Angular 8 : Online Class

12 Feb 2020

By: Sahosoft Solutions

Presented by : Chandan Kumar

Angular Environment Setup

In this class we will learn how to configure an Angular 8 application development environment.
To Set up Development Environment for Angular 8, we require the following-

- IDE for writing your code (Editor)
- Nodejs
- Npm
- Angular CLI

IDE for writing your code (Editor)

There are many editors that can be used for Angular 8 development such as Visual Studio code and WebStorm. In this course, we will use the Visual Studio code, which is free from Microsoft.

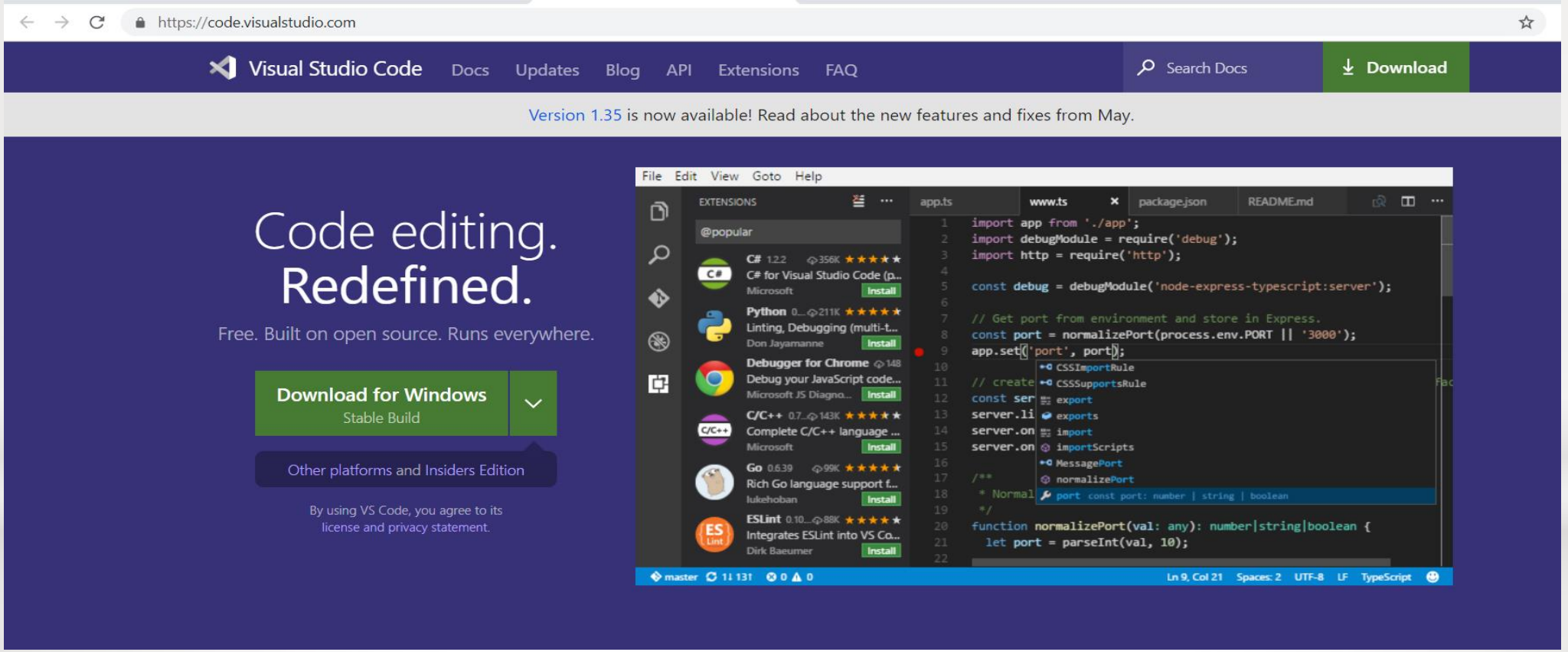
Installation of Visual Studio Code

- Some features of Visual Studio Code are following−
- Light editor as compared to the actual version of Visual Studio.
- It can be used for coding languages such as Clojure, Java, Objective-C, and many other languages.
- It supports built-in Git extension so that you can work with source control without leaving the editor.
- It includes built-in support for IntelliSense code completion, rich semantic code understanding and navigation, and code refactoring.
- It includes an interactive debugger, so you can step through source code, inspect variables, view call stacks, etc.
- Many more extensions for development.

Note: The link of official site for Visual Studio code is https://code.visualstudio.com/

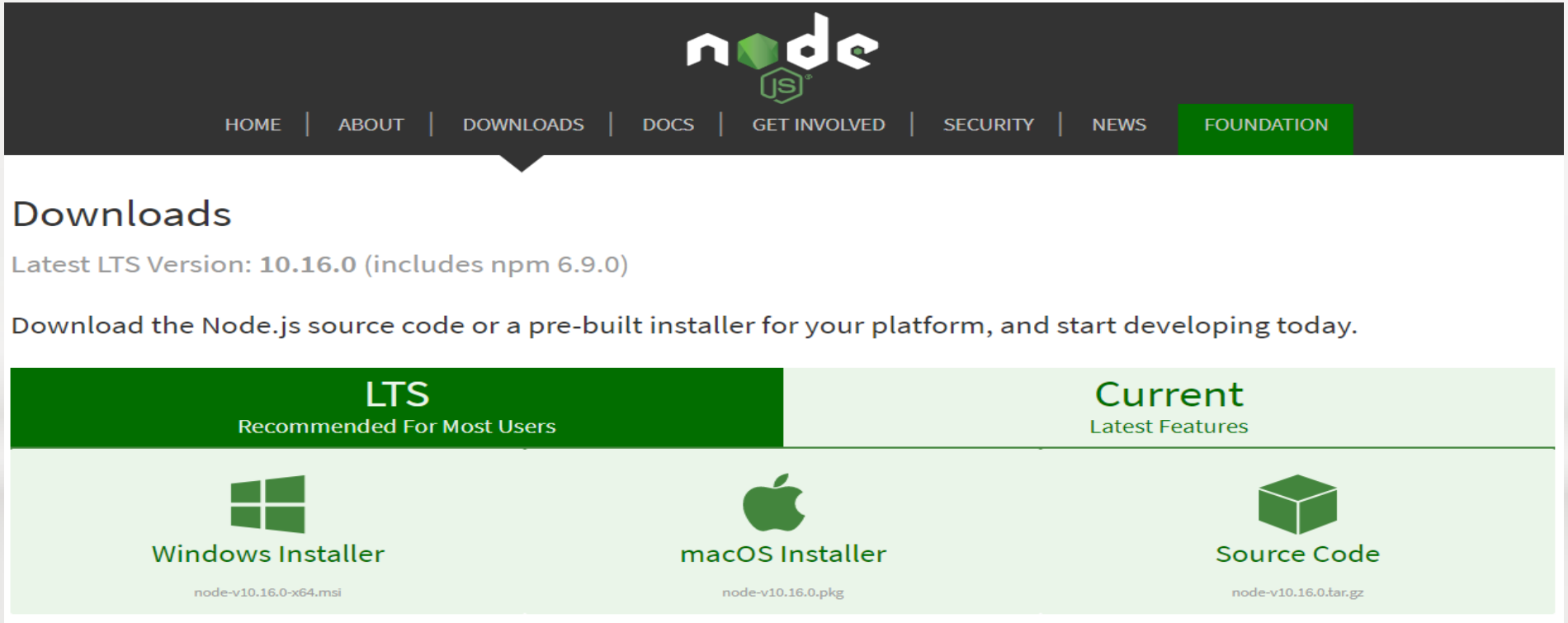
IDE for writing your code (Editor)

https://code.visualstudio.com/



Nodejs

Download Nodejs from https://nodejs.org/en/download/ , and click on the windows installer. you can show here both the LTS and the current version of the node from where the you can download the recommended version or the current version.



Nodejs

After installing the node, open the Visual Studio integral terminal and type node -v to verify the installed version of the node. This will help you to see the version of nodejs currently installed on your system.

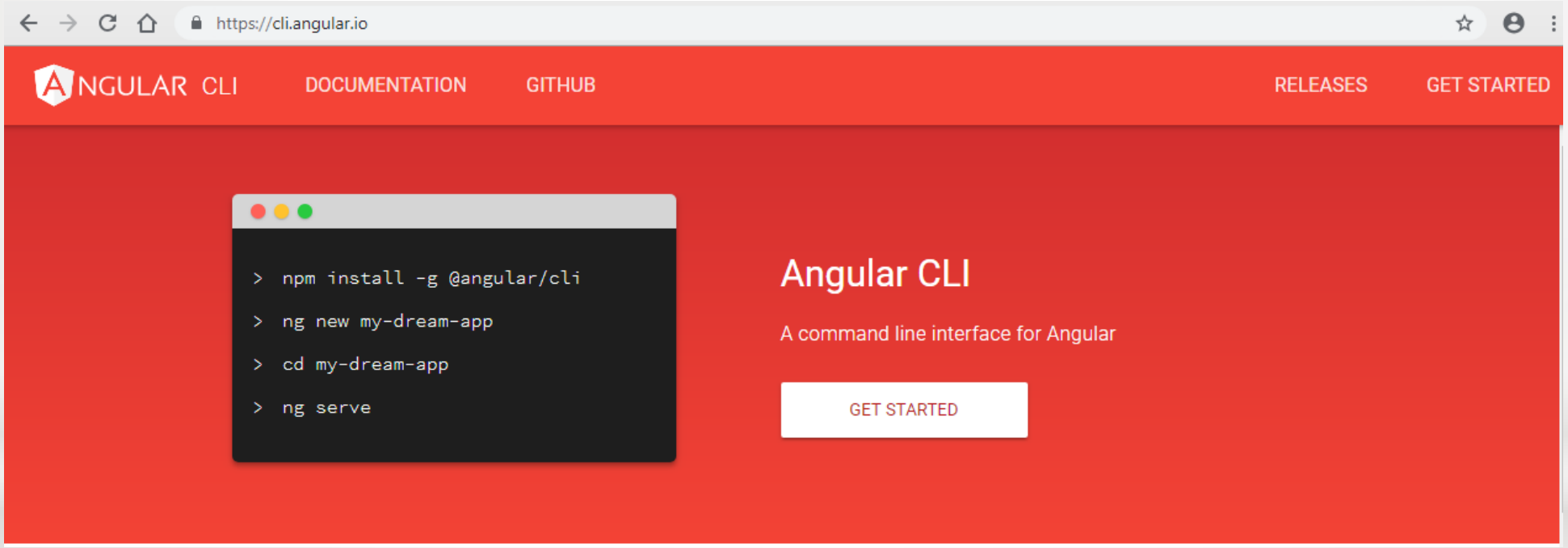
EXAMPLE

C:\>node –v

v8.11.3

Angular CLI

Angular CLI is very important in the setting of Angular, visit the homepage https://cli.angular.io/ of angular to get the reference of the command.



Angular CLI

To install angular cli globally on your system type npm install -g @angular/cli. It installs Angular CLI globally where g is referred to globally.

EXAMPLE
npm install -g @angular/cli
.
If you want to make sure you have correctly installed the angular CLI, open the Visual Studio integrated terminal and type ng -v. If you can see the cli version as shown below, then installation is complete.

Angular CLI


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
Angular CLI: 6.2.3
Node: 10.13.0
OS: win32 x64
Angular: 6.1.8
... animations, common, compiler, compiler-cli, core, forms
... http, language-service, platform-browser
... platform-browser-dynamic, router
Package Version
@angular-devkit/architect 0.7.5
@angular-devkit/build-angular 0.7.5
@angular-devkit/build-optimizer 0.7.5
@angular-devkit/build-webpack 0.7.5
@angular-devkit/core 0.7.5
@angular-devkit/schematics 0.8.3
@angular/cli 6.2.3
@ngtools/webpack 6.1.5
@schematics/angular 0.8.3
@schematics/update 0.8.3
rxjs 6.3.2
typescript 2.7.2
webpack 4.9.2

Summary:

- Verify if npm is installed or not: npm –v
- verify the installed version of the node: npm –v
- Verify if node is installed or not: node –v
- verify the installed version of the node: node –v
- To install angular cli globally on your system type: npm install -g @angular/cli
- To check correctly installed the angular CLI: ng –v

What is Node.js?

Node.js is a server-side platform built on Google Chrome's JavaScript Engine (V8 Engine). Node.js was developed by Ryan Dahl in 2009 and its latest version is v0.10.36.

Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux.

Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent.

- Node.js is an open source server environment
- Node.js is free
- Node.js runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
- Node.js uses JavaScript on the server

What is Node.js?

Node.js = Runtime Environment + JavaScript Library

Where to Use Node.js?

Following are the areas where Node.js is proving itself as a perfect technology partner.

- I/O bound Applications
- Data Streaming Applications
- Data Intensive Real-time Applications (DIRT)
- JSON APIs based Applications
- Single Page Applications

Why does Angular 2 and above need Node.js?

Angular does not need node.js directly. Node js is used for all the build and development tools.

It is not mandatory to use node.js for developing angular application. You can very well go ahead without node.js for developing angular application but it would not be wise to do so.

You do not need to use Node anywhere in production server to use front-end JavaScript frameworks like Angular or react etc.

Use Node and NPM not as production server but as tooling and building Angular apps.

Let me explain you some of the reasons how node.js makes angular app development process easier for us:

Why does Angular 2 and above need Node.js?

- Node allows you to spin up a **lightweight web server** to host your application locally in your system.

- **NPM** (Node Package Manager) comes with node.js by default. NPM allows you to manage your dependencies. So, you don't have to worry for operations like adding a dependency, removing some, updating your package.json.

- Third and the most important, npm gives you **angular cli** or **ng cli**(angular command line interface) . Angular CLI is a great tool for scaffolding your application. So, you don't need to write boilerplates manually.

- Angular recommends the use of TypeScript. Now, your browser does not understand TypeScript. It needs to be transpiled to JavaScript. Also, you need to bundle your js files and stylesheets together with the html doc so as to get the web app CLI which is ready to be hosted. Angular CLI helps you to do all these behind the scene. By default, ng cli uses **webpack** for bundling your application and is very helpful for beginners who have just jumped into web development with angular as it abstracts such complexities.

Why does Angular 2 and above need Node.js?

- Node allows you to spin up a **lightweight web server** to host your application locally in your system.

- **NPM** (Node Package Manager) comes with node.js by default. NPM allows you to manage your dependencies. So, you don't have to worry for operations like adding a dependency, removing some, updating your package.json.

- Third and the most important, npm gives you **angular cli** or **ng cli**(angular command line interface) . Angular CLI is a great tool for scaffolding your application. So, you don't need to write boilerplates manually.

- Angular recommends the use of TypeScript. Now, your browser does not understand TypeScript. It needs to be transpiled to JavaScript. Also, you need to bundle your js files and stylesheets together with the html doc so as to get the web app CLI which is ready to be hosted. Angular CLI helps you to do all these behind the scene. By default, ng cli uses **webpack** for bundling your application and is very helpful for beginners who have just jumped into web development with angular as it abstracts such complexities.

What is Node Package Manager (NPM) ?

NPM (Node Package Manager) is the default package manager for Node.js and is written entirely in **Javascript**. Developed by Isaac Z. Schlueter.

It was initially released in January 12, 2010. NPM manages all the packages and modules for Node.js and consists of command line client npm. It gets installed into the system with installation of Node.js.

Using npm is Free

npm is free to use.

You can download all npm public software packages without any registration or logon.
All **npm** packages are defined in files called **package.json**.

The content of package.json must be written in **JSON**.
At least two fields must be present in the definition file: **name** and **version**.

What is Node Package Manager (NPM) ?

Example

```
{
"name" : "foo",
"version" : "1.2.3",
"description" : "A package for fooing things",
"main" : "foo.js",
"keywords" : ["foo", "fool", "foolish"],
"author" : "John Doe",
"licence" : "ISC"
}
```

Managing Dependencies

npm can manage **dependencies**.
npm can (in one command line) install all the dependencies of a project.
Dependencies are also defined in **package.json**.

NPM can install all the dependencies of a project through the package.json file. It can also update and uninstall packages.

In the package.json file, each dependency can specify a range of valid versions using the semantic versioning scheme, allowing developers to auto-update their packages while at the same time avoiding unwanted breaking changes.

Checking and updating npm version:

Version of npm installed on system can be checked using following syntax:
Syntax:

npm –v

If the installed version is not latest, one can always update it using the given syntax:
Syntax:
npm npm@latest –g

As npm is a global package, **-g** flag is used to update it **globally**.

The World's Largest Software Registry (Library)

- **npm** is the world's largest **Software Registry**.
- The registry contains over 800,000 **code packages**.
- **Open-source** developers use **npm** to **share** software.
- Many organizations also use npm to manage private development**.**

What is Angular CLI?

Angular CLI stands for Angular Command Line Interface. As the name implies, it is a command line tool for creating angular apps.

The Angular CLI is a command-line interface tool that you use to initialize, develop, scaffold, and maintain Angular applications. You can use the tool directly in a command shell, or indirectly through an interactive UI such as Angular Console.

It is recommended to use angular cli for creating angular apps as you don't need to spend time installing

and configuring all the required dependencies and wiring everything together.
The official site for Angular CLI is https://cli.angular.io/

What is Angular CLI?

What is Angular CLI?

Now, for installing angular cli, follows the steps given below:

Install node.js first if not already install (which I think you probably would have downloaded)
Open the node.js command prompt and issue the command:
Install the CLI using the npm package manager:
>> **npm install -g @angular/cli**

Note: The -g flag in the above command signifies the fact that the ng-cli is being installed in a global scope.

If you want to check out the latest version of angular cli, modify the above stated command as:
Install the latest CLI using the npm package manager:
>> **npm install @angular/cli@latest**

Creating a New Project

Now let's create our first project in Angular 8. To create a project in Angular 8, we will use the following command –

To Set up Development Environment for Angular 8, we require the following –

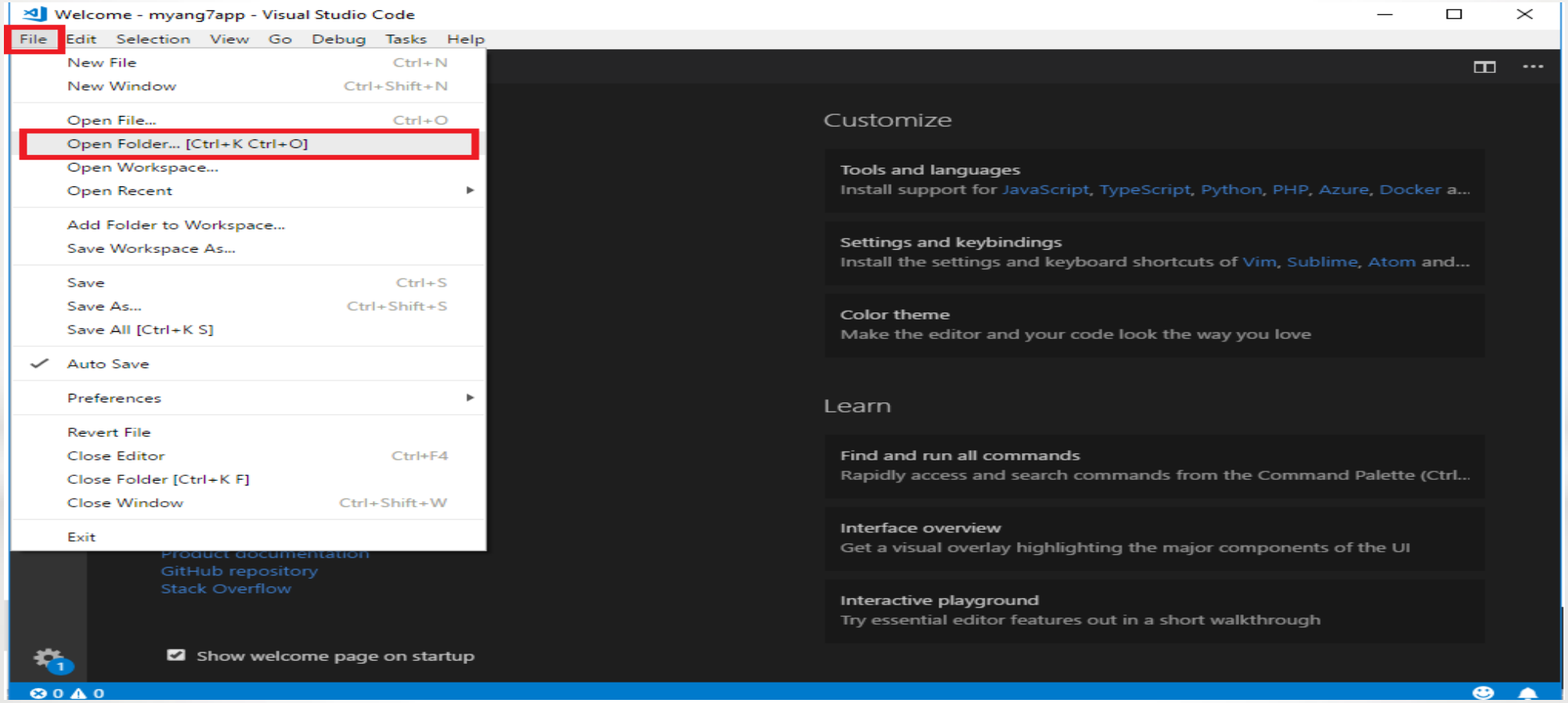
ng new projectname

We will name the project as ng new angular8app.

Creating a New Project

Setp 1:

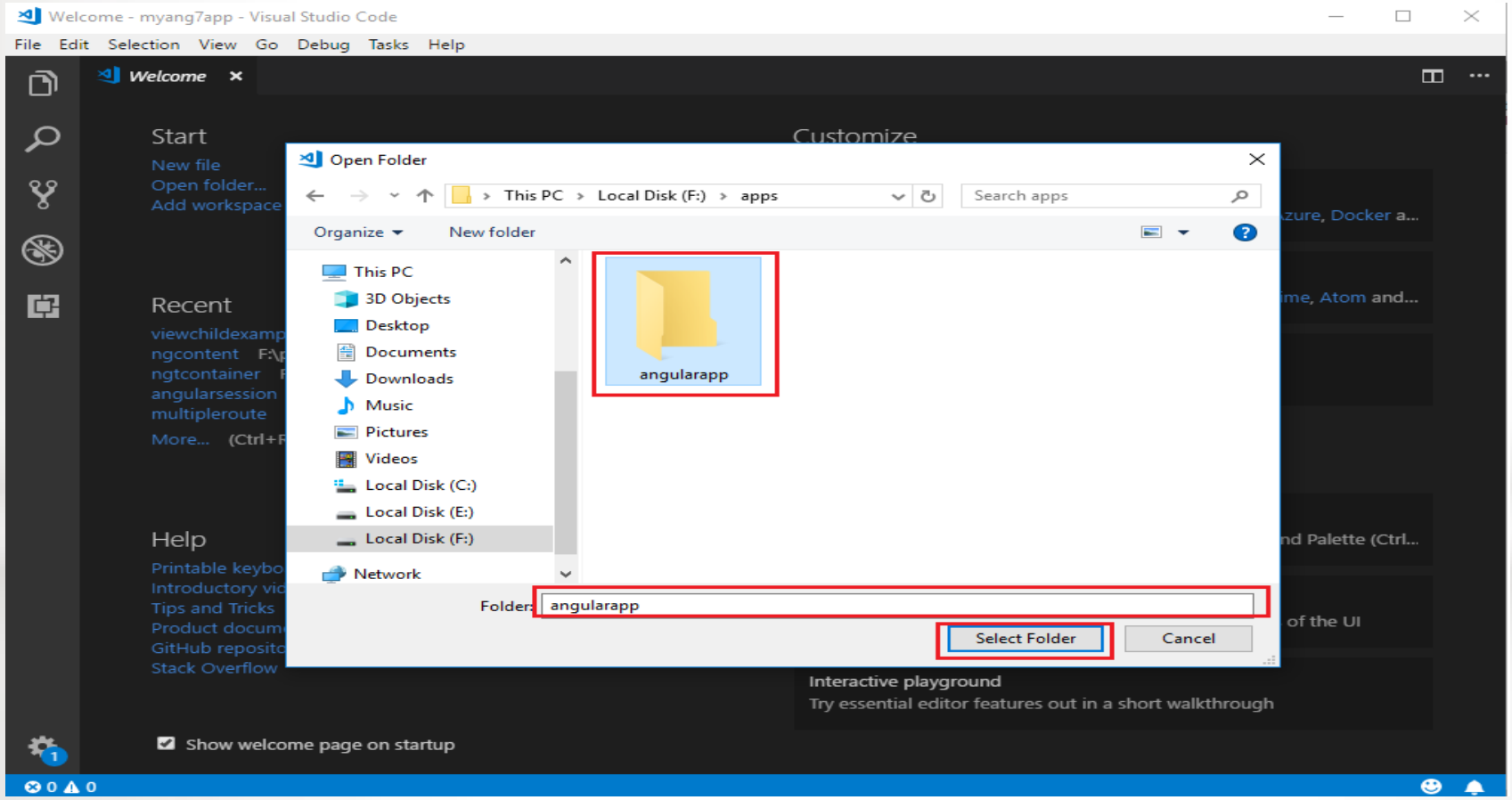
First, create a folder name as Angular, on a desktop or wherever you want. Open Visual code, click on File, go to "Open Folder (ctrl+O)" option and then click on it.



Creating a New Project

Setp 2:

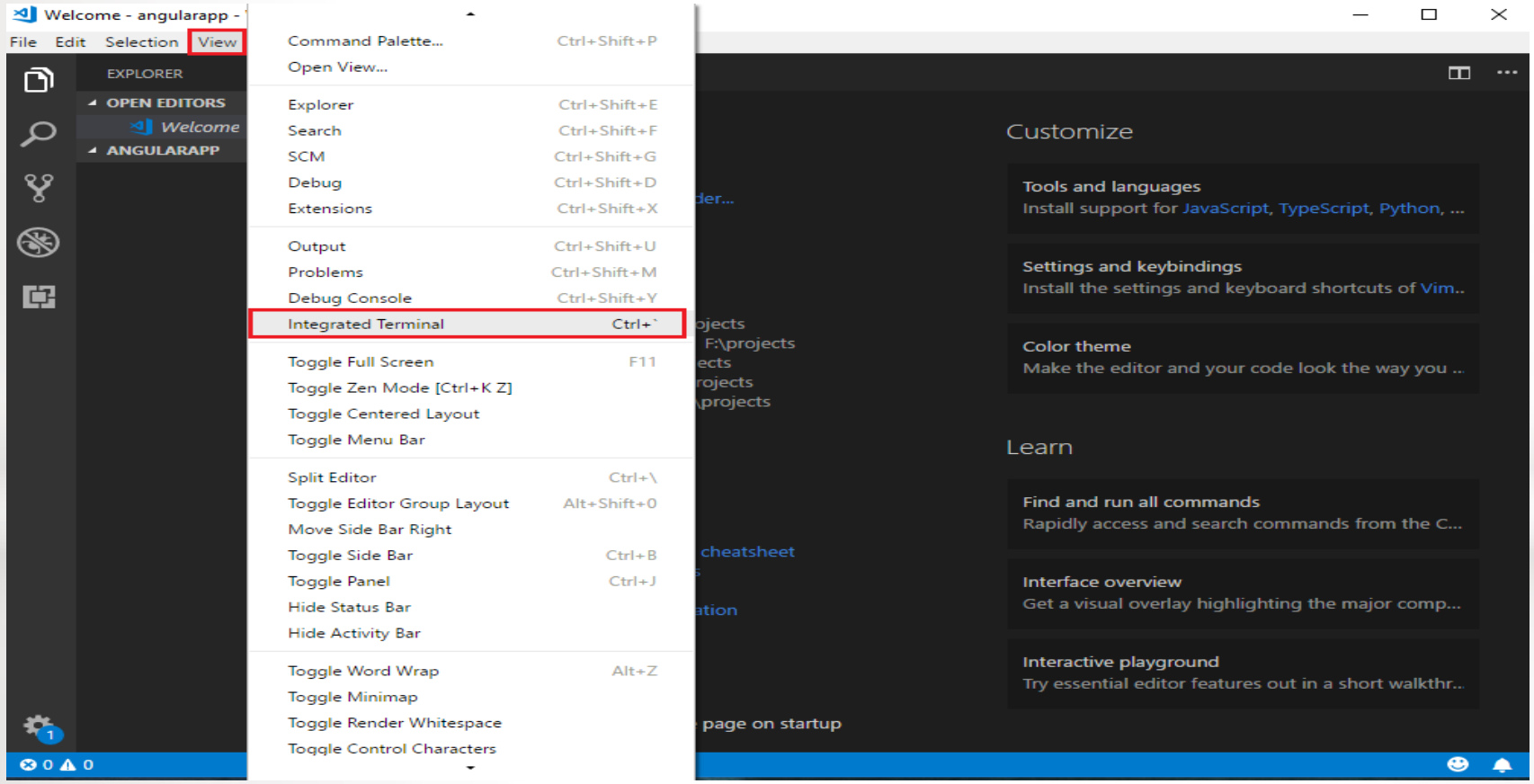
After that, a window will appear. Select the created folder and click on Select Folder box as shown in the below image.



Creating a New Project

Setp 3:

To create the application, click on the view, in the list select Integrated terminal and click on it. Visual Code Console will open.



Creating a New Project

Now run the ng new angular7app command in the command line.