read for your daily TS work.

[The TypeScript Handbook](#)

[The Basics](#)

[Everyday Types](#)

[Narrowing](#)

[More on Functions](#)

[Object Types](#)

Type Manipulation

[Creating Types from Types](#)

[Generics](#)

[Keyof Type Operator](#)

[Typeof Type Operator](#)

[Indexed Access Types](#)

Reference

Deep dive reference materials.

[Utility Types](#)

[Cheat Sheets](#)

[Decorators](#)

[Declaration Merging](#)

[Enums](#)

[Iterators and Generators](#)

[JSX](#)

[Mixins](#)

[Namespaces](#)

[Namespaces and Modules](#)

[Symbols](#)

[Triple-Slash Directives](#)

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<https://github.com>

Version Control using Git and GitHub By Sir Zeeshan
Hanif (Watch Recorded Videos):

<https://bit.ly/4bqeUZm>



Thanks!

<https://linktr.ee/ameenalam>



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[linkedin.com/in/ameen-alam](https://www.linkedin.com/in/ameen-alam)



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[yt.com/ameenalamofficial](https://www.youtube.com/ameenalamofficial)

Presented by Sir Ameen Alam

