

Angular

- ▶ Angular es un framework para aplicaciones web desarrollado en TypeScript, de código abierto, mantenido por Google, que se utiliza para crear y mantener aplicaciones web de una sola página.
- ▶ <https://angular.io/>

Características

- ▶ Aplicaciones web responsivas
- ▶ SPA (Single Page Application)
- ▶ Reactivo RxJs
- ▶ Asíncrono

Angular se compone de

- ▶ Componentes
- ▶ Rutas
- ▶ Directivas
- ▶ Servicios
- ▶ Módulos

Componentes

- ▶ Básicamente se compone de un archivo HTML y una clase Typescript

Servicios

- ▶ Son lugares centralizados de información

Directivas

- ▶ Directivas de componentes, tiene un pedazo de código html reutilizable
- ▶ Directivas Estructurales, modifica el DOM o html ya sea añadiendo/removiendo elementos
- ▶ Directivas de atributos, cambia la apariencia o el comportamiento de un elemento o otra directiva

Rutas

- ▶ Nos ayuda a mostrar diferentes componentes basados en el URL del navegador web

Módulos

- ▶ Nos permite agrupar componentes, rutas , directivas y servicios

Angular contiene

- ▶ Componentes
- ▶ Plantillas
- ▶ Directivas
- ▶ Eventos
- ▶ Pipe
- ▶ Rutas de navegación
- ▶ Decoradores
- ▶ Servicios y HttpClient
- ▶ Clases TypeScript
- ▶ Formulario
- ▶ Data Binding ngModel
- ▶ Validaciones
- ▶ Módulos
- ▶ Angular Material

Versiones

angular.io/guide/releases

HELP ANGULAR BY TAKING A 1 MINUTE SURVEY! [GO TO SURVEY](#)



FEATURES

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EVENTS

BLOG

Search

Introduction

Getting Started

Understanding Angular

Developer guides

Best Practices

Angular Tools

Tutorials

Release Information

Release Practices

Roadmap

[patches](#) are released.

The following table provides the status for Angular versions under support.

VERSION	STATUS	RELEASED	ACTIVE ENDS	LTS ENDS
^13.0.0	Active	Nov 04, 2021	May 04, 2022	May 04, 2023
^12.0.0	LTS	May 12, 2021	Nov 12, 2021	Nov 12, 2022
^11.0.0	LTS	Nov 11, 2020	May 11, 2021	May 11, 2022
^10.0.0	LTS	Jun 24, 2020	Dec 24, 2020	Dec 24, 2021

Angular versions v4, v5, v6, v7, v8, and v9 are no longer under support.

Angular versioning and releases

Angular versioning

Supported update paths

Preview releases

Release frequency

• [Support policy and schedule](#)

LTS fixes

Deprecation practices

Public API surface

Angular Labs

Lenguaje utilizado TypeScript

- ▶ Tipos basados en clases e interfaces
- ▶ Tipos de datos mas fuerte
- ▶ Atributos métodos y constructores
- ▶ Decoradores y mas

Herramientas necesarias

- ▶ Instalar Nodejs
- ▶ Instalar TypeScript
npm i -g typescript
tsc -v
- ▶ Instalar angular CLI

Introduction

Getting Started

What is Angular?

Try it

Setup

Understanding Angular

Developer Guides

Best Practices

Angular Tools

Tutorials

Release Information

Reference

Install the Angular CLI

You use the Angular CLI to create projects, generate application and library code, and perform a variety of ongoing development tasks such as testing, bundling, and deployment.

To install the Angular CLI, open a terminal window and run the following command:

```
npm install -g @angular/cli@11
```

Setting up the local environment and work

Prerequisites

• Install the Angular CL

Create a workspace a application

Run the application

Next steps

Create a workspace and initial application

You develop apps in the context of an Angular [workspace](#).

To create a new workspace and initial starter app:

En la consola cmd como administrador

```
Administrador: Símbolo del sistema
C:\WINDOWS\system32>npm install -g @angular/cli@11
npm WARN deprecated request@2.88.2: request has been deprecated, see https://github.com/request/request/issues/3142
npm WARN deprecated har-validator@5.1.5: this library is no longer supported
C:\Users\dell\AppData\Roaming\npm\ng -> C:\Users\dell\AppData\Roaming\npm\node_modules\@angular\cli\bin\ng

> @angular/cli@11.2.15 postinstall C:\Users\dell\AppData\Roaming\npm\node_modules\@angular\cli
> node ./bin/postinstall/script.js

+ @angular/cli@11.2.15
added 71 packages from 63 contributors, removed 8 packages and updated 37 packages
in 21.483s

C:\WINDOWS\system32>
```

Comprobamos que fue exitosa la instalación

```
Administrator: Símbolo del sistema
C:\WINDOWS\system32>ng --version

Angular CLI
Angular CLI: 11.2.15
Node: 16.13.0
OS: win32 x64

Angular:
...
Ivy Workspace:

Package                                  Version
-----
@angular-devkit/architect               0.1102.15 (cli-only)
@angular-devkit/core                     11.2.15 (cli-only)
@angular-devkit/schematics               11.2.15 (cli-only)
@schematics/angular                     11.2.15 (cli-only)
@schematics/update                       0.1102.15 (cli-only)
```

Instalamos extensiones necesarias para Visual Studio Code

The screenshot shows the Visual Studio Code interface with the 'EXTENSIONES: MARKETPLACE' sidebar on the left. The search bar contains 'angular esse'. The 'Angular Essentials (Version 12)' extension by John Papa is highlighted with a red box. The main panel displays the details for this extension, including its version (v12.0.0), author (John Papa), and a list of included extensions: ESLint, Prettier - Code formatter, Material Icon Theme, and IDeprecated! Debugger for Chrome. The 'Instalar' button is highlighted with a red box. The bottom of the screen shows the title 'Angular Essentials - Extension Pack for VS Code'.

Archivo Editar Selección Ver Ir Ejecutar Terminal Ayuda

EXTENSIONES: MARKETPLACE

angular esse

Angular Essentials (Version 12) 749K ★ 4.5
Essential extensions for Angular developers
John Papa [Instalar](#)

Angular Snippets (Version 12) 2.8M ★ 5
Angular version 12 snippets by John Papa
John Papa [Instalar](#)

Angular Language Service 2.7M ★ 3.5
Editor services for Angular templates
Angular [Instalar](#)

Angular 10 Snippets - TypeScript, H... 1.9M ★ 4.5
242 Angular Snippets (TypeScript, Html, Angular Mat...
Mikael Morlund [Instalar](#)

Angular Schematics 556K ★ 5
Angular schematics (CLI commands) from files Explore...
Cyrille Tuzi [Instalar](#)

Angular Files 431K ★ 4
Quickly scaffold angular file templates
Alexander Ivanichev [Instalar](#)

VSCode simpler Icons with Angular 293K ★ 4.5
A fork from vscode-great-icons. With fewer different i...
davidbabel [Instalar](#)

Angular 8 and TypeScript/HTML VS ... 419K ★ 5
VS Code snippets for Angular and TypeScript/HTML
Dan Wahlin [Instalar](#)

Angular 2 TypeScript Emmet 306K ★ 2.5
Support zen-coding syntax for Angular 2 typescript fil...

Extensión: Angular Essentials (Version 12) - Visual Studio Code [Administrador]

Angular Essentials (Version 12) v12.0.0
John Papa | 749,460 | ★★★★★ (20)
Essential extensions for Angular developers
[Instalar](#) [Configurar](#)

Detalles Registro de cambios

Paquete de extensión (12)

ESLint
Integrates ESLint JavaScript into VS Code.
Microsoft [Instalar](#)

Prettier - Code formatter
Code formatter using prettier
Prettier [Instalar](#)

Material Icon Theme
Material Design Icons for Visual Studio Code
Philipp Kief [Instalar](#)

IDeprecated! Debugger for Chrome

Categorías
Extension Packs

Recursos
[Marketplace](#)
[Repositorio](#)
[Licencia](#)

Más información
Publicado el 23/5/2017 5:06:
Última actualización 27/5/2021 15:22:07
Identificador johnpapa.angular-essentials


Angular Essentials - Extension Pack for VS Code


ArchivoEditarSelecciónVerIrEjecutarTerminalAyuda


Extensión: Angular Snippets (Version 12) - Visual Studio Code [Administrador]


EXTENSIONES: MARKETPLACE


angular esse


**Angular Snippets (Version 12)**
Angular version 12 snippets by John Papa
John Papa
Instalar


**Angular Essentials (Version 12)**
Essential extensions for Angular developers
John Papa
Instalar


**Angular Language Service**
Editor services for Angular templates
Angular
Instalar


**Angular 10 Snippets - TypeScript, H...**
242 Angular Snippets (TypeScript, Htm..., Angular Mat...
Mikael Morlund
Instalar


**Angular Schematics**
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**Angular Files**
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**VSCode simpler Icons with Angular**
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davidbabel
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**Angular 8 and TypeScript/HTML VS ...**
VS Code snippets for Angular and TypeScript/HTML
Dan Wahlin
Instalar

**Angular 2 TypeScript Emmet**
Support zen-coding syntax for Angular 2 typescript fil...
jakethash
Instalar

**Angular Snippets (Version 12)** v12.0.0
John Papa | 2.873.304 | ★★★★★ (95)
Angular version 12 snippets by John Papa
Instalar ⚙️

DetallesContribuciones de característicasRegistro de cambios

```
1  constructor()
2
3  export class ThingsService {
4    constructor(private httpClient: HttpClient) { }
5
6    getThings() {}
7  }
8
9
10
```

Ln 8, Col 16 Spaces: 2 UTF-8 LF TypeScript 2.5.2 Prettier: ✓

See the [CHANGELOG](#) for the latest changes

Angular Essentials

Check out the [Angular Essentials extension](#) for more great extensions for developing with JavaScript and Angular.

Categorías

Snippets

Recursos

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Más información


Publicado el 13/11/2015
5:21:38
Última actualización 27/5/2021
15:47:04
Identificador johnpapa.angular-snippets


ArchivoEditorSelecciónVerIrEjecutarTerminalAyuda


EXTENSIONES: MARKETPLACE


angular esse


**Angular Essentials (Version 12)**
Essential extensions for Angular developers
John Papa
749K ★ 4.5
[Instalar](#)


**Angular Snippets (Version 12)**
Angular version 12 snippets by John Papa
John Papa
2.8M ★ 5
[Instalar](#)


**Angular Language Service**
Editor services for Angular templates
Angular
2.7M ★ 3.5
[Instalar](#)


**Angular 10 Snippets - TypeScript, H...**
242 Angular Snippets (TypeScript, Html, Angular Mat...
Mikael Morlund
1.9M ★ 4.5
[Instalar](#)

**Angular Schematics**
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556K ★ 5
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davidbabel
293K ★ 4.5
[Instalar](#)

**Angular 8 and TypeScript/HTML VS ...**
VS Code snippets for Angular and TypeScript/HTML
Dan Wahlin
419K ★ 5
[Instalar](#)

**Angular 2 TypeScript Emmet**
Support zen-coding syntax for Angular 2 typescript fil...
306K ★ 2.5
[Instalar](#)

Extensión: Angular Language Service




Angular Language Service

v13.0.0

Angular | 2.786.784 | ★★★★★ (197)

Editor services for Angular templates

[Instalar](#) 

[Detalles](#) [Contribuciones de características](#) [Registro de cambios](#)

Angular Language Service

```
app.component.html
1 <h1>{{title}}
  title member
```

Categorías

Programming Languages

Recursos

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Más información


Publicado el 4/4/2017 0:31:2
Última 3/11/2021
actualización 21:57:12
Identificador angular.ng-
template

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Extensión: Material Icon Theme - Visual Studio Code [Administrador]

EXTENSIONES: MARKETPLACE

material icon the


**Material Icon Theme**

10M ★ 5

Material Design Icons for Visual Studio Code

Philipp Kief

Instalar


**Material Theme Icons**

646K ★ 5

Material Theme Icons, the most epic icons theme for V...

Equinusocio

Instalar


**Community Material Theme**

675K ★ 4.5

The official community maintained Material Theme wi...

Equinusocio

Instalar


**Material Theme**

582K ★ 5

The most epic theme now for Visual Studio Code

Equinusocio

Instalar


**Icon Fonts**

296K ★ 5

Snippets for popular icon fonts such as Font Awesom...

idleberg

Instalar


**Tabnine - Code Faster with the All-L...**

2.9M ★ 4.5

JavaScript, Python, Java, Typescript & all other L...

TabNine

Instalar

**Sublime Material Theme**


475K ★ 4.5

Port of the Material Theme for Sublime Text.

Jarvis Prestidge

Instalar

FILE-TYPE


**Nomo Dark Icon Theme**

283K ★ 5

Nomo Dark Icon Theme

beSinviz


Instalar

**Dark+ Material**

324K ★ 4.5

The default Dark+ Theme with material palette and el

Extensión: Material Icon Theme ✕



Material Icon Theme

v4.11.0

Philipp Kief | 10.090.799 | ★★★★★ (226)


Material Design Icons for Visual Studio Code

Instalar ⚙️

Detalles

Contribuciones de características

Registro de cambios



Material Icon Theme

Categorías

Themes

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Más información

Publicado el 10/9/2016

22:28:56

Última 25/11/2021

actualización21:32:59

Identificadorpkief.material

icon-theme

EXTENSIONES: MARKETPLACE

html su




HTML CSS Support

CSS Intellisense for HTML

ecmel

8.1M ★ 3.5


Instalar



HTML Snippets

Full HTML tags including HTML5 Snippets


Mohamed Abusaid



IntelliSense for CSS class names in H...

CSS class name completion for the HTML class attribu...


Zignd



JS-CSS-HTML Formatter

Format ,prettify and beautify JS, CSS, HTML code by u...


lonefy



Kite AutoComplete AI Code: Python...

AI code completions for all languages, intellisense, co...


Kite



HTML Preview

Provides ability to preview HTML documents.


Thomas Haakon Townsend



HTML Boilerplate

A basic HTML5 boilerplate snippet generator.

sidthesloth



Tabnine - Code Faster with the All-L...

JavaScript, Python, Java, Typescript & all other l...

TabNine



HTML SCSS Support

Extensión: HTML CSS Support X



HTML CSS Support v1.10.2

ecmel | 8.100.126 | ★★★★★ (84)

CSS Intellisense for HTML

Instalar

Detalles

Contribuciones de características

Registro de cambios

Visual Studio Code CSS Intellisense for HTML

HTML **id** and **class** attribute completion for Visual Studio Code.

Features

- HTML **id** and **class** attribute completion.
- Supports linked and embedded style sheets.
- Supports template inheritance.
- Supports additional style sheets.
- Supports other HTML like languages.
- Validates CSS selectors on demand.

Usage

Categorías

Programming Languages

Recursos

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Más información

Publicado el 14/7/2016

23:02:33

Última actualización 10/2/2021

16:07:29


Identificador ecmel.vscode-


html-css


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EXTENSIONES: MARKETPLACE


html su


**HTML CSS Support**
CSS Intellisense for HTML
ecmel


**HTML Snippets**
Full HTML tags including HTML5 Snippets
Mohamed Abusaid


**IntelliSense for CSS class names in HTML**
CSS class name completion for the HTML class attribute
Zignd


**JS-CSS-HTML Formatter**
Format, prettify and beautify JS, CSS, HTML code by using
lonefy

**Kite AutoComplete AI Code: Python...**
AI code completions for all languages, intellisense, code snippets
Kite


**HTML Preview**
Provides ability to preview HTML documents.
Thomas Haakon Townsend

**HTML Boilerplate**
A basic HTML5 boilerplate snippet generator.
sidthesloth

**Tabnine - Code Faster with the AI...**
JavaScript, Python, Java, Typescript & all other languages
TabNine

**HTML SCSS Support**
SCSS support for HTML documents

Extensión: HTML Snippets

**HTML Snippets** v0.2.1
Mohamed Abusaid | 6.490.175 | ★★★★★ (62)
Full HTML tags including HTML5 Snippets

DeshabilitarDesinstalar

Esta extensión está habilitada globalmente.

DetallesContribuciones de característicasEstado en tiempo de ejecución

README

Visual Studio Code HTML Snippets

DISABLING THIS EXTENSION AS IT CURRENTLY CONFLICTS WITH EXISTING VS CODE HTML EXTENSION

This extension adds rich language support for the HTML Markup to VS Code, including:

- Full HTML5 Tags
- Colorization
- Snippets
- [partially implemented] Quick Info
- description mentions if tag deprecated

Categorías

Snippets

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[Licencia](#)

Más información

Publicado el 24/12/2015 20:27:06

Última actualización 28/12/2017 16:51:21

Identificadorabusaidm.html-snippets

Creamos nuestro primer proyecto

- ▶ Nos dirigimos al directorio deseado desde consola y ejecutamos
- ▶ **ng new nombredeproyecto**

Administrador: Símbolo del sistema

C:\Users\dell\Desktop\formacion_angular>ng new primero

? Do you want to enforce stricter type checking and stricter bundle budgets in the workspace?

This setting helps improve maintainability and catch bugs ahead of time.

For more information, see <https://angular.io/strict> Yes

? Would you like to add Angular routing? No

? Which stylesheet format would you like to use? CSS

CREATE primero/angular.json (3631 bytes)

CREATE primero/package.json (1208 bytes)

CREATE primero/README.md (1017 bytes)

CREATE primero/tsconfig.json (783 bytes)

CREATE primero/tslint.json (3185 bytes)

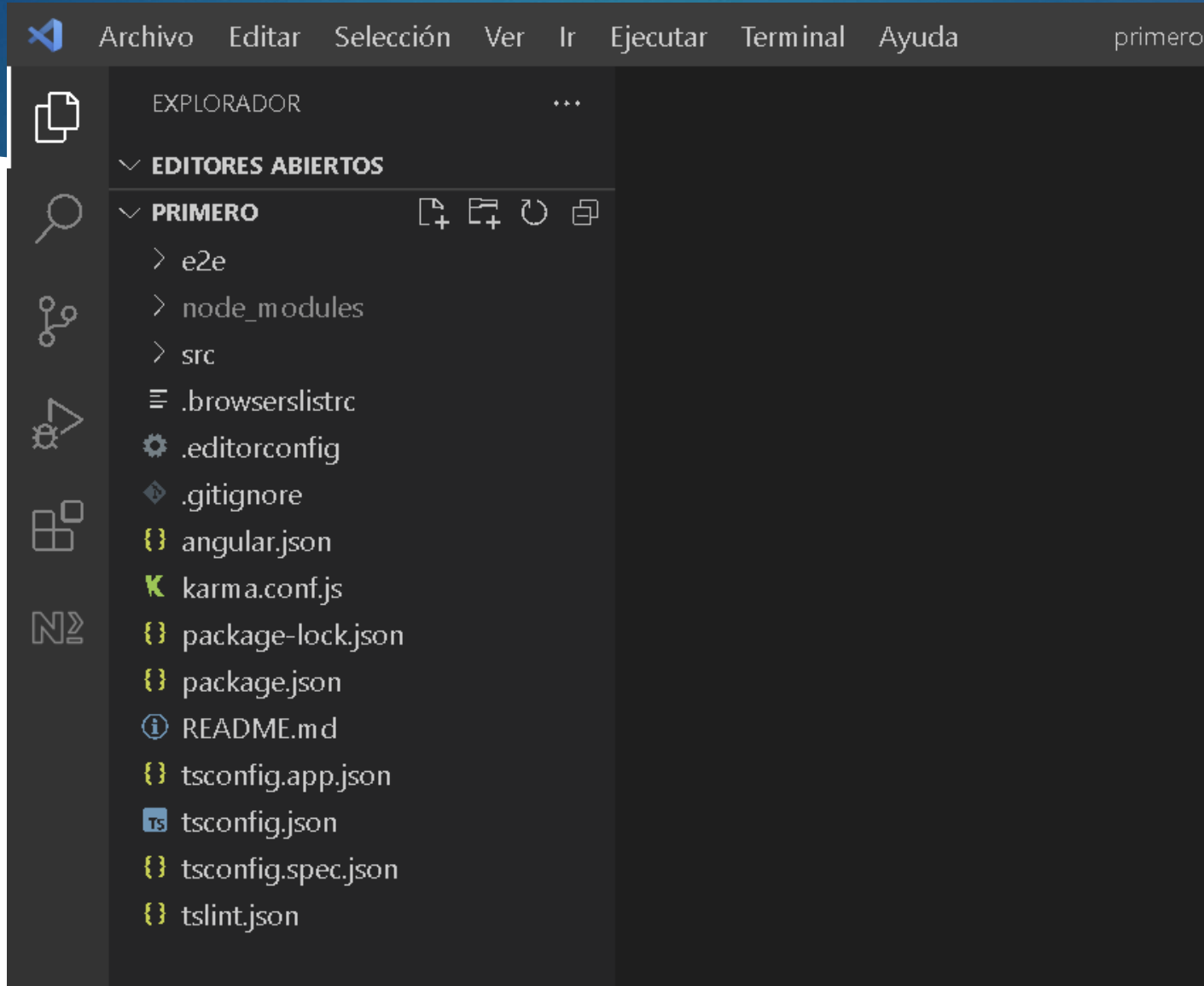
CREATE primero/.editorconfig (274 bytes)

CREATE primero/.gitignore (631 bytes)

CREATE primero/.browserslistrc (703 bytes)

CREATE primero/karma.conf.js (1424 bytes)

Una vez creado el proyecto podemos abrirlo el proyecto con nuestro editor





Lanzamos nuestro proyecto angular

► **ng serve --open**

Para el que tiene inconvenientes con su consola desde
Visual Studio Code

PROBLEMAS

SALIDA

CONSOLA DE DEPURACIÓN

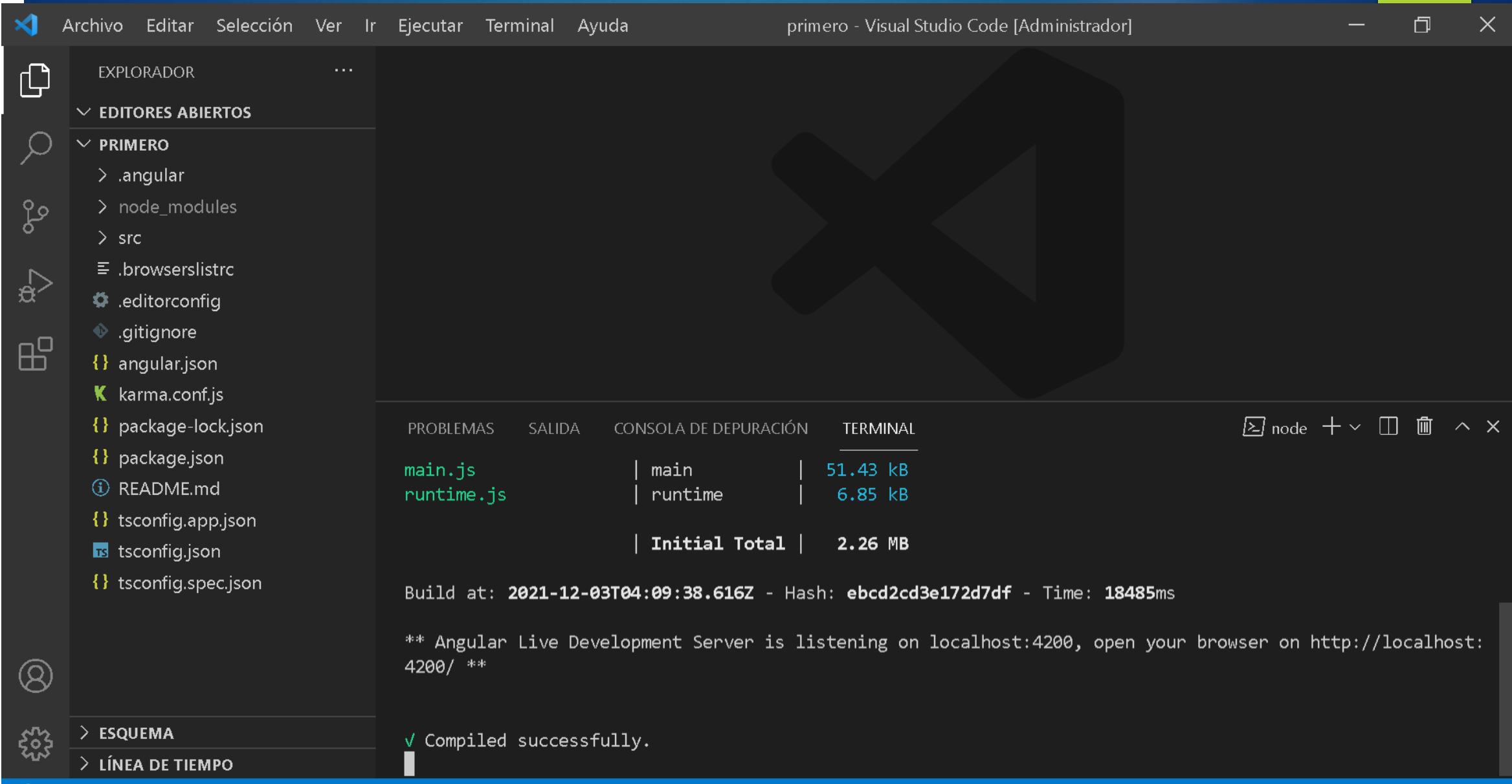
TERMINAL

node

```
PS C:\Users\dell\Desktop\pruebas\primero> Set-ExecutionPolicy Unrestricted
```

```
PS C:\Users\dell\Desktop\pruebas\primero> ng serve --open
```

```
• Generating browser application bundles (phase: setup)...
```








primero app is running!

Resources


Here are some links to help you get started:

 [Learn Angular >](#)

 [CLI Documentation >](#)

 [Angular Material >](#)


 [Angular Blog >](#)


 [Angular DevTools >](#)

Next Steps

What do you want to do next with your app?

 [New Component](#)

 [Angular Material](#)

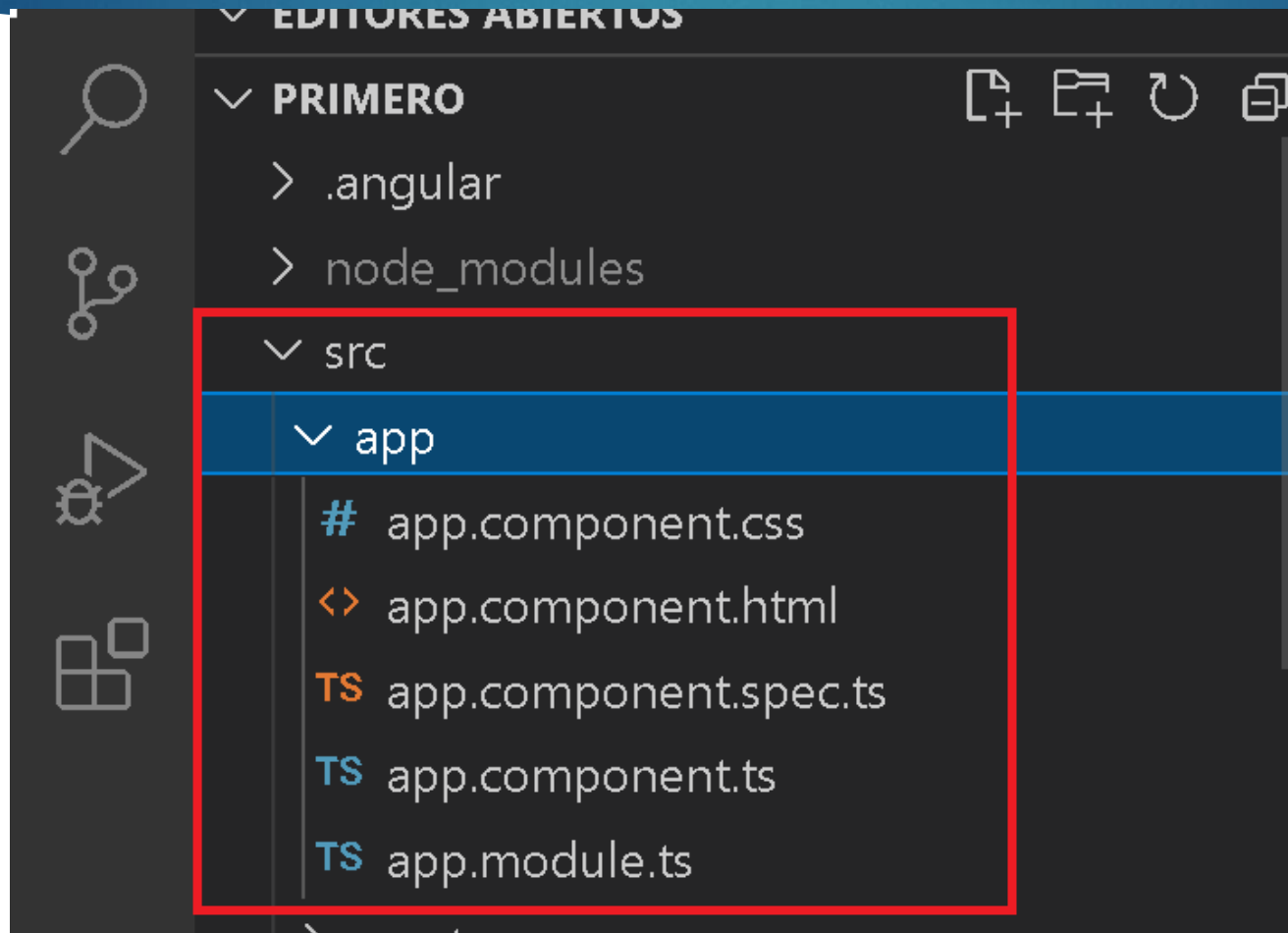
 [Add PWA Support](#)

 [Add Dependency](#)

 [Run and Watch Tests](#)

 [Build for Production](#)

Nos dirigimos a este directorio





Archivo Editar Selección Ver Ir Ejecutar Terminal Ayuda

app.component.ts - primero - Visual Studio Code



EXPLORADOR



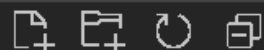
EDITORES ABIERTOS

<> app.component.html src\... M

X TS app.component.ts src\app



PRIMERO



> .angular

> node_modules

src

app

app.component.css

<> app.component.html M

TS app.component.spec.ts

TS app.component.ts

TS app.module.ts

> assets

> environments

<> app.component.html M

TS app.component.ts X

src > app > TS app.component.ts > ...

```
1 import { Component } from '@angular/core';
```

```
2
```

```
3 @Component({
```

```
4   selector: 'app-root',
```

```
5   templateUrl: './app.component.html',
```

```
6   styleUrls: ['./app.component.css']
```

```
7 })
```

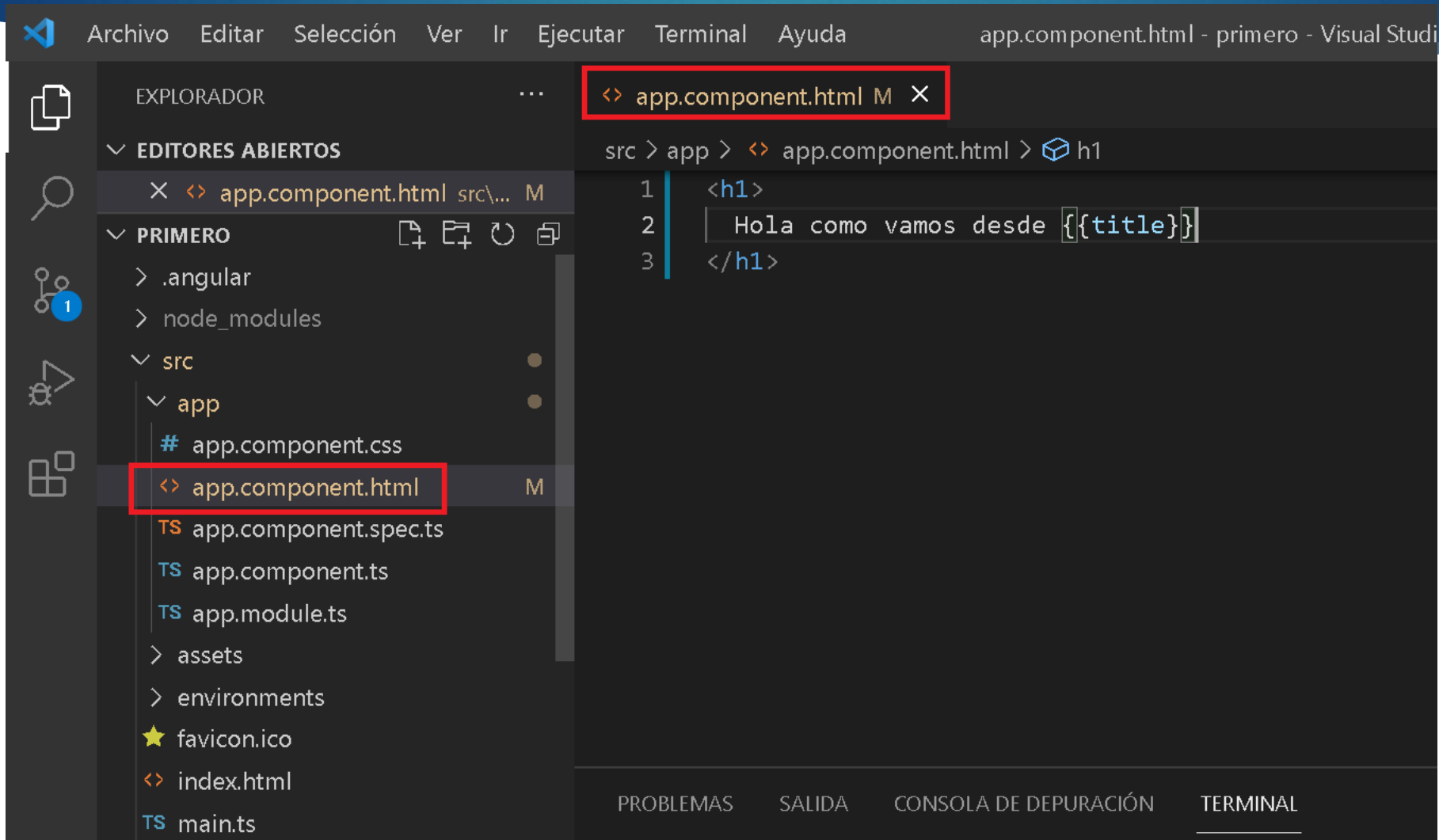
```
8 export class AppComponent {
```

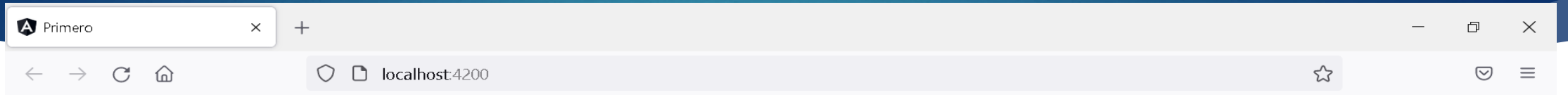
```
9   title = 'primero';
```

```
10 }
```

```
11
```

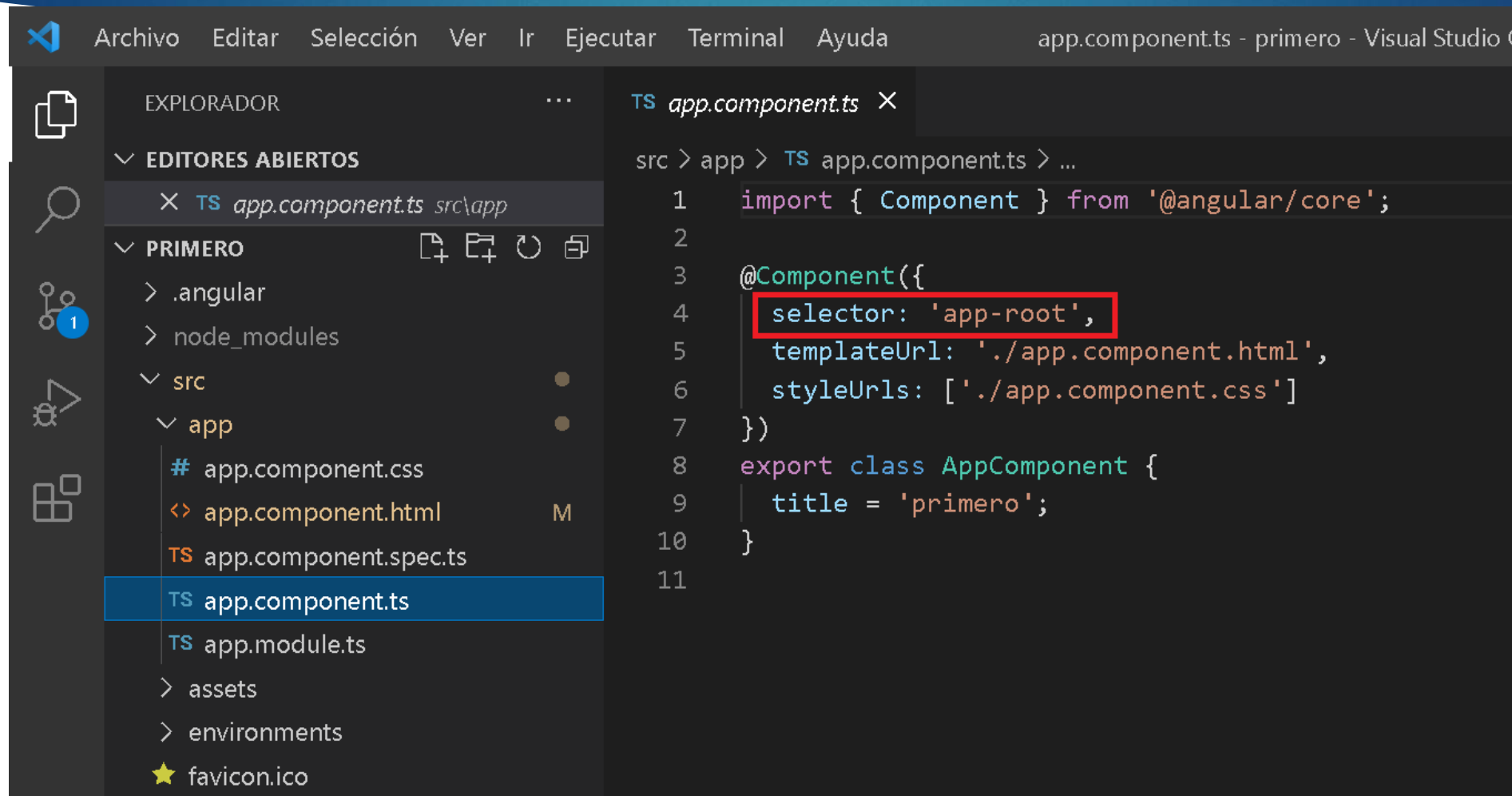
Agregamos esto en app.component.html





Hola como vamos desde primero

El selector app-root es incluida en el index principal para agregar todo el componente a la vista html



The screenshot shows the Visual Studio Code interface. On the left, the 'EXPLORADOR' (Explorer) sidebar displays the project structure. Under the 'PRIMERO' folder, the 'src' directory is expanded, showing the 'app' subdirectory. Inside 'app', the file 'app.component.ts' is selected and highlighted in blue. The main editor area on the right shows the content of 'app.component.ts'. The code includes an import statement for 'Component' from '@angular/core', followed by the '@Component' decorator. The 'selector' property of the decorator is set to 'app-root' and is highlighted with a red rectangle. Below the decorator, the 'AppComponent' class is defined with a 'title' property set to 'primero'.

```
src > app > TS app.component.ts > ...
1  import { Component } from '@angular/core';
2
3  @Component({
4      selector: 'app-root',
5      templateUrl: './app.component.html',
6      styleUrls: ['./app.component.css']
7  })
8  export class AppComponent {
9      title = 'primero';
10 }
11
```



EXPLORADOR

EDITORES ABIERTOS

✕ <> index.html src

PRIMERO

> .angular

> node_modules

▼ src

▼ app

app.component.css

<> app.component.html M

TS app.component.spec.ts

TS app.component.ts

TS app.module.ts

> assets

> environments

★ favicon.ico

<> index.html

TS main.ts

TS polyfills.ts

styles.css

TS test.ts

> ESQUEMA

<> index.html ✕

src > <> index.html > ...

```

1  <!doctype html>
2  <html lang="en">
3  <head>
4    <meta charset="utf-8">
5    <title>Primero</title>
6    <base href="/">
7    <meta name="viewport" content="width=device-width, initial-scale=1">
8    <link rel="icon" type="image/x-icon" href="favicon.ico">
9  </head>
10 <body>
11   <app-root></app-root>
12 </body>
13 </html>
14

```

PROBLEMAS

SALIDA

CONSOLA DE DEPURACIÓN

TERMINAL



node +

3 unchanged chunks

Build at: 2021-12-03T04:17:33.210Z - Hash: 683009ac500d4dbe - Time: 420ms



Archivo Editar Selección Ver Ir Ejecutar Terminal Ayuda

app.component.ts - primero - Visual Studio Code



EXPLORADOR

EDITORES ABIERTOS

index.html src

TS app.component.ts src\app M

PRIMERO

> .angular

> node_modules

> src

> app

app.component.css

<> app.component.html M

TS app.component.spec.ts

TS app.component.ts M

TS app.module.ts

> assets

> environments

★ favicon.ico

index.html

TS app.component.ts M X

src > app > TS app.component.ts > AppComponent > formacion

```
3 @Component({
4   selector: 'app-root',
5   templateUrl: './app.component.html',
6   styleUrls: ['./app.component.css']
7 })
8 export class AppComponent {
9   title = 'primero';
10
11   nombre:string = "Rolando";
12
13   formacion:string = "Angular";
14
15 }
16
```

PROBLEMAS

SALIDA

CONSOLA DE DEPURACIÓN

TERMINAL



EXPLORADOR



TS app.component.ts M

<> app.component.html M X



EDITORES ABIERTOS

TS app.component.ts src\app M

X <> app.component.html src\... M



PRIMERO

> .angular

> node_modules

> src

> app

app.component.css

<> app.component.html M

TS app.component.spec.ts

TS app.component.ts M

TS app.module.ts

> assets

> environments

★ favicon.ico

<> index.html

TS main.ts

TS polyfills.ts

src > app > <> app.component.html > ul

```
1 <h1>
2   Bienvenidos al la formacion de {{formacion}}
3
4 </h1>
5
6 <ul>
7   <li>El formador {{nombre}}</li>
8   <li>El proyecto es {{title}}</li>
9 </ul>
```

PROBLEMAS

SALIDA

CONSOLA DE DEPURACIÓN

TERMINAL

3 unchanged chunks

Estructura de los componentes

Son pequeñas partes o bloques que forman parte de nuestra aplicación, y cumplen un rol específico dentro, en términos de programación son clases de typescript

- ▶ Menú de navegación
- ▶ Barra lateral
- ▶ Un pie de página
- ▶ Contenido dinámico o principal

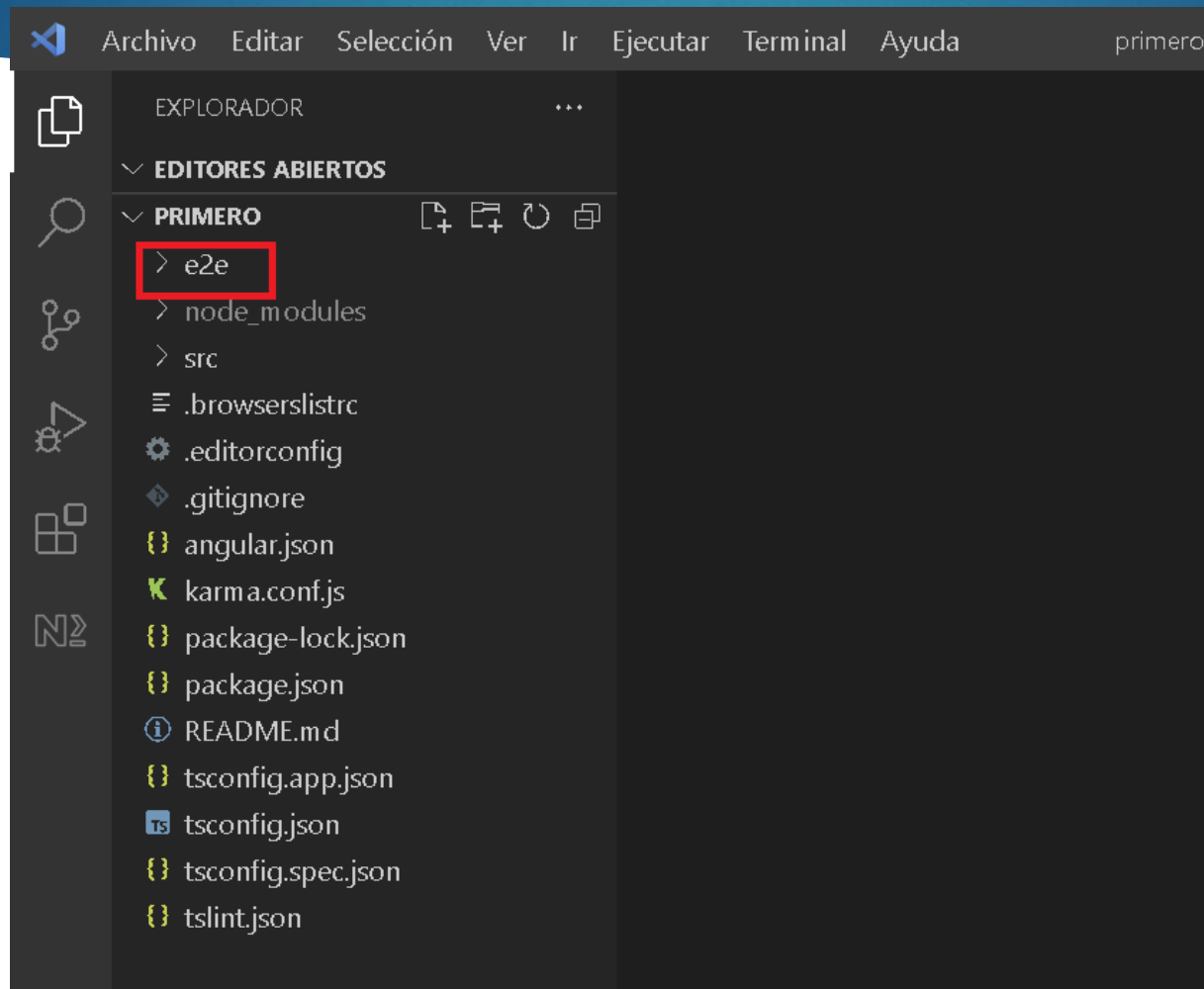
Características de los componentes

- ▶ Clase TS con una función
- ▶ Patrón composite
- ▶ Se puede anidar
- ▶ Se puede enrutar
- ▶ Ciclo de vida
- ▶ MVC
- ▶ Asíncronos
- ▶ Inyección de dependencia
- ▶ Tiene sus propios estilos

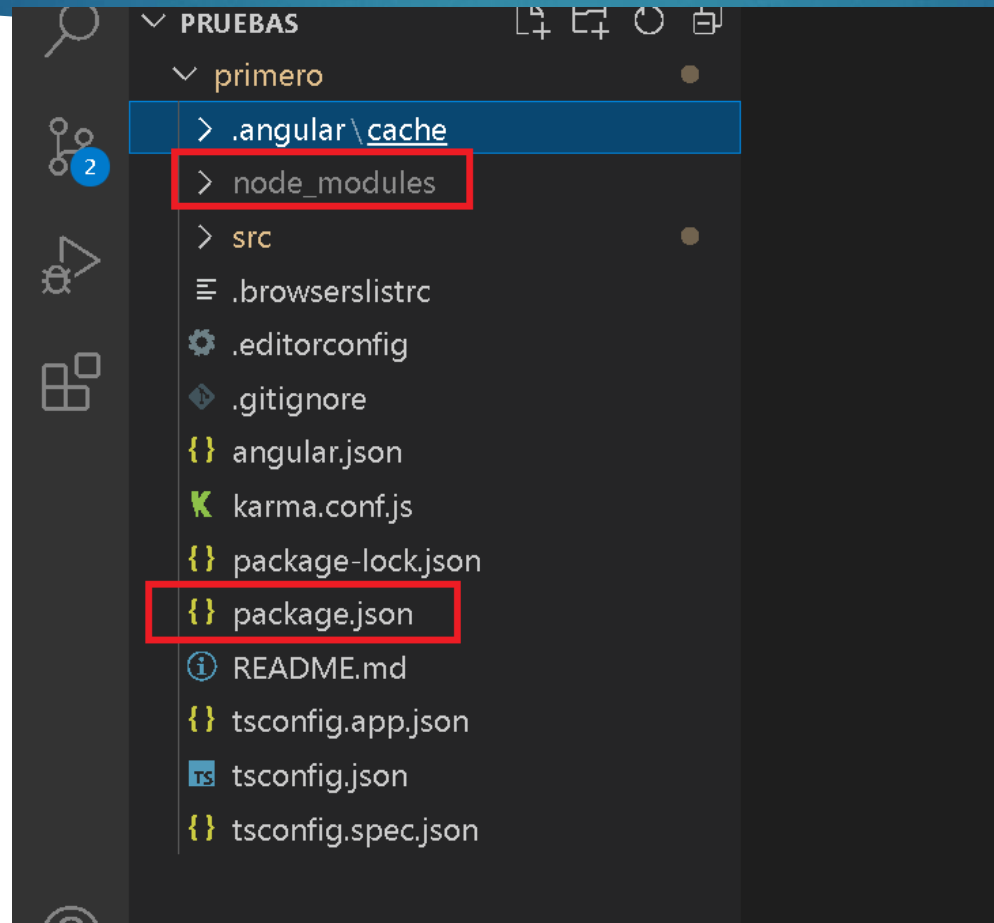
Archivos del proyecto Angular

- ▶ Estaremos viendo los archivo dentro del proyecto angular

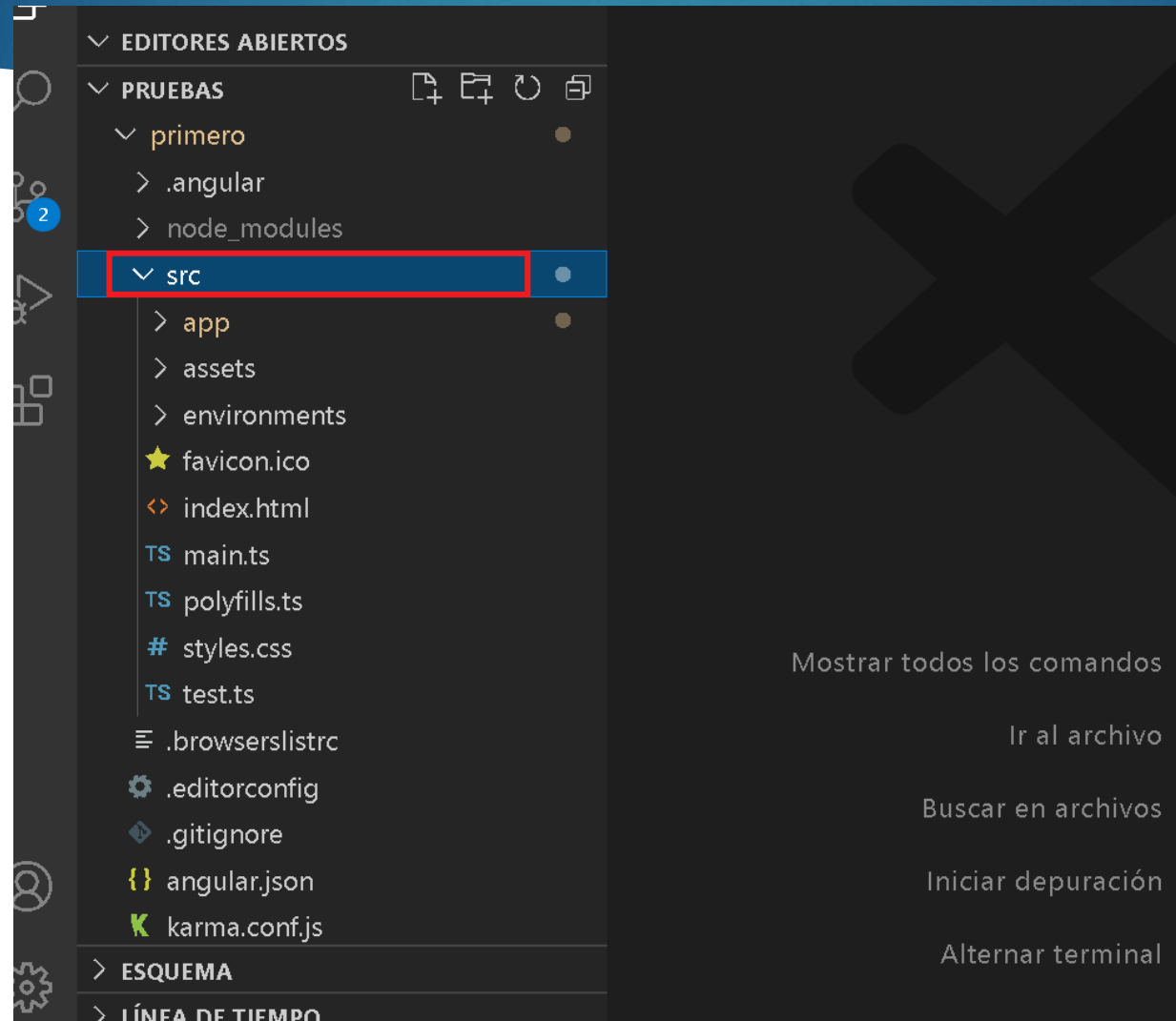
El directorio e2e para pruebas unitarias



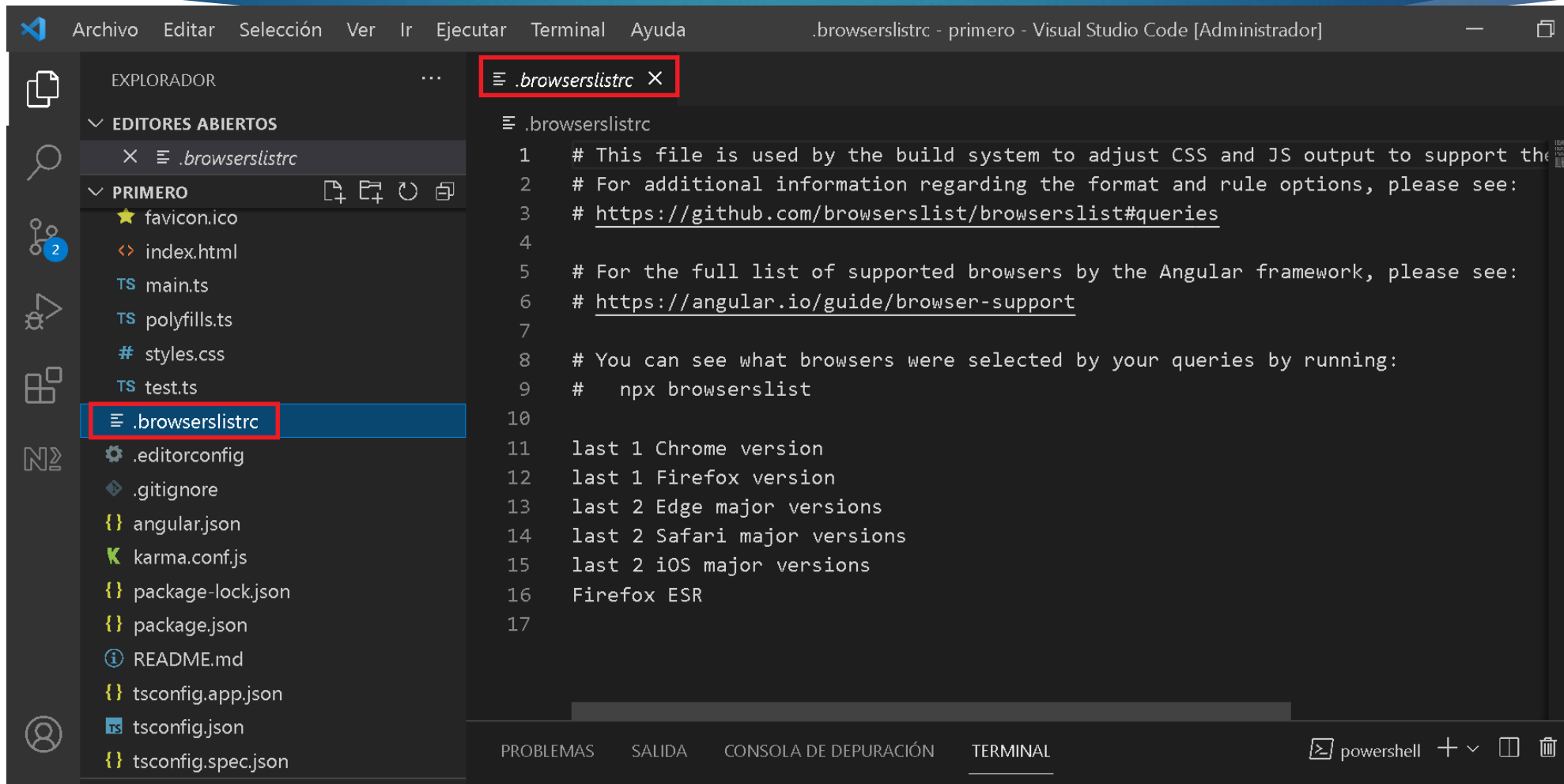
En node_modules encuentra todas las librerías y dependencias del proyecto, también maneja dependencias todo lo relacionado con dependencias de angular en general, y es manejado por el package.json de forma automática no deberíamos de tocarlo



La carpeta src es super importante contiene todo el código de nuestra aplicación



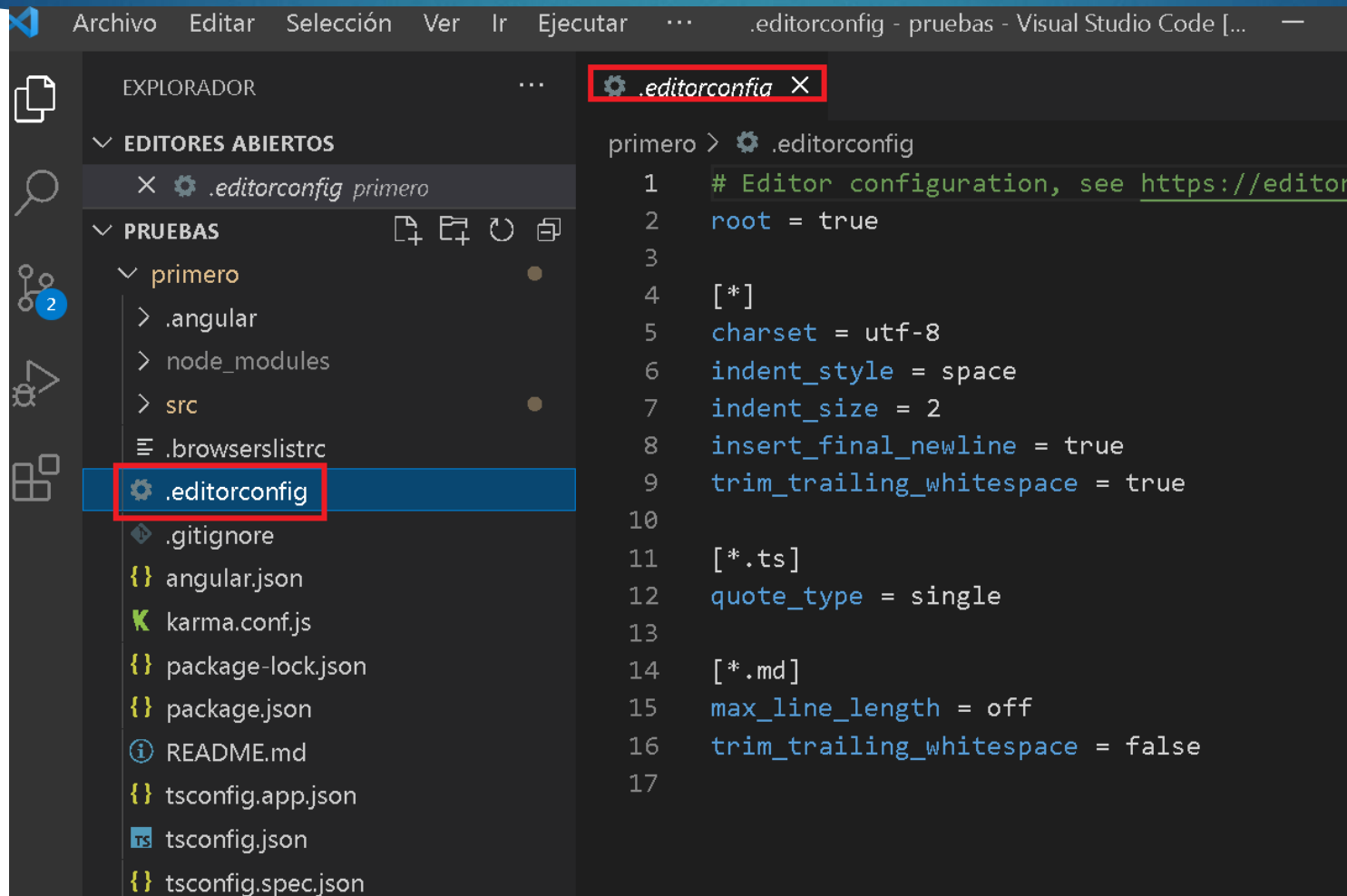
El archivo browserslistrc para incrementar/modificar compatibilidad con navegadores de internet existentes



The screenshot shows the Visual Studio Code interface with the file explorer on the left and the editor on the right. The file explorer shows a project named 'PRIMERO' with several files. The file '.browserslistrc' is highlighted in the file explorer. The editor shows the content of the '.browserslistrc' file, which is a configuration file for browserslist. The file contains comments and a list of browser versions to support.

```
.browserslistrc
1  # This file is used by the build system to adjust CSS and JS output to support the
2  # For additional information regarding the format and rule options, please see:
3  # https://github.com/browserslist/browserslist#queries
4
5  # For the full list of supported browsers by the Angular framework, please see:
6  # https://angular.io/guide/browser-support
7
8  # You can see what browsers were selected by your queries by running:
9  # npx browserslist
10
11  last 1 Chrome version
12  last 1 Firefox version
13  last 2 Edge major versions
14  last 2 Safari major versions
15  last 2 iOS major versions
16  Firefox ESR
17
```

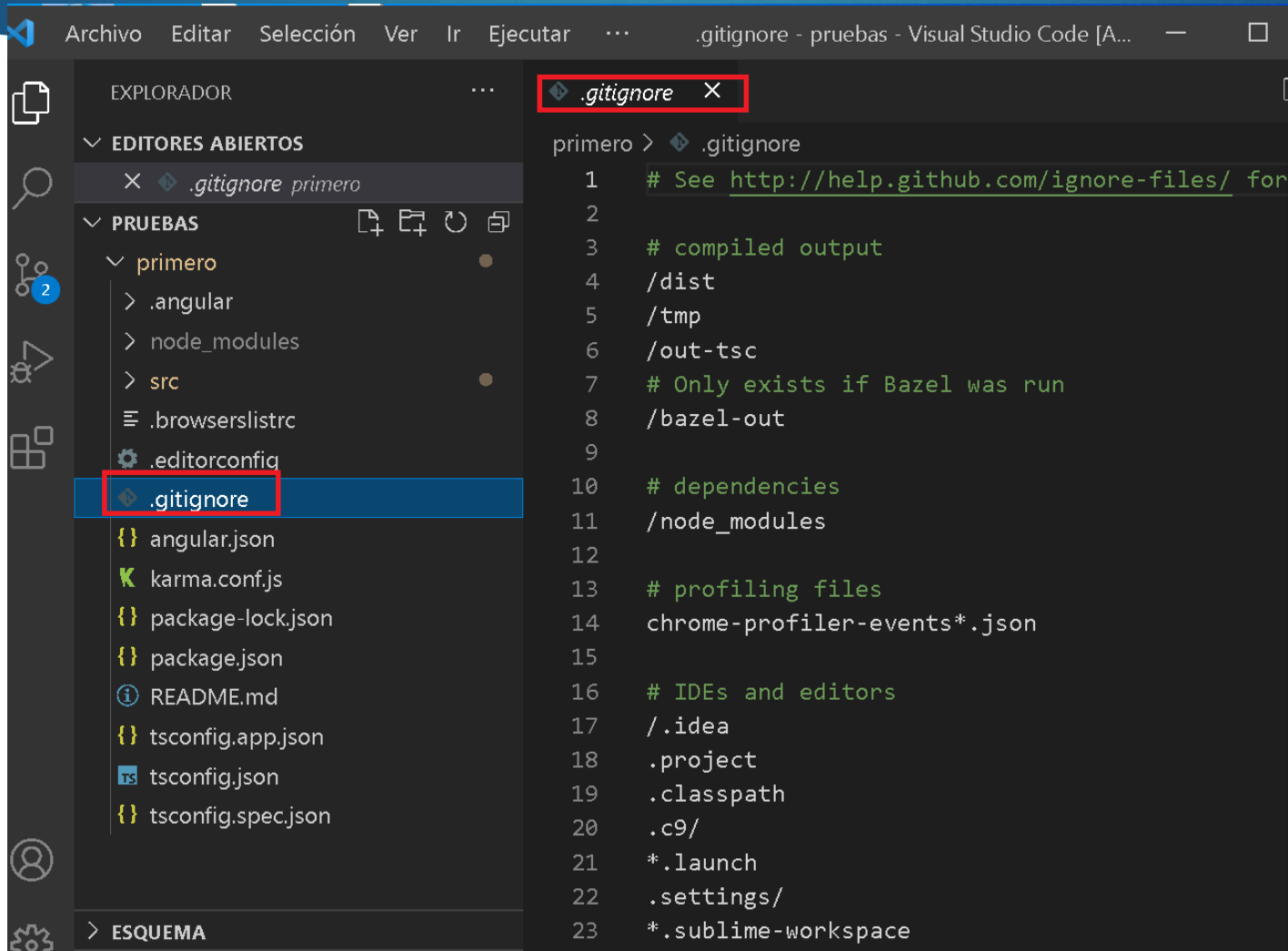
El archivo editorconfig no se ocupa generalmente contiene toda la configuración del editor que podríamos modificar si lo necesitamos



The screenshot shows the Visual Studio Code interface. In the Explorer view on the left, the file `.editorconfig` is highlighted under the `PRUEBAS` folder. In the Editor view on the right, the content of `.editorconfig` is displayed. The file is named `.editorconfig` and contains the following configuration:

```
primero > .editorconfig
1  # Editor configuration, see https://editorconfig.org/
2  root = true
3
4  [*]
5  charset = utf-8
6  indent_style = space
7  indent_size = 2
8  insert_final_newline = true
9  trim_trailing_whitespace = true
10
11  [*.*ts]
12  quote_type = single
13
14  [*.*md]
15  max_line_length = off
16  trim_trailing_whitespace = false
17
```

El archivo .gitignore es un archivo de github que nos permite ocultar ignorar algún archivo o directorio que no quisiéramos compartir en un repositorio git

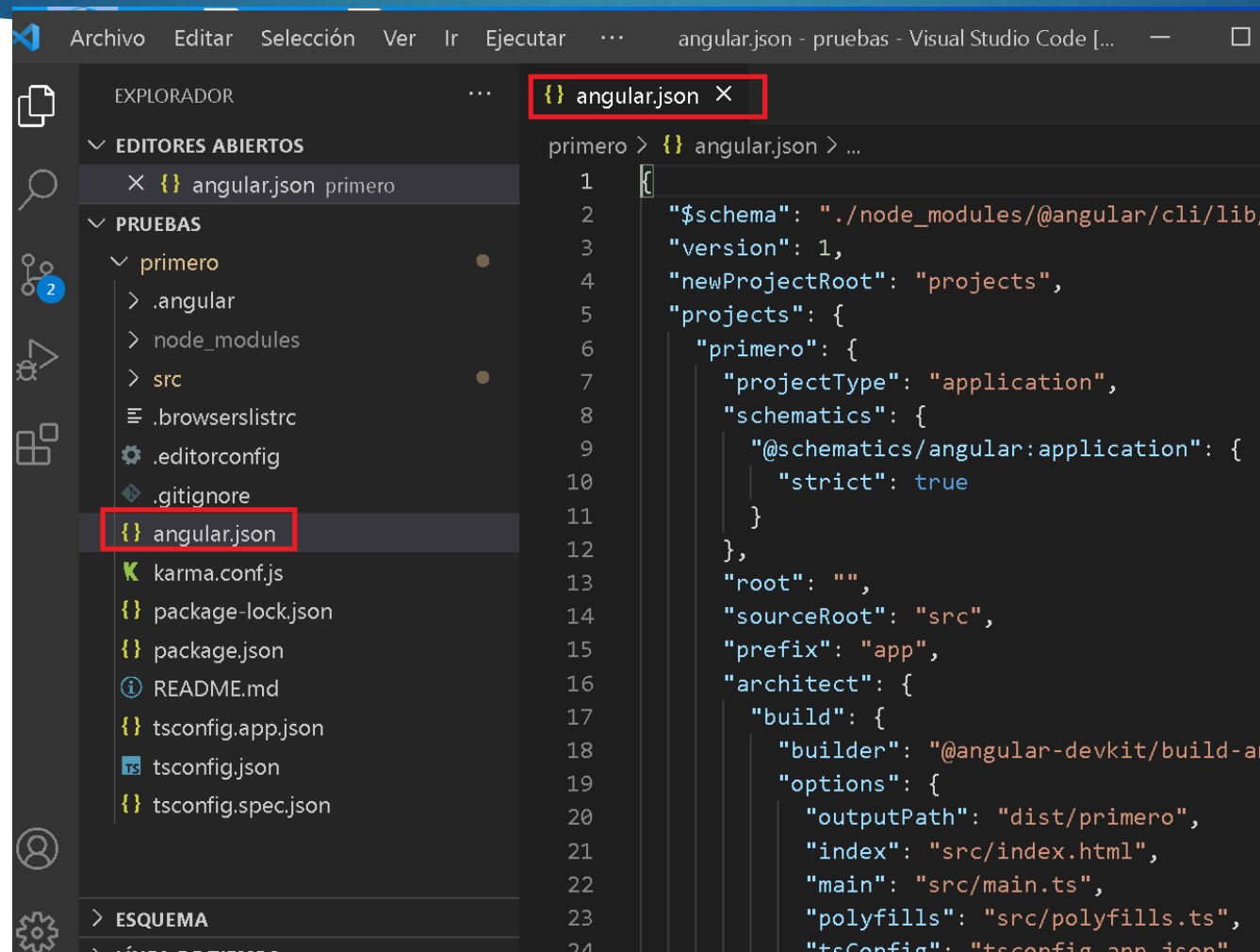


The screenshot shows the Visual Studio Code interface with the following elements:

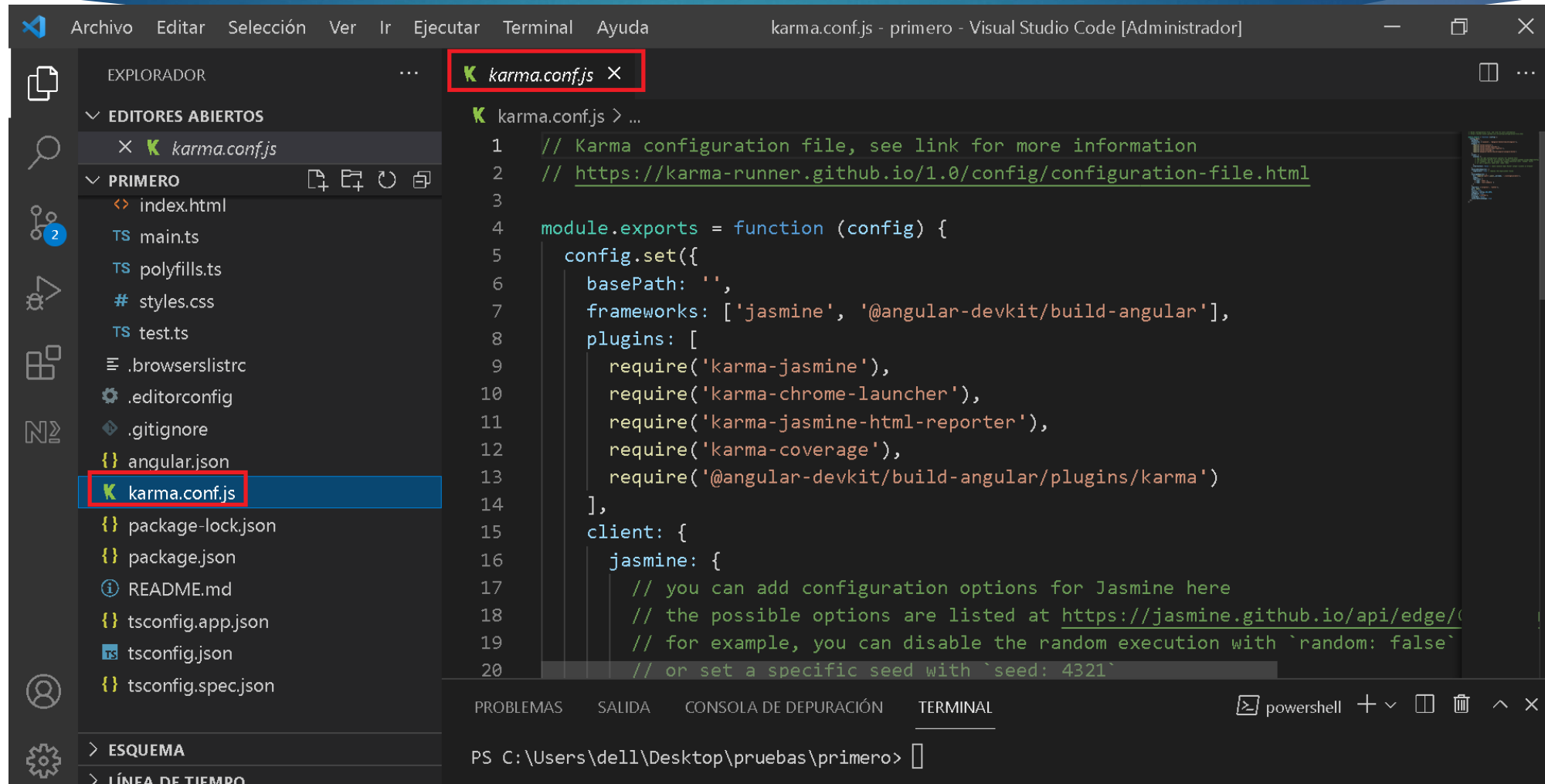
- EXPLORADOR (Explorer):** Located on the left, it shows the project structure. The file `.gitignore` is highlighted with a red box.
- EDITORES ABIERTOS (Open Editors):** Located at the top left of the editor area, it shows the open file `.gitignore primero` with a red box around its tab.
- EDITOR:** The main area on the right shows the content of the `.gitignore` file. The text is as follows:

```
primero > .gitignore
1  # See http://help.github.com/ignore-files/ for
2
3  # compiled output
4  /dist
5  /tmp
6  /out-tsc
7  # Only exists if Bazel was run
8  /bazel-out
9
10 # dependencies
11 /node_modules
12
13 # profiling files
14 chrome-profiler-events*.json
15
16 # IDEs and editors
17 /.idea
18 .project
19 .classpath
20 .c9/
21 *.launch
22 .settings/
23 *.sublime-workspace
```

Angular.json es el archivo principal de configuración del proyecto



El archivo karma.conf.js son las configuraciones para pruebas unitarias basadas en karma



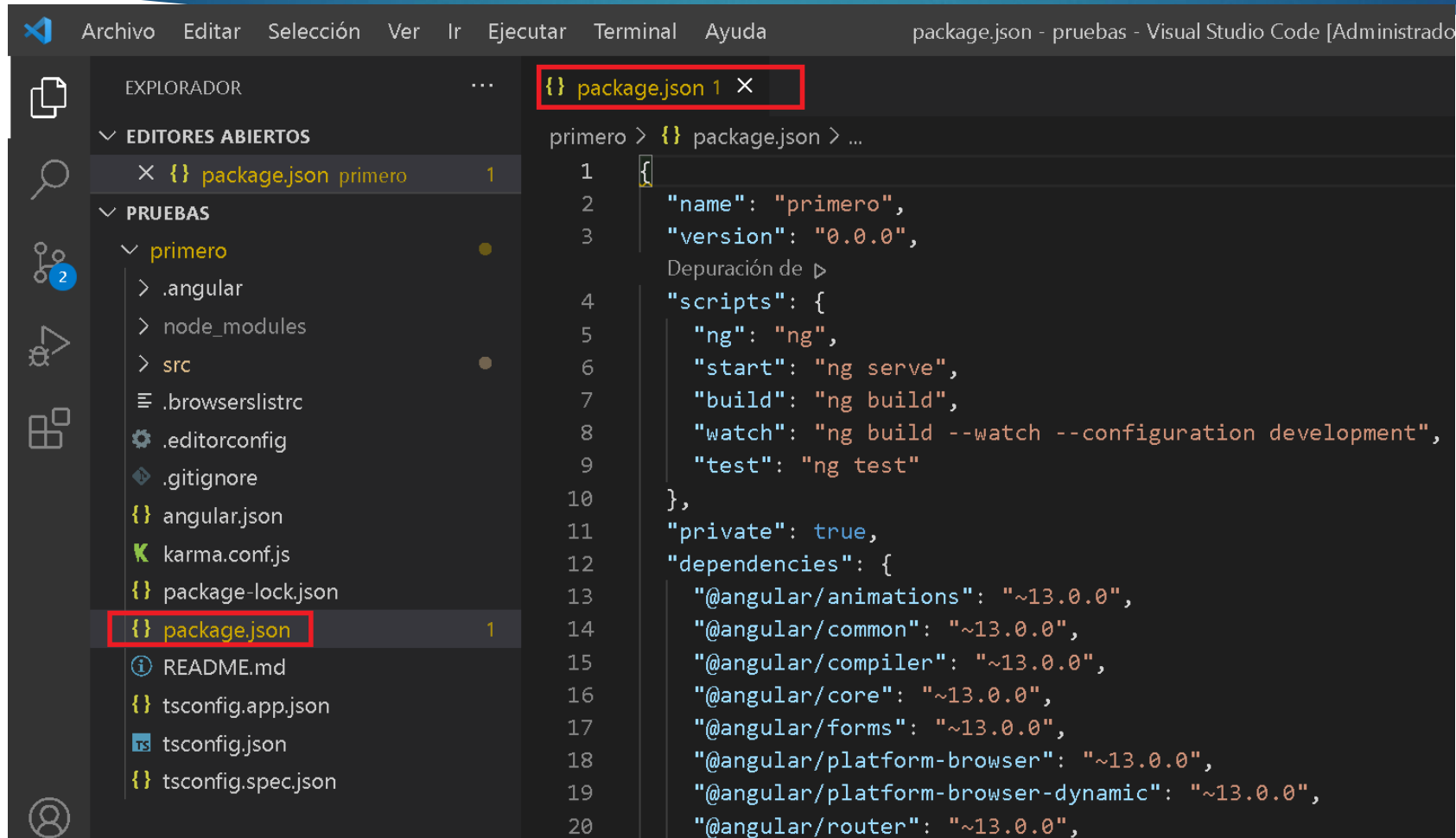
Visual Studio Code interface showing the `karma.conf.js` file. The Explorer sidebar on the left shows the file structure, with `karma.conf.js` highlighted. The main editor displays the content of `karma.conf.js`, which is a Karma configuration file. The terminal at the bottom shows the current directory path.

```
1 // Karma configuration file, see link for more information
2 // https://karma-runner.github.io/1.0/config/configuration-file.html
3
4 module.exports = function (config) {
5   config.set({
6     basePath: '',
7     frameworks: ['jasmine', '@angular-devkit/build-angular'],
8     plugins: [
9       require('karma-jasmine'),
10      require('karma-chrome-launcher'),
11      require('karma-jasmine-html-reporter'),
12      require('karma-coverage'),
13      require('@angular-devkit/build-angular/plugins/karma')
14    ],
15    client: {
16      jasmine: {
17        // you can add configuration options for Jasmine here
18        // the possible options are listed at https://jasmine.github.io/api/edge/
19        // for example, you can disable the random execution with `random: false`
20        // or set a specific seed with `seed: 4321`
21      }
22    }
23  });
24 }
```

Terminal output:

```
C:\Users\dell\Desktop\pruebas\primero>
```

El package.json contiene todas las dependencias del proyecto, versiones



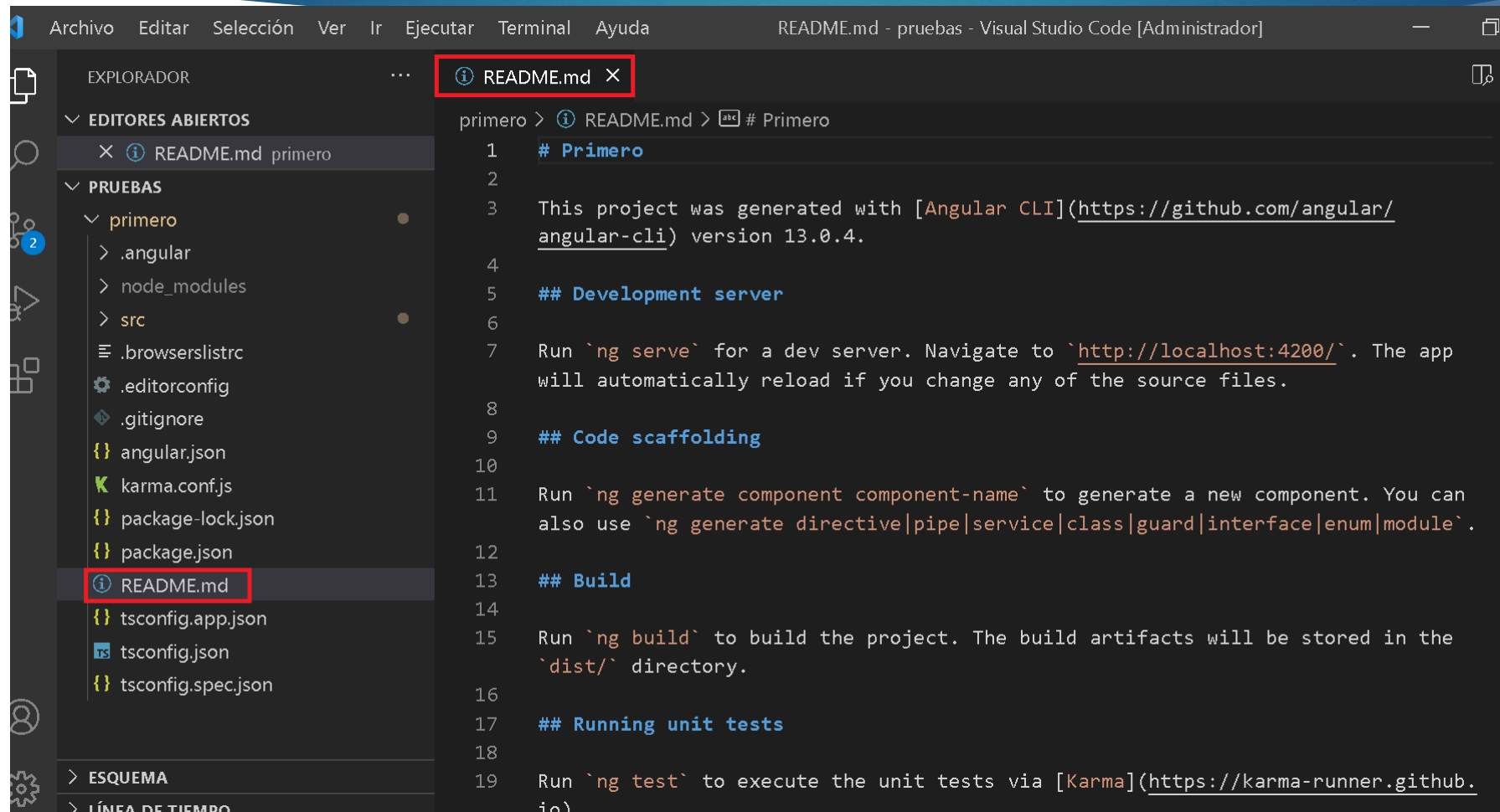
The screenshot shows the Visual Studio Code interface with the Explorer view on the left and the Editor view on the right. The Explorer view shows the file structure of a project named 'pruebas'. The 'package.json' file is highlighted in the Explorer view. The Editor view shows the content of the 'package.json' file, which is a JSON object containing project metadata and dependencies.

```
pruebas > {} package.json > ...
1  {
2    "name": "pruebas",
3    "version": "0.0.0",
4    "scripts": {
5      "start": "ng serve",
6      "build": "ng build",
7      "watch": "ng build --watch --configuration development",
8      "test": "ng test"
9    },
10   "private": true,
11   "dependencies": {
12     "@angular/animations": "~13.0.0",
13     "@angular/common": "~13.0.0",
14     "@angular/compiler": "~13.0.0",
15     "@angular/core": "~13.0.0",
16     "@angular/forms": "~13.0.0",
17     "@angular/platform-browser": "~13.0.0",
18     "@angular/platform-browser-dynamic": "~13.0.0",
19     "@angular/router": "~13.0.0",
20
```


100



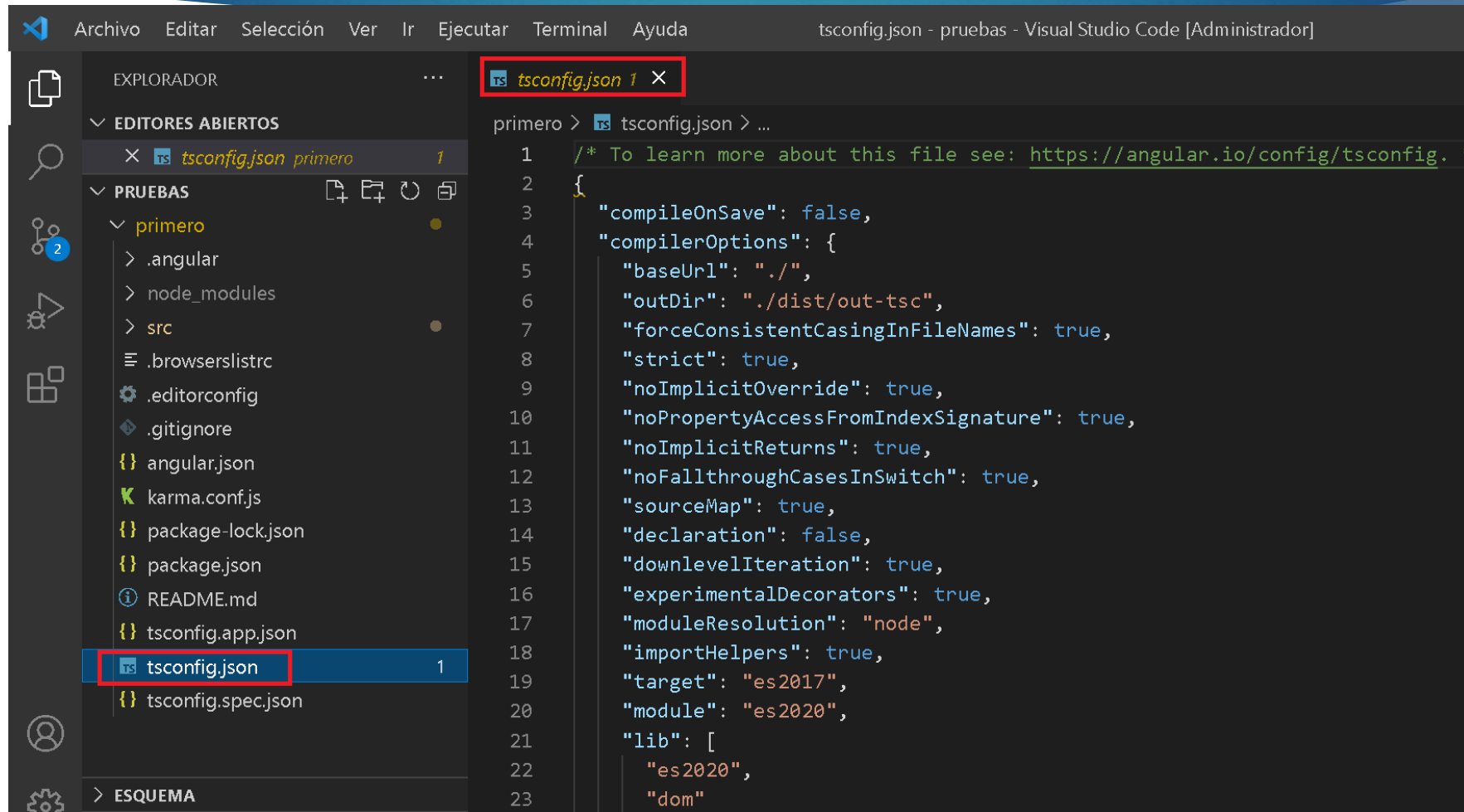
El archivo README.md es básicamente una documentación o guía para el proyecto



The screenshot shows the Visual Studio Code interface. In the Explorer view on the left, the file `README.md` is highlighted with a red box. The Editor view on the right displays the content of `README.md`, which includes a title `# Primero`, a description of the project generated with Angular CLI, and instructions for running the development server, building the project, and running unit tests.

```
primero > README.md > # Primero
1  # Primero
2
3  This project was generated with [Angular CLI](https://github.com/angular/
angular-cli) version 13.0.4.
4
5  ## Development server
6
7  Run `ng serve` for a dev server. Navigate to `http://localhost:4200/`. The app
will automatically reload if you change any of the source files.
8
9  ## Code scaffolding
10
11 Run `ng generate component component-name` to generate a new component. You can
also use `ng generate directive|pipe|service|class|guard|interface|enum|module`.
12
13 ## Build
14
15 Run `ng build` to build the project. The build artifacts will be stored in the
`dist/` directory.
16
17 ## Running unit tests
18
19 Run `ng test` to execute the unit tests via [Karma](https://karma-runner.github.
io)
```

El archivo tsconfig nos ayuda con la alertas, variables, clases ,decoradores todo lo relacionado a como queremos que funcione typescript en nuestro proyecto

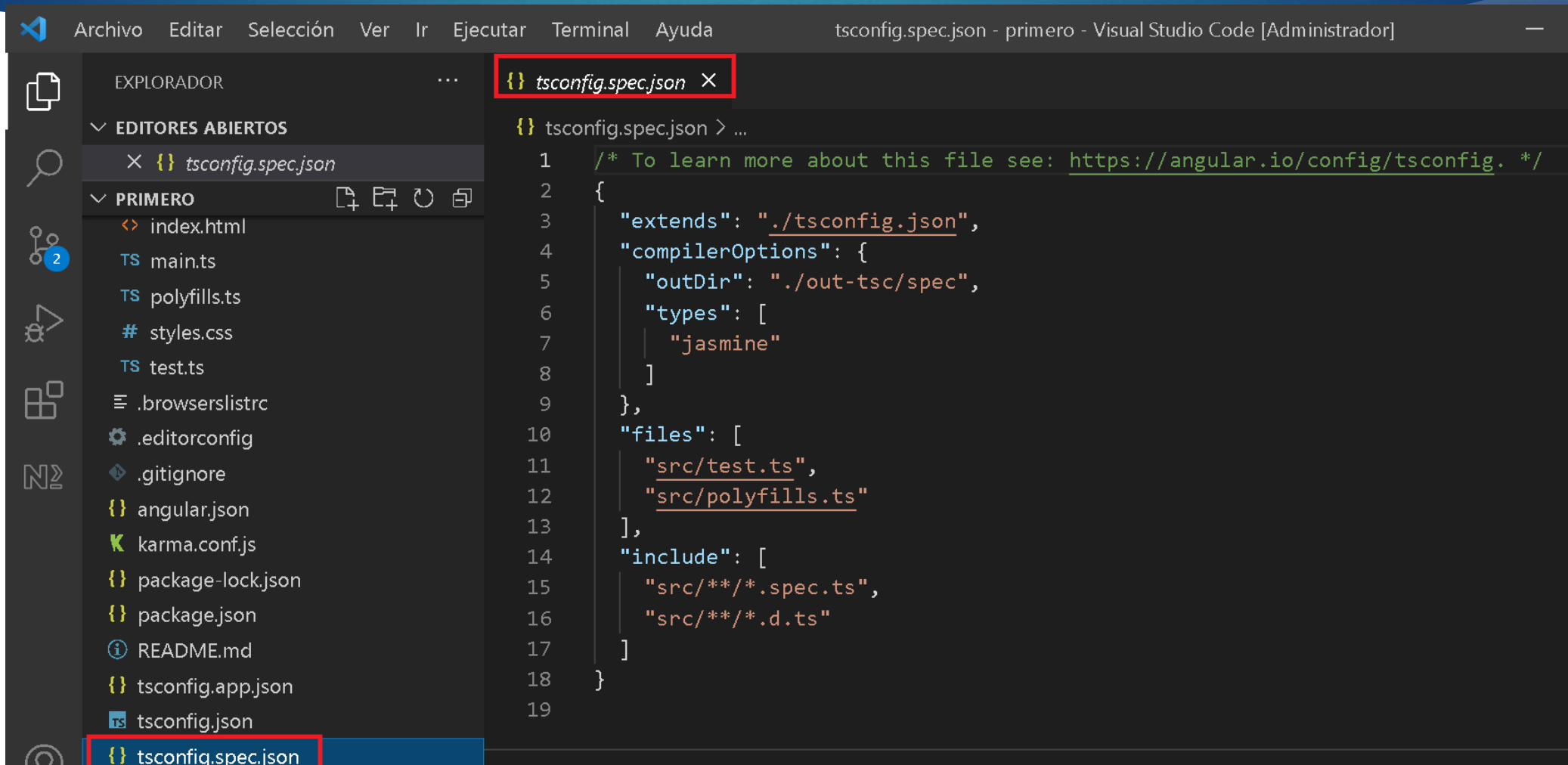


```
tsconfig.json - pruebas - Visual Studio Code [Administrador]

EXPLORADOR
  EDITORES ABIERTOS
    tsconfig.json primero 1
  PRUEBAS
    primero
      .angular
      node_modules
      src
      .browserslistrc
      .editorconfig
      .gitignore
      angular.json
      karma.conf.js
      package-lock.json
      package.json
      README.md
      tsconfig.app.json
      tsconfig.json 1
      tsconfig.spec.json
  ESQUEMA

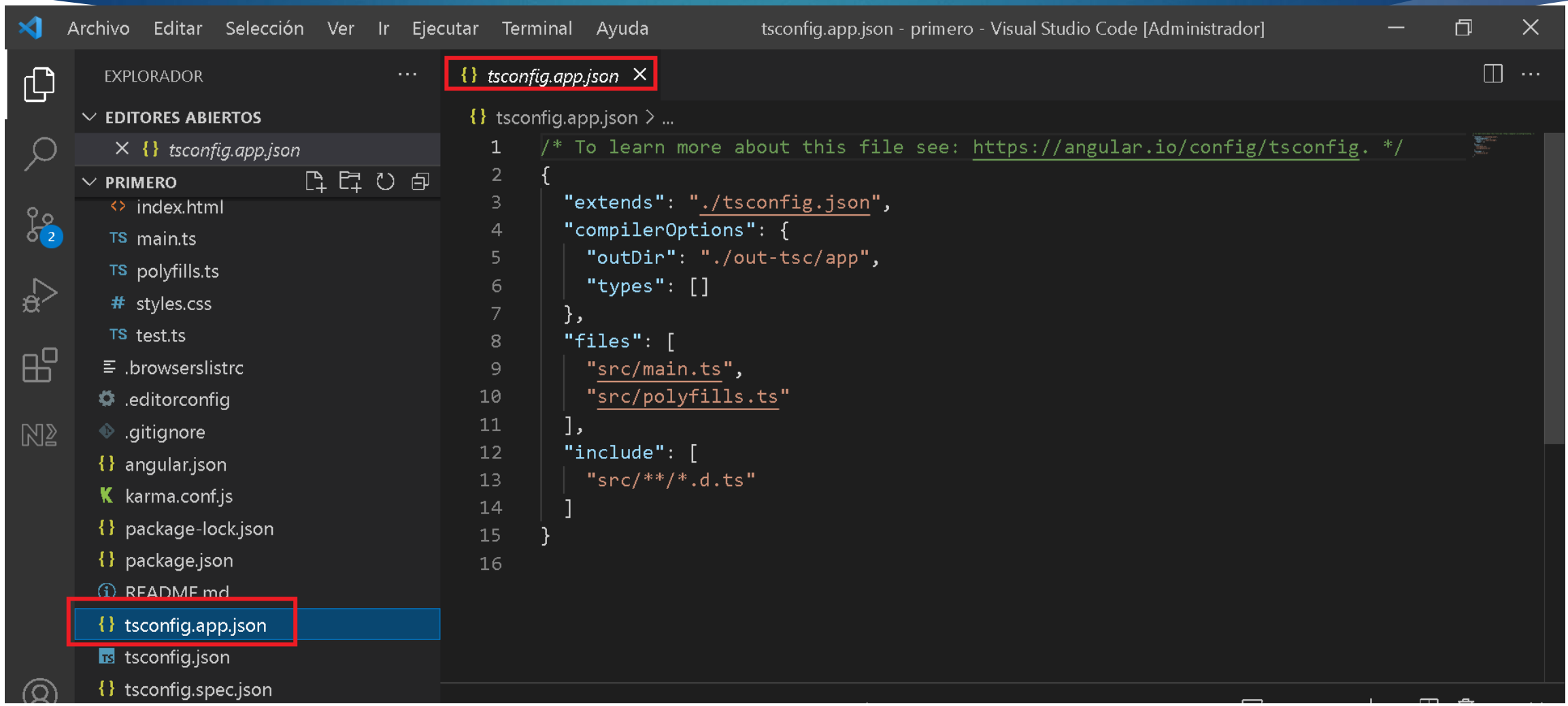
primero > tsconfig.json > ...
1  /* To learn more about this file see: https://angular.io/config/tsconfig.
2  {
3    "compileOnSave": false,
4    "compilerOptions": {
5      "baseUrl": "./",
6      "outDir": "./dist/out-tsc",
7      "forceConsistentCasingInFileNames": true,
8      "strict": true,
9      "noImplicitOverride": true,
10     "noPropertyAccessFromIndexSignature": true,
11     "noImplicitReturns": true,
12     "noFallthroughCasesInSwitch": true,
13     "sourceMap": true,
14     "declaration": false,
15     "downlevelIteration": true,
16     "experimentalDecorators": true,
17     "moduleResolution": "node",
18     "importHelpers": true,
19     "target": "es2017",
20     "module": "es2020",
21     "lib": [
22       "es2020",
23       "dom"
```

El archivo `tsconfig.spec.json`, llama al archivo `tsconfig.json` y añada mas configuraciones relacionadas a pruebas unitarias



```
tsconfig.spec.json > ...
1  /* To learn more about this file see: https://angular.io/config/tsconfig. */
2  {
3      "extends": "./tsconfig.json",
4      "compilerOptions": {
5          "outDir": "./out-tsc/spec",
6          "types": [
7              "jasmine"
8          ]
9      },
10     "files": [
11         "src/test.ts",
12         "src/polyfills.ts"
13     ],
14     "include": [
15         "src/**/*.spec.ts",
16         "src/**/*.d.ts"
17     ]
18 }
19
```

El archivo `tsconfig.app.json` llama al archivo `tsconfig.json` y agrega mas configuraciones respecto a la aplicación



tsconfig.app.json - primero - Visual Studio Code [Administrador]

EXPLORADOR

EDITORIOS ABIERTOS

- tsconfig.app.json

PRIMERO

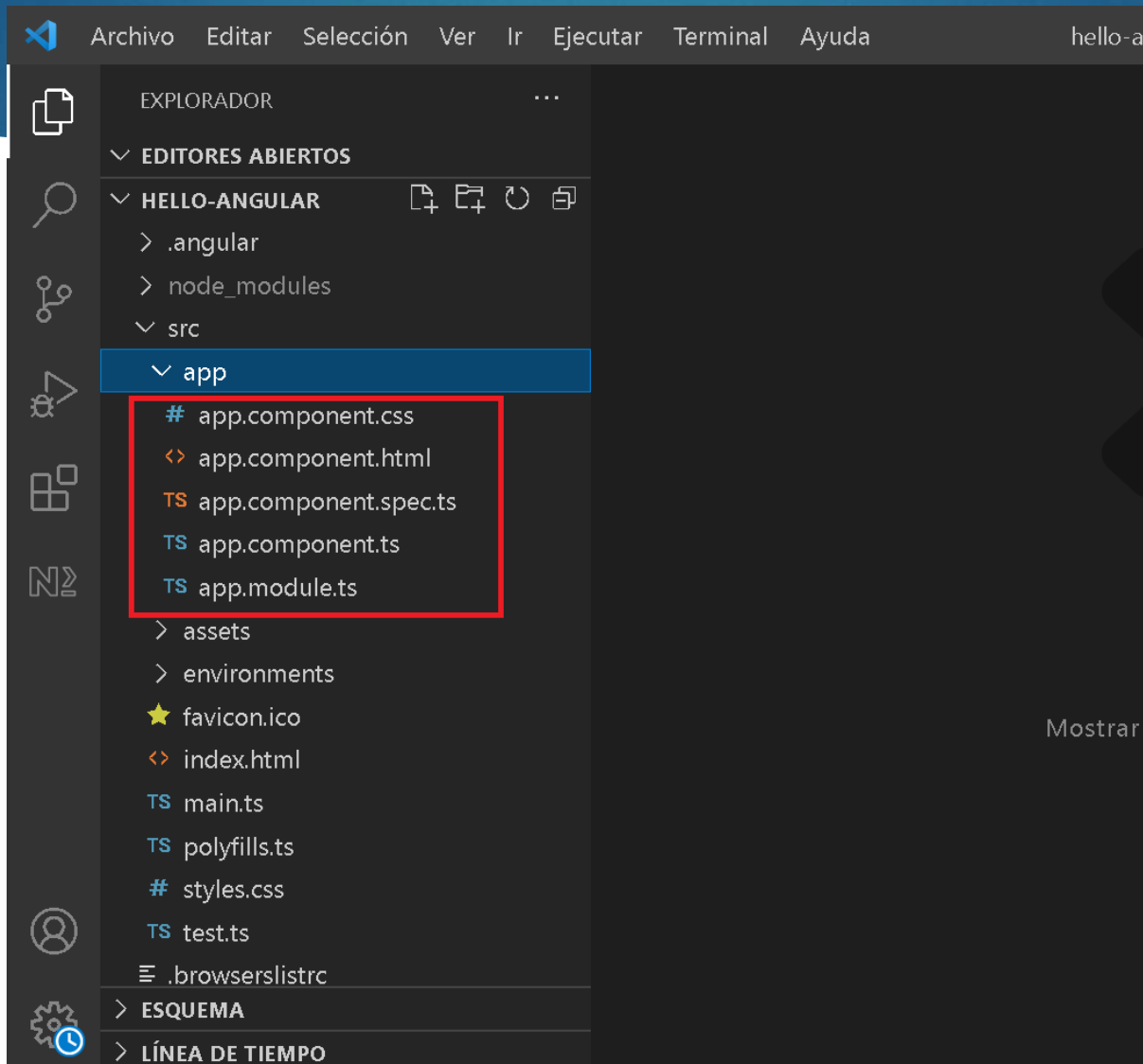
- index.html
- TS main.ts
- TS polyfills.ts
- # styles.css
- TS test.ts
- .browserslistrc
- .editorconfig
- .gitignore
- angular.json
- karma.conf.js
- package-lock.json
- package.json
- README.md
- tsconfig.app.json**
- tsconfig.json
- tsconfig.spec.json

```
{} tsconfig.app.json > ...
1  /* To learn more about this file see: https://angular.io/config/tsconfig. */
2  {
3    "extends": "./tsconfig.json",
4    "compilerOptions": {
5      "outDir": "./out-tsc/app",
6      "types": []
7    },
8    "files": [
9      "src/main.ts",
10     "src/polyfills.ts"
11   ],
12   "include": [
13     "src/**/*.d.ts"
14   ]
15 }
16
```

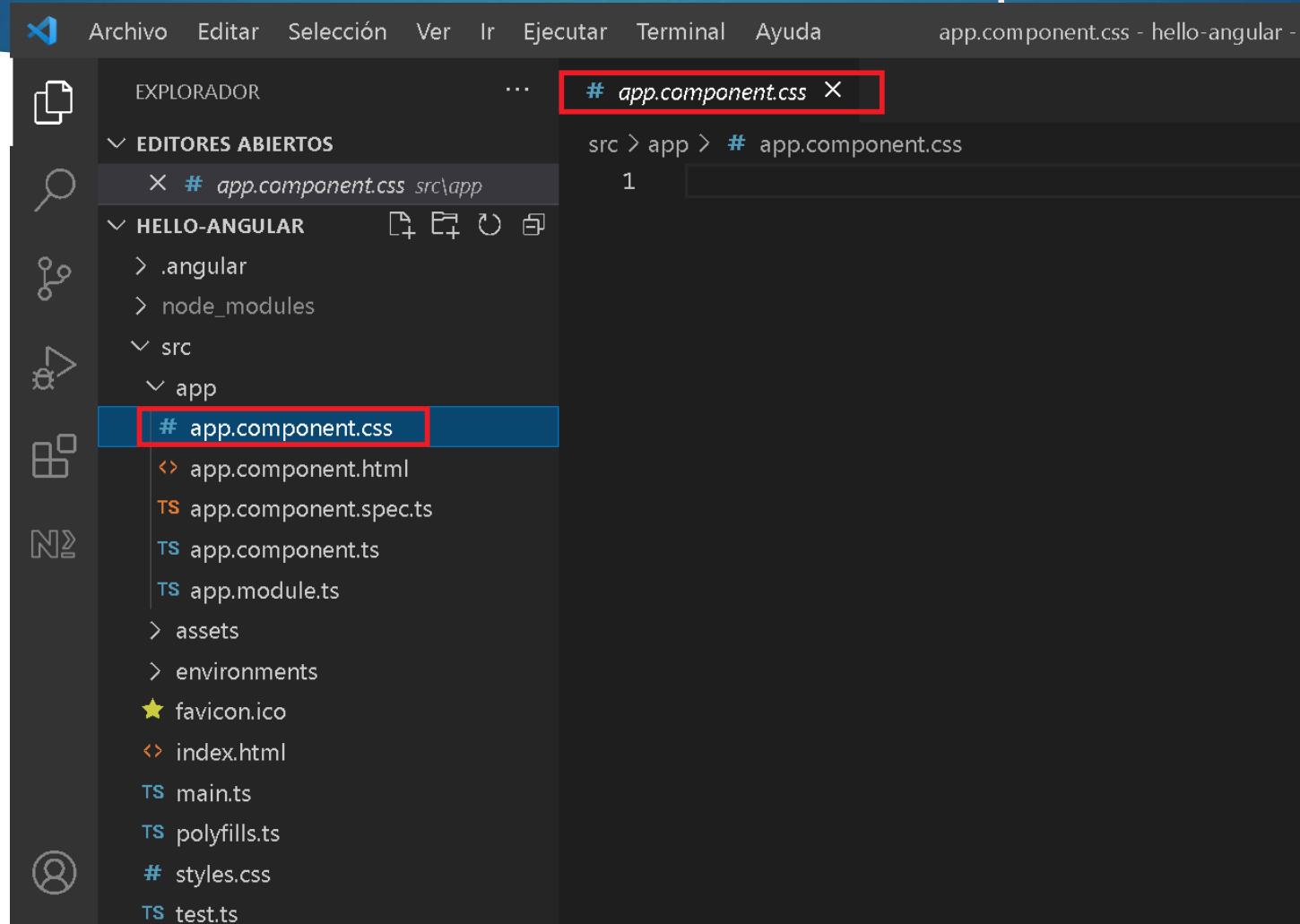


Explorando los archivos internos de src

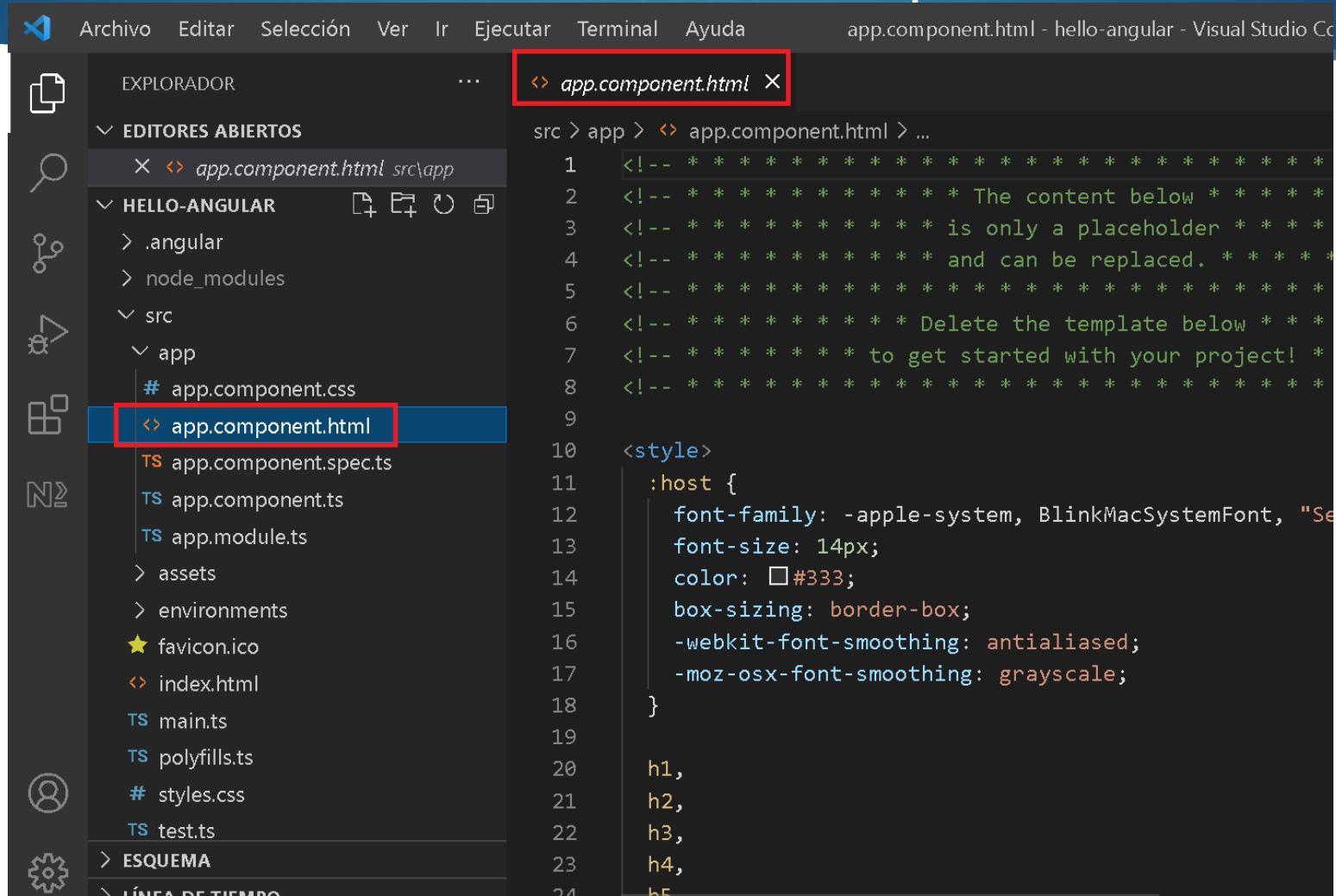
Directorio app, van los componentes de nuestra aplicacion



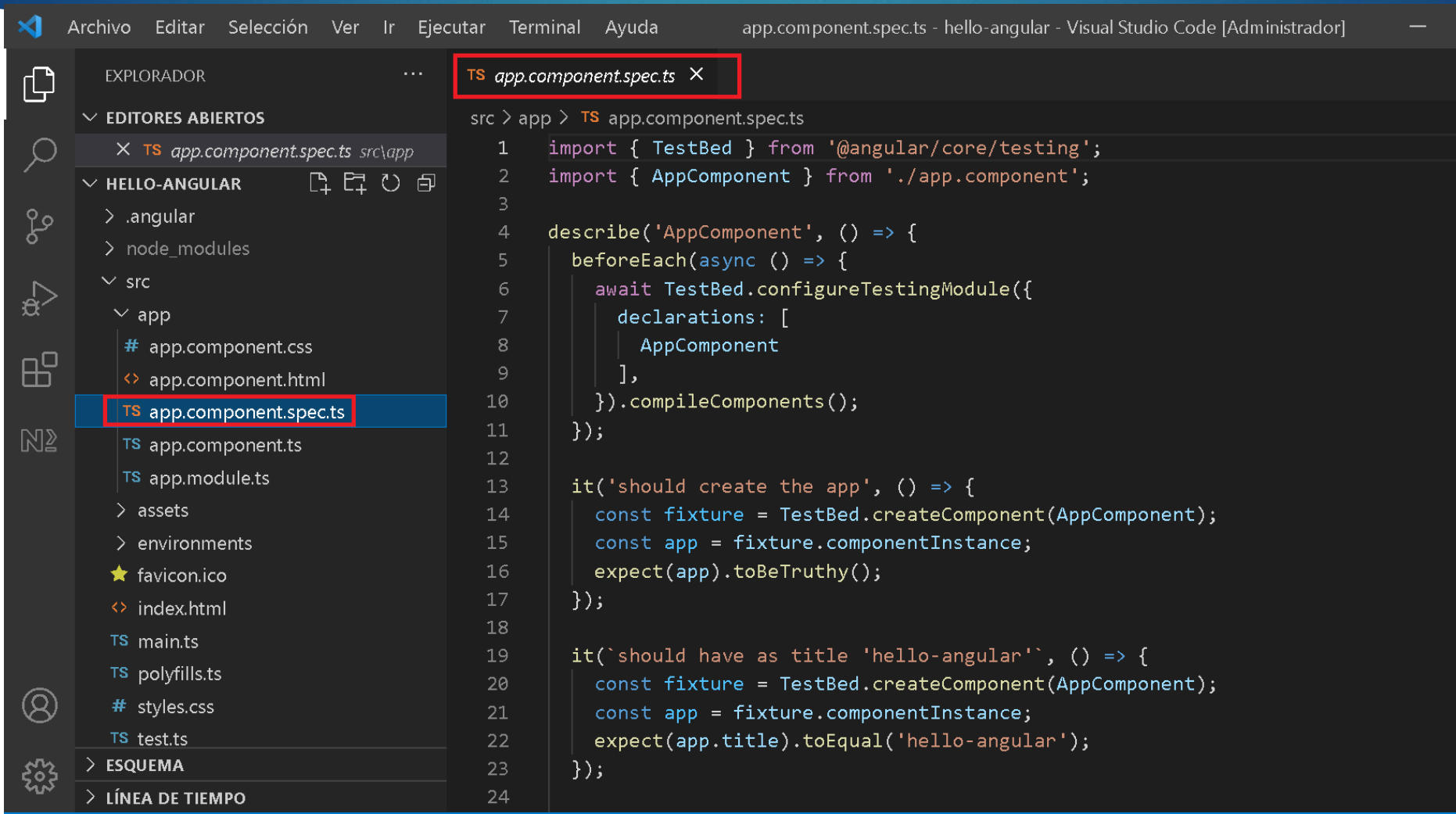
App.component.css se encarga de todo el contenido css del componente



App.component.html contiene todo el html o vista del componente



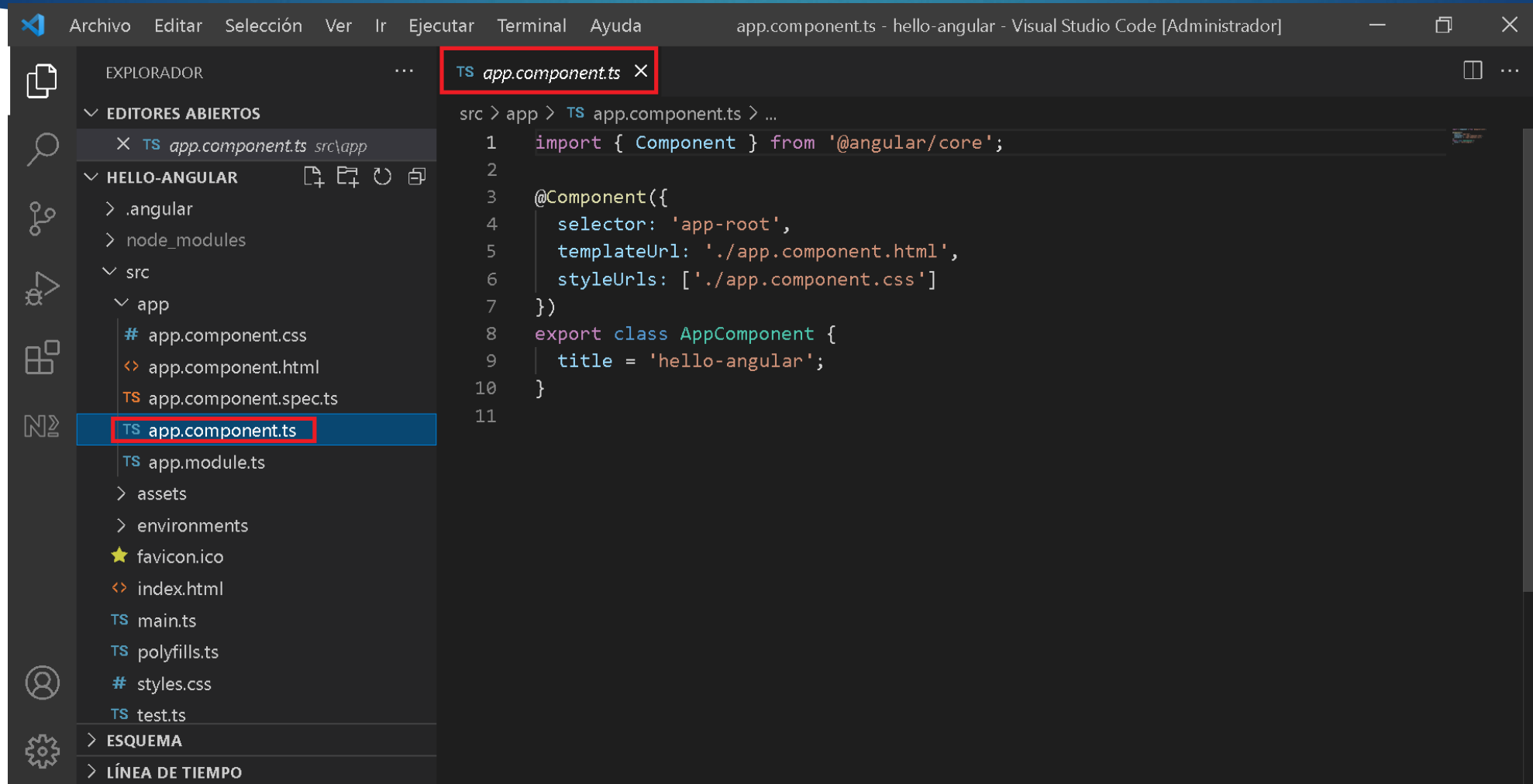
App.component.spec.ts para realizar pruebas unitarias



The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left displays the project structure for 'HELLO-ANGULAR'. The file 'app.component.spec.ts' is highlighted in the Explorer and also in the Editor tab at the top. The Editor window shows the content of 'app.component.spec.ts'.

```
src > app > TS app.component.spec.ts
1  import { TestBed } from '@angular/core/testing';
2  import { AppComponent } from './app.component';
3
4  describe('AppComponent', () => {
5    beforeEach(async () => {
6      await TestBed.configureTestingModule({
7        declarations: [
8          AppComponent
9        ],
10     }).compileComponents();
11   });
12
13   it('should create the app', () => {
14     const fixture = TestBed.createComponent(AppComponent);
15     const app = fixture.componentInstance;
16     expect(app).toBeTruthy();
17   });
18
19   it(`should have as title 'hello-angular'`, () => {
20     const fixture = TestBed.createComponent(AppComponent);
21     const app = fixture.componentInstance;
22     expect(app.title).toEqual('hello-angular');
23   });
24 }
```

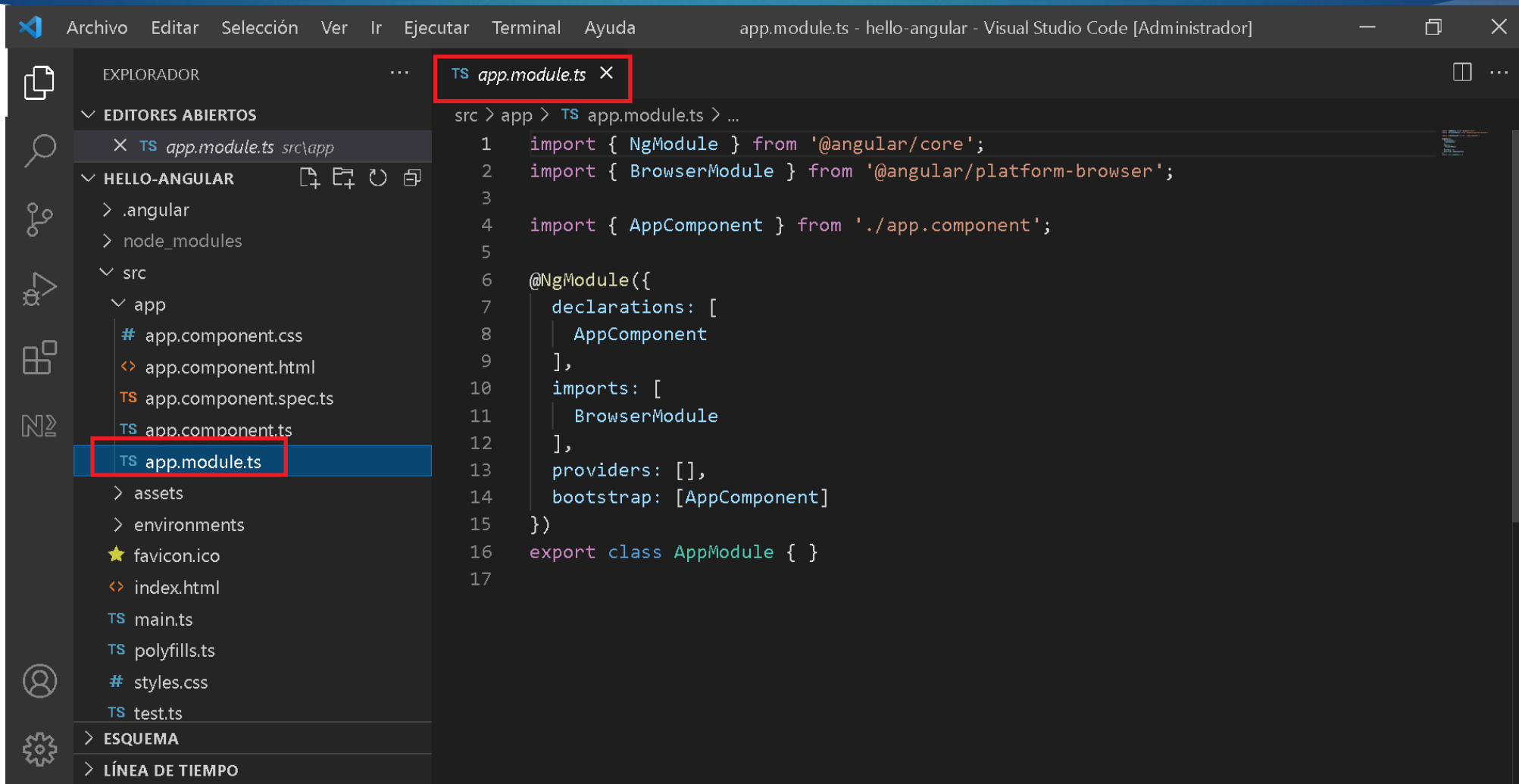
Es una clase que representa a una parte de nuestra aplicacion web



The screenshot shows the Visual Studio Code interface with the file explorer on the left and the code editor on the right. The Explorer view shows the project structure with the file `TS app.component.ts` highlighted. The Editor view shows the content of `app.component.ts`, which is a TypeScript class representing an Angular component.

```
src > app > TS app.component.ts > ...
1  import { Component } from '@angular/core';
2
3  @Component({
4    selector: 'app-root',
5    templateUrl: './app.component.html',
6    styleUrls: ['./app.component.css']
7  })
8  export class AppComponent {
9    title = 'hello-angular';
10 }
11
```

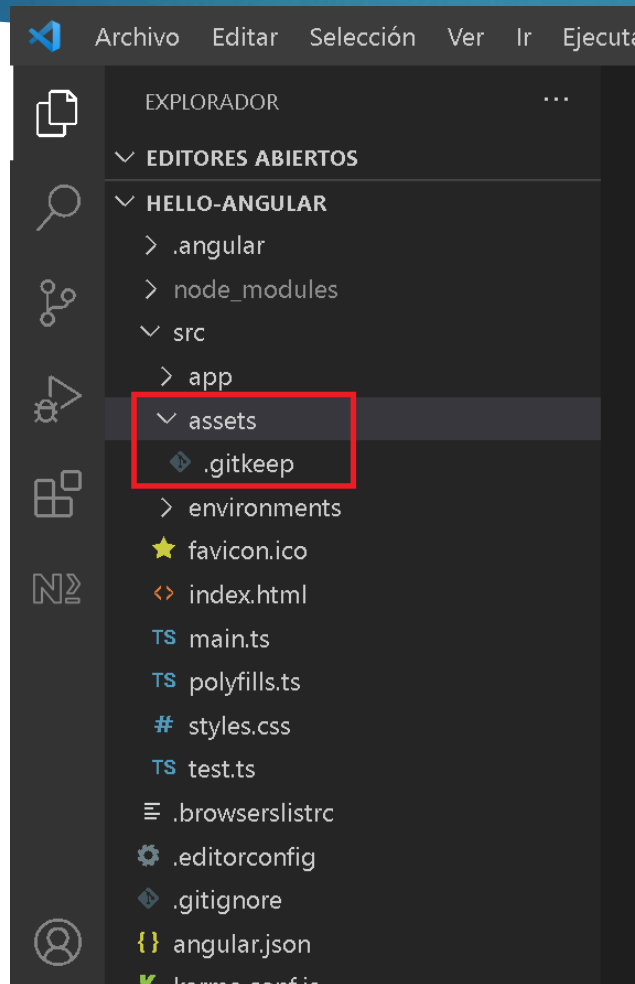
app.module.ts es como un repositorio donde se registra nuestro componente y todo lo que podríamos utilizar en el



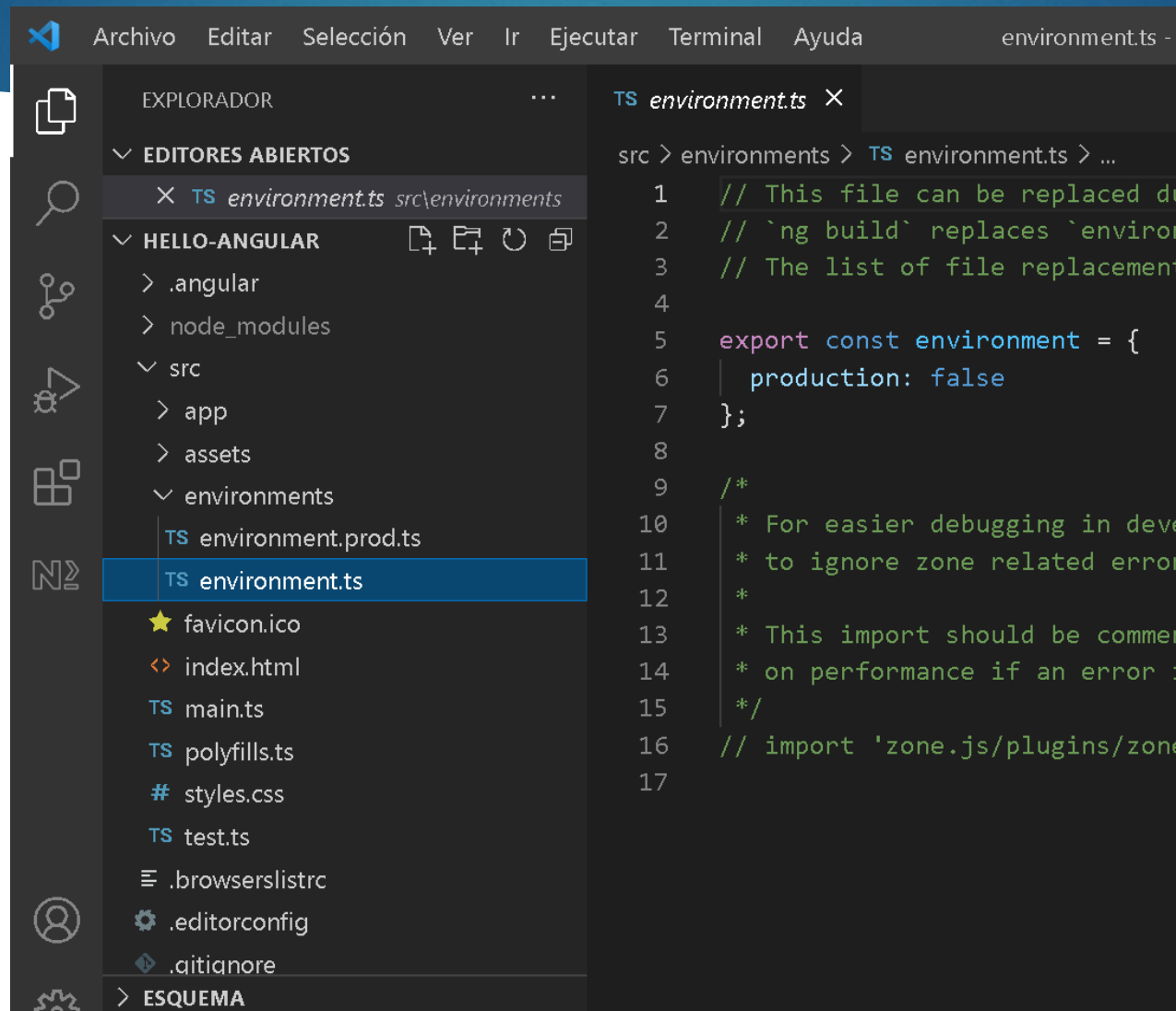
The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left displays the project structure for 'HELLO-ANGULAR'. The file 'TS app.module.ts' is selected and highlighted with a red box. The Editor pane on the right shows the content of 'app.module.ts', which is also highlighted with a red box in the tab bar. The code defines an Angular module named 'AppModule' that imports 'AppComponent' and 'BrowserModule'.

```
src > app > TS app.module.ts > ...
1  import { NgModule } from '@angular/core';
2  import { BrowserModule } from '@angular/platform-browser';
3
4  import { AppComponent } from './app.component';
5
6  @NgModule({
7    declarations: [
8      AppComponent
9    ],
10   imports: [
11     BrowserModule
12   ],
13   providers: [],
14   bootstrap: [AppComponent]
15 })
16 export class AppModule { }
17
```

En el directorio assets se guarda todo el contenido estático de nuestra aplicación



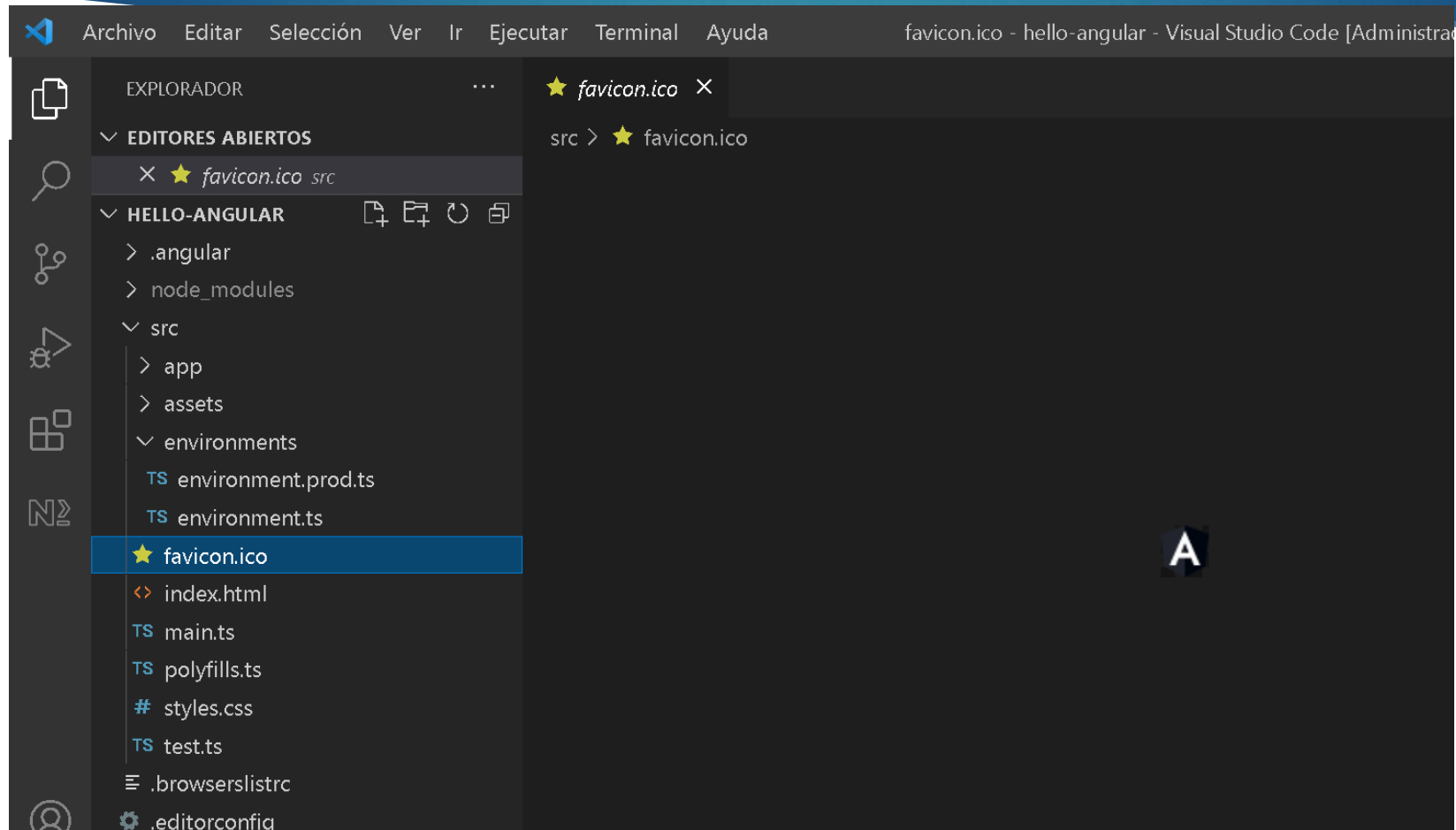
El directorio environments contiene los archivos de configuración de ambientes de desarrollo y producción de la aplicación



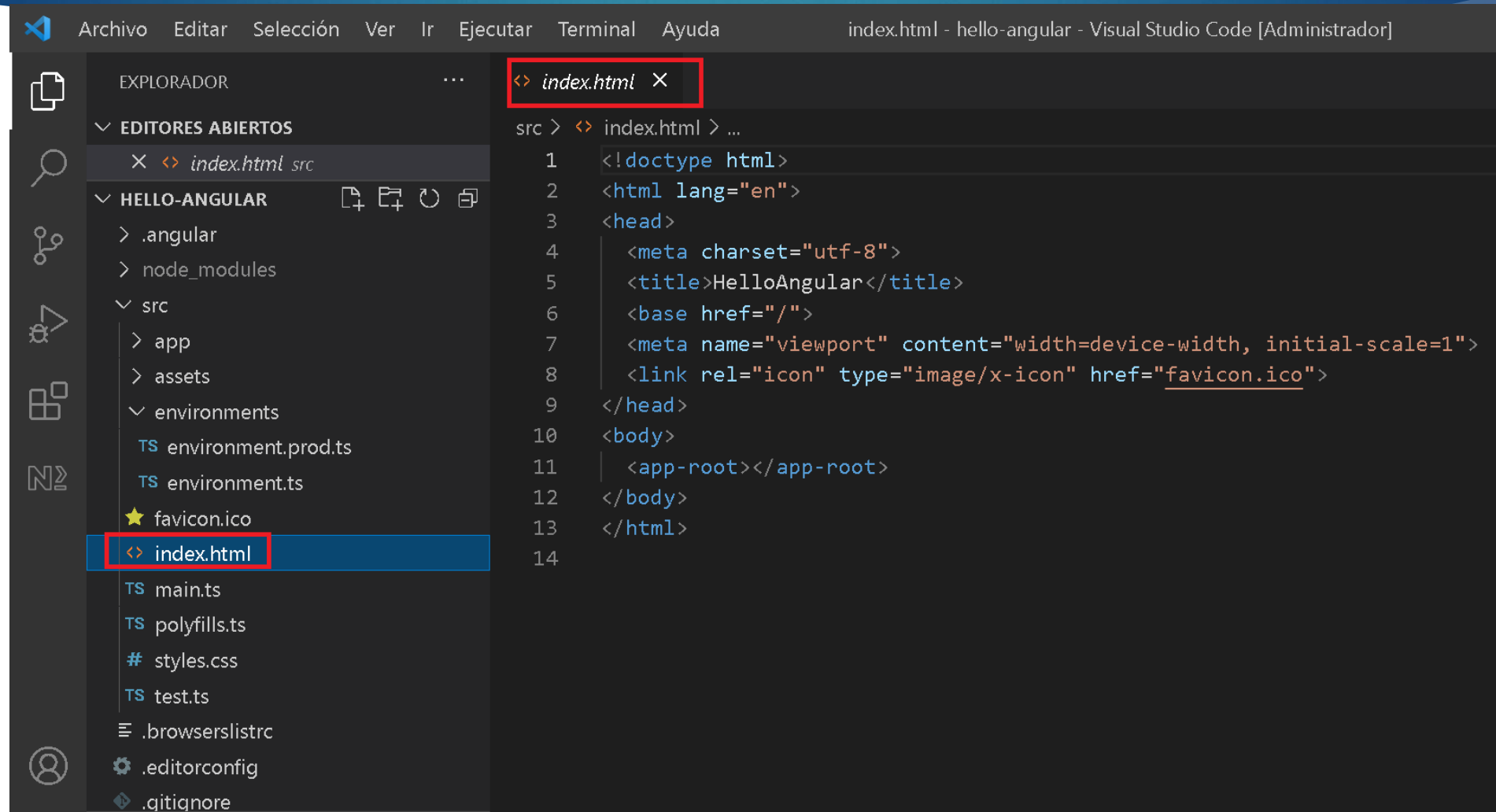
The screenshot shows the Visual Studio Code interface. On the left, the 'EXPLORADOR' (Explorer) sidebar is open, showing the project structure. The 'src' directory is expanded, and the 'environments' subdirectory is selected. Inside 'environments', the file 'TS environment.ts' is highlighted. The main editor area on the right displays the content of 'environment.ts'.

```
src > environments > TS environment.ts > ...
1  // This file can be replaced during build for environments
2  // that support different configurations; uncomment this section
3  // The list of file replacements:
4
5  export const environment = {
6    production: false
7  };
8
9  /*
10   * For easier debugging in development mode, you can
11   * to ignore zone related error stack frames such as
12   *
13   * This import should be commented out in production mode because
14   * on performance if an error is caught in a zone, the
15   */
16  // import 'zone.js/plugins/zone-error'
17
```

El archivo favicon.ico es la imagen que nos muestra por default en el tab de los navegadores



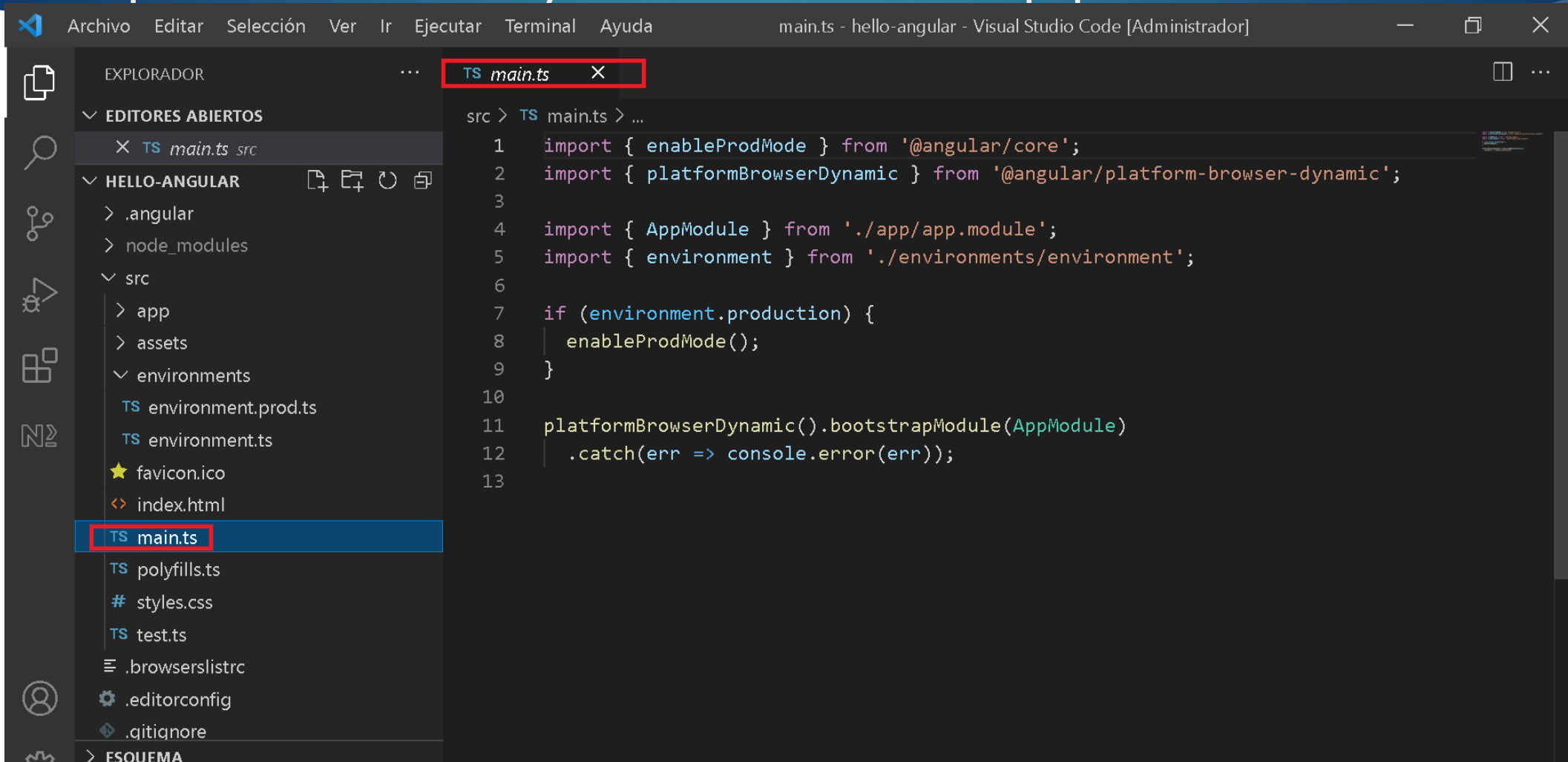
El archivo index.html es la pagina principal de la aplicacion



The screenshot shows the Visual Studio Code interface with the 'index.html' file open in the Editor. The Explorer view on the left shows the project structure, with 'index.html' highlighted in the 'src' folder. The Editor view shows the content of 'index.html'.

```
src > <> index.html > ...
1  <!doctype html>
2  <html lang="en">
3  <head>
4      <meta charset="utf-8">
5      <title>HelloAngular</title>
6      <base href="/">
7      <meta name="viewport" content="width=device-width, initial-scale=1">
8      <link rel="icon" type="image/x-icon" href="favicon.ico">
9  </head>
10 <body>
11     <app-root></app-root>
12 </body>
13 </html>
14
```

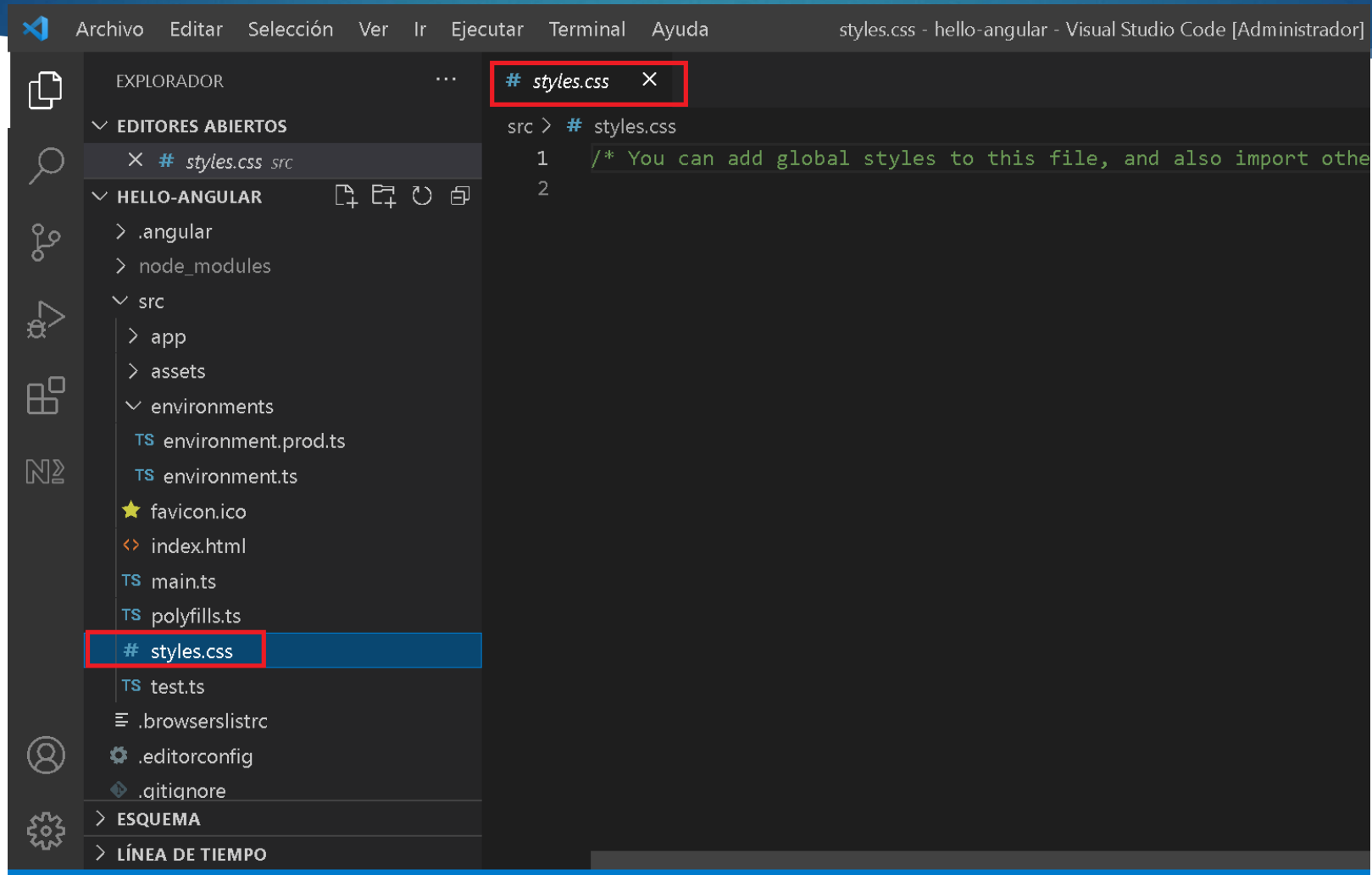

El archivo main.ts es la clase principal que levanta y arranca el app.module



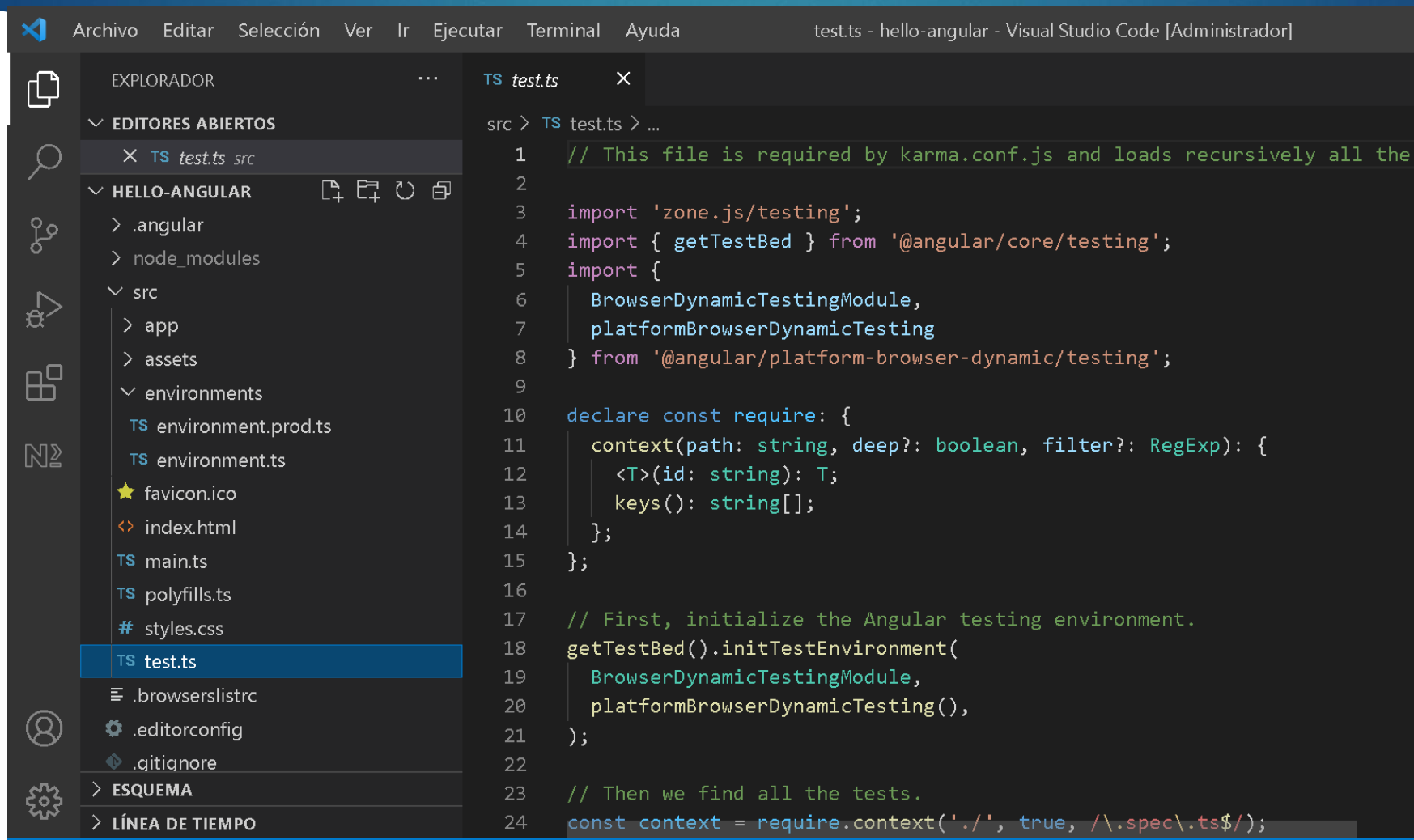
The screenshot shows the Visual Studio Code interface with the 'main.ts' file open. The Explorer sidebar on the left shows the project structure, with 'main.ts' highlighted. The Editor pane on the right displays the code for 'main.ts'.

```
src > TS main.ts > ...
1  import { enableProdMode } from '@angular/core';
2  import { platformBrowserDynamic } from '@angular/platform-browser-dynamic';
3
4  import { AppModule } from './app/app.module';
5  import { environment } from './environments/environment';
6
7  if (environment.production) {
8    enableProdMode();
9  }
10
11  platformBrowserDynamic().bootstrapModule(AppModule)
12    .catch(err => console.error(err));
13
```

El archivo style.css para aplicar estilos globales en la aplicación



El archivo test.ts para configuración de pruebas unitarias



The screenshot shows the Visual Studio Code interface with the 'test.ts' file open in the editor. The file is located in the 'src' directory of the 'HELLO-ANGULAR' project. The file content is as follows:

```
src > TS test.ts > ...
1 // This file is required by karma.conf.js and loads recursively all the
2
3 import 'zone.js/testing';
4 import { TestBed } from '@angular/core/testing';
5 import {
6   BrowserDynamicTestingModule,
7   platformBrowserDynamicTesting
8 } from '@angular/platform-browser-dynamic/testing';
9
10 declare const require: {
11   context(path: string, deep?: boolean, filter?: RegExp): {
12     <T>(id: string): T;
13     keys(): string[];
14   };
15 };
16
17 // First, initialize the Angular testing environment.
18 TestBed.configureTestingModule(
19   BrowserDynamicTestingModule,
20   platformBrowserDynamicTesting(),
21 );
22
23 // Then we find all the tests.
24 const context = require.context('./', true, /\.spec\.ts$/);
```

The Explorer sidebar on the left shows the project structure, with 'test.ts' selected under the 'src' directory. The top bar indicates the file is 'test.ts - hello-angular - Visual Studio Code [Administrador]'.