How To Create A New Project In Angular

12 Comments / March 11, 2023 / 12 minutes of reading

⟵ Install Angular | Angular Tutorial | Bootstrapping in Angular ⟶

This guide will show you How to Create a new project in Angular. We use Angular CLI to help us to create the app. Angular has come a long way since its first version of Angular 2. To create an Angular project, all you need to do is to install Angular CLI and run the `ng new` command.

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Summary

What is Angular CLI

The Angular CLI is a command-line tool that allows us to create, develop, scaffold, and manage Angular applications from a command shell.

It helps us to quickly create an Angular application with all the configuration files and packages in one single command. It also allows us to add features (components, directives, services, etc.) to existing Angular applications.

Read More: The Angular CLI Tutorial

How to Create a new Angular project

Before starting with Angular, you need to Install Angular. Before going further, install the following.

1. Visual Studio Code (or any other editor of your choice)
2. NodeJs & NPM Package Manager
3. Install Angular CLI

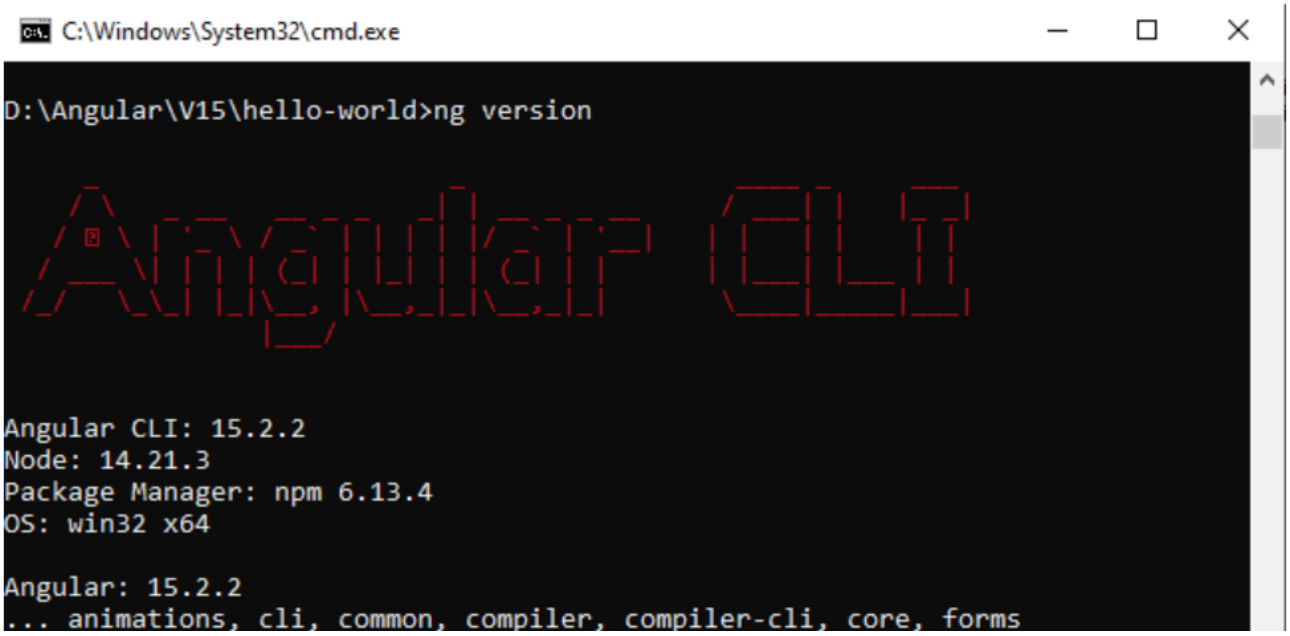
You can read the instructions on installing it from the tutorial Installing Angular.

Finding the Angular CLI Version

You can find out the installed Angular CLI Version by Using the Command.

```

ng version

```

The latest version as of writing this article is 15.2.2. The command above also gives the version of the node installed in your system. You can keep track of the latest Angular CLI release from this link.



```
... platform-browser, platform-browser-dynamic, router

Package                          Version
---------------------------------------------------------
@angular-devkit/architect        0.1502.2
@angular-devkit/build-angular    15.2.2
@angular-devkit/core             15.2.2
@angular-devkit/schematics       15.2.2
@schematics/angular              15.2.2
rxjs                             7.8.0
typescript                       4.9.5
```

Creating a new Angular Application

Creating your first project in Angular has become very simple using Angular CLI. All you need to run the command from the Prompt

```
ng new GettingStarted
```

The installer will ask two questions.

Whether you wish to add Angular Routing? Enter **Yes** here. You will learn more about Angular Routing in future tutorials.

Which stylesheet format would you like to use? You have four options: **CSS**, **SCSS**, **SASS**, and **LESS**. **Angular has deprecated Stylus**. Please feel free to choose whichever works best for you. For this tutorial, we choose **CSS**.

ng new GettingStarted

```
D:\TekTutorialsHub\Angular\AngularCLI>ng new "GettingStarted"
? Would you like to add Angular routing? Yes
? Which stylesheet format would you like to use? (Use arrow keys)
> CSS
  SCSS   [ http://sass-lang.com   ]
  SASS   [ http://sass-lang.com   ]
  LESS   [ http://lesscss.org     ]
  Stylus [ http://stylus-lang.com ]
```

The above command will create a folder `GettingStarted` and copies all the required dependencies and configuration settings. The Angular CLI does the following

1. Creates a new directory `GettingStarted` is created
2. Sets up the folder structure for the application
3. Downloads and installs Angular libraries and any other dependencies
4. Installs and configures `TypeScript`
5. Installs and configures `Karma` & `Jasmine` for testing.

npm

```
D:\TekTutorialsHub\Angular\AngularCLI>ng new "GettingStarted"
? Would you like to add Angular routing? Yes
? Which stylesheet format would you like to use? CSS
CREATE GettingStarted/angular.json (3840 bytes)
CREATE GettingStarted/package.json (1322 bytes)
CREATE GettingStarted/README.md (1031 bytes)
CREATE GettingStarted/tsconfig.json (408 bytes)
CREATE GettingStarted/tslint.json (2837 bytes)
CREATE GettingStarted/.editorconfig (246 bytes)
CREATE GettingStarted/.gitignore (503 bytes)
CREATE GettingStarted/src/favicon.ico (5430 bytes)
CREATE GettingStarted/src/index.html (301 bytes)
CREATE GettingStarted/src/main.ts (372 bytes)
CREATE GettingStarted/src/polyfills.ts (3234 bytes)
CREATE GettingStarted/src/test.ts (642 bytes)
CREATE GettingStarted/src/styles.css (80 bytes)
CREATE GettingStarted/src/browserslist (388 bytes)
CREATE GettingStarted/src/karma.conf.js (964 bytes)
CREATE GettingStarted/src/tsconfig.app.json (166 bytes)
CREATE GettingStarted/src/tsconfig.spec.json (256 bytes)
CREATE GettingStarted/src/tslint.json (314 bytes)
CREATE GettingStarted/src/assets/.gitkeep (0 bytes)
CREATE GettingStarted/src/environments/environment.prod.ts (51 bytes)
CREATE GettingStarted/src/environments/environment.ts (662 bytes)
CREATE GettingStarted/src/app/app-routing.module.ts (245 bytes)
CREATE GettingStarted/src/app/app.module.ts (393 bytes)
CREATE GettingStarted/src/app/app.component.html (1173 bytes)
CREATE GettingStarted/src/app/app.component.spec.ts (1119 bytes)
CREATE GettingStarted/src/app/app.component.ts (218 bytes)
CREATE GettingStarted/src/app/app.component.css (0 bytes)
CREATE GettingStarted/e2e/protractor.conf.js (752 bytes)
CREATE GettingStarted/e2e/tsconfig.e2e.json (213 bytes)
CREATE GettingStarted/e2e/src/app.e2e-spec.ts (306 bytes)
CREATE GettingStarted/e2e/src/app.po.ts (204 bytes)
npm WARN deprecated circular-json@0.5.9: CircularJSON is in maintenance only, flatted is its successor.
[.................] / fetchMetadata: sill pacote range manifest for spdx-expression-parse@^3.0.0 fetched in 63ms
```

Running your new Angular Project

To run your application, all you need to do is type the following command

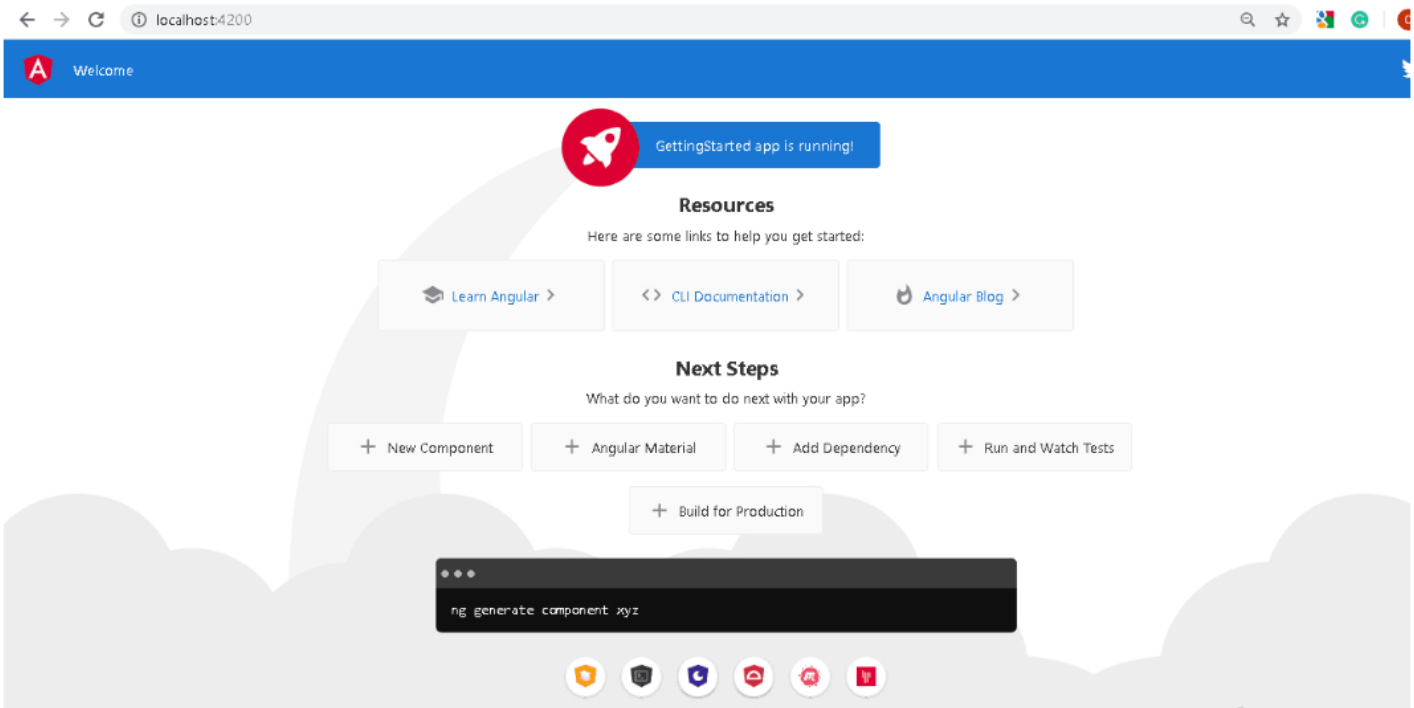
```

ng serve --open
or
ng serve
```

```
5
```

The above command compiles the Angular application and starts the **development server**. The server keeps a watch on our project folder. If you make any changes in the code, it recompiles the project.

The default port for the development server is 4200. The above command will automatically open the web browser and starts the application. If you omit the `--open` option, you have to manually open it by typing **http://localhost:4200/** in the browser address bar.

You will see see **GettingStarted app is running** displayed on the browser.



The following screen shot shows you the complete process of creating a new project in Angular.

Angular project Folder structure

Open the `GettingStarted` folder from Visual Studio Code, and you will see the following folder structure

```

├── node_modules
├── src
│   ├── app
│   │   ├── app-routing.module.ts
│   │   ├── app.component.css
│   │   ├── app.component.html
│   │   ├── app.component.spec.ts
│   │   ├── app.component.ts
│   │   ├── app.module.ts
│   ├── assets
│   │   ├── .gitkeep
│   ├── favicon.ico
│   ├── index.html
│   ├── main.ts
│   ├── polyfills.ts
│   ├── styles.css
│   ├── test.ts
├── .editorconfig
├── .gitignore
├── angular.json
├── package-lock.json
├── package.json
├── README.md
├── tsconfig.app.json
├── tsconfig.json
└── tsconfig.spec.json
```

```
28
```

The root folder application contains two subfolders. `node_modules` and `src`. It also contains a few configuration files

`.editorconfig`: This is the configuration file for the Visual Studio code editor. You can visit **http://editorconfig.org** for more information.

`.gitignore`: Git configuration to ensure autogenerated files are not committed to source control.

`angular.json`: This is the configuration file for Angular CLI. The older versions of Angular used the file `angular-cli.json`.

`package.json`: The package.json is an npm configuration file that lists the third-party packages that your project depends on. We also have package-lock.json

`README.md`: The Read me file

`tsconfig.json`, `tsconfig.app.json` & `tsconfig.spec.json` are Typescript configuration files. The tsconfig.json is the Typescript compiler configuration file. This file specifies the compiler options required for the Typescript to compile (transpile) the project. The `tsconfig.app.json` is used for compiling the code, while `tsconfig.spec.json` for compiling the tests

node_modules

This is the folder NPM Package Manager copies all external dependencies of our project.

src

This directory is where the bulk of your application code will go. It contains the `app` and

`assets` folder

app folder

The Angular CLI creates a simple application that works out of the box. It creates the root component, a root module, and a unit test class to test the component. Now let us see each component of the application one at a time

The Component

The `app.component.ts` is the component that is added to the project by Angular CLI. You will find it under the folder `app/src`

```

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

@Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent {
  title = 'GettingStarted';
}

```

The component class is the most essential part of our application. It represents the view of the application. A view is a region on the screen. It consists of three main parts, i.e. a **class**, a **class decorator**, and an **import statement**

Import statement

```

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

```

The `import` statement imports the libraries used in our component class. This statement

is similar to C# using statement. Our Component is decorated with the `@Component` decorator, part of the `@angular/core` module. So, we need to refer to it in our class. This is done using the `import` method, as shown above.

Component class

```

export class AppComponent {
  title = 'GettingStarted';
}

```

The component is a simple class. We define it using the **export** keyword. The other parts of the app can import it use it. The above component class has one property **title**. This title is displayed, when the application is run.

The component class can have many methods and properties. The main purpose of the component is to supply logic to our view.

@Component decorator

The `AppComponent` class is then, decorated with `@Component` decorator. The `@Component` (called class decorator) provides Metadata about our component. The Angular uses this Metadata to create the view

```

@Component({
    selector: 'app-root',
    templateUrl: './app.component.html',
    styleUrls: ['./app.component.css']
})

```

The `@component` Metadata above has three fields. The `selector`, `templateURL` & `styleUrls`

templateUrl

The `templateUrl` contains the path to the HTML template file. The Angular uses this HTML file to render the view. In the above example, it points to the `app.component.html` file.

styleUrls

The `styleUrls` is an array of Style Sheets that Angular uses to style our HTML file. In the above example, it points towards to `app.component.css` style sheet.

The `app.component.css` file is in the same folder as the `AppComponent`. The file is empty. You can create styles for the component and put it here

selector

The `selector` tells angular where to display the template. The example above selector is app-root. The Angular, whenever it encounters the above tag in the HTML file, it replaces it with the template (`app.component.html`)

The `app-root` selector is used in `index.html`, which we will see later.

Template

The `app.component.html` is our template. The `templateUrl` in component class above points to this class. In

The `app.component.html` file is in the same folder as the `AppComponent`. The code is almost 500 lines of code, and almost all of it is standard HTML & CSS

Note that `{{title}}` is placed inside the `h1` tags in line no 344. The double curly braces are the angular way of telling our app to read the `title` property from the component (`AppComponent`). We call this data binding (interpolation).

AppComponent). We call this data binding (interpolation).

```
<span>{{ title }} app is running!</span>
```

Root Module

Angular organizes the application code as Angular modules. The Modules are closely related blocks of code in functionality. Every application must have at least one module.

The Module which loads first is the root Module. This Module is our root module.

The root module is called `app.module.ts`. (under `src/app` folder). It contains the following code.

```
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';

import { AppRoutingModule } from './app-routing.module';
import { AppComponent } from './app.component';

@NgModule({
  declarations: [
    AppComponent
  ],
  imports: [
    BrowserModule,
    AppRoutingModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

The structure of the Angular module is similar to the component class. Like a Component, it consists of three parts. A `class`, `class decorator` and `import` statement

Module class

```

export class AppModule { }

```

Similar to the component, the Module class is defined with the `export` keyword. Exporting the class ensures that you can use this module in other modules.

@NgModule class decorator

```

@NgModule({
  declarations: [
    AppComponent
  ],
  imports: [
    BrowserModule,
    AppRoutingModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})

```

We use the `@component` decorator to define our component. The Angular Modules require a `@ngModule` decorator. `@ngModue` decorator passes the metadata about the module.

The `@ngModule` Metadata above has four fields. The `declarations`, `imports`, `providers`, & `bootstrap`

`Imports` **Metadata** tells the angular list of other modules used by this module. We are importing `BrowserModule` and `AppRoutingModule`. The `BrowserModule` is the core angular module, which contains critical services, directives, and pipes, etc. The `AppRoutingModule` is defines the application Routes and is mentioned below

`Declaration` **Metadata** lists the components, directives & pipes that belong to this module.

`Providers` are services that belong to this module, which we can use in other modules.

`Bootstrap` **Metadata** identifies the root component of the module. When Angular loads, the `appModule` it looks for bootstrap Metadata and loads all the components listed here. We want our module to load `AppComponent` , hence we have listed it here.

Import statement

```

import { BrowserModule } from '@angular/platform-browser';
import { NgModule } from '@angular/core';

import { AppRoutingModule } from './app-routing.module';
import { AppComponent } from './app.component';

```

The `import` statement is used to import the Angular libraries required by `AppModule`. like `NgModule` & `BrowserModule`. We also need to import `AppComponent`, as we want to load `AppComponent`, when we load the `AppModule`

App Routing Module

```

import { NgModule } from '@angular/core';
import { Routes, RouterModule } from '@angular/router';

const routes: Routes = [];

@NgModule({
  imports: [RouterModule.forRoot(routes)],
  exports: [RouterModule]
})
export class AppRoutingModule { }

```

The `AppRoutingModule` in the file `app-routing.module.ts` defines the `Routes` of the application. These `Routes` tells Angular how to move from one part of the application to another part or one View to another View.

The `Routes` defined in the constant `const routes: Routes = [];`, which is empty

This Module is defined as a separate Module and is imported into `AppModule`.

Bootstrapping our root module

The `app.component.html` is the file we need to show the user. It is bound to the `AppComponent` component. We indicated that the `AppComponent` is to be bootstrapped when `AppModule` is loaded.

We must ask Angular to load `AppModule` when the application is loaded. This is done in the `main.ts` file

The `main.ts` file is found under the `src` folder. The code is as follows.

```

import { platformBrowserDynamic } from '@angular/platform-browser-dynamic';

import { AppModule } from './app/app.module';

platformBrowserDynamic().bootstrapModule(AppModule)
  .catch(err => console.error(err));

```

The first line of the import is `platformBrowserDynamic` library. This library contains all the functions required to bootstrap the angular application.

We also need to import our `AppModule`.

Finally, the `bootstrapModule` method of `platformBrowserDynamic` library to bootstrap our

`AppModule`

```
platformBrowserDynamic().bootstrapModule(AppModule)
  .catch(err => console.error(err));
```

index.html

`Index.html` is the entry point of our application.

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>GettingStarted</title>
  <base href="/">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="icon" type="image/x-icon" href="favicon.ico">
</head>
<body>
  <app-root></app-root>
</body>
</html>
```

The selector **`app-root`**, which we defined in our component metadata, is used as an HTML tag. The Angular scans the HTML page, and when it finds the tag `<app-root><app-root>` replaces the entire content with the content of `app.component.html`

Other files & folders

We have a few other files under the app folder.

Assets

A folder where you can put images and anything else.

styles.css

Your Angular global styles go here. Most of the time, you'll want local styles in your components for easier maintenance, but styles that affect all of your apps need to be in a central place.

Deprecated / Removed

The following files & folders were deprecated or removed

test.ts

The Angular CLI no longer creates this file as it is no longer needed. You can run the command `ng test` , and angular will take care of running the test. You can still create it if needed, but remember to update the corresponding configuration in the angular.json file.

Karma.conf.js

`karma.conf.js` is the Configuration file for the karma test runner. Angular no longer creates this file. Angular takes care of Karma configuration using the settings from `angular.json` . But if you wish, you can create your own configuration file using the command. `ng generate config karma`

browserslist

Angular 15 also removes the `browserslist` . This file Ensures the compatibility of the Angular app with different browsers. If you want to support different browsers than those supported by Angular, use the command `ng generate config browserslist` to generate one.

polyfills.ts

Starting from version 15, Angular does not create `polyfills.ts` automatically. But you can add them if you want to support older browsers. You can refer to the article Enable Polyfills with CLI Projects.

Src/Environments

Angular 15 no longer creates the `src/environments` folder and the `environment.ts` and `environment.prod.ts` files. You can still use these files, but you need to generate these files manually. You should also add relevant `fileReplacements` configuration settings in the `angular.json` file.

Main.ts

The `enableProdMode` function call was also removed from (Angular 15) the main.ts file as it is no longer necessary.

e2e

The Angular dropped support for Protractor from Angular 12. Hence you will see this folder only if you are using any version below Angular 12

tslint.json

Angular deprecated the tslint from version Angular 11. You will see this file only if you create a new project using Angular 11 or less. You can install any linter you want (You can install EsLint, which is available as a Visual Code plugin)

Summary

To create a new project in Angular, we must install `angular/cli` first. We use `ng new <name>` to create new project. The Angular CLI does an excellent job of

downloading all the required libraries and configuring the app. We use `ng serve` to run our application, which starts the Webpack development server at port 4200. In the subsequent tutorials, we learn more about Angular

Read More

1. Angular Tutorial
2. Introduction to Angular
3. Angular Architecture Overview & Concepts
4. Install Angular
5. How to Create a new project in Angular
6. Bootstrapping in Angular

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12 thoughts on "How to Create a new project in Angular"

YOGESH JAGTAP
OCTOBER 4, 2022 AT 10:54 AM

hi have executed the steps and installed accordingly but when u entered 'npm start' or 'np serve' my browser is not start can you please help me inthis

Reply

ANONYMOUS
NOVEMBER 30, 2022 AT 10:44 PM

you need to use ng serve -o, this will build and run the development server and open the browser automatically.

Reply

ANONYMOUS

MARCH 31, 2023 AT 3:31 PM

you have to use the command : ng serve –open

so, it redirets to the page

Reply

SIRISHA

APRIL 6, 2022 AT 3:14 PM

good explanation seriously worth to watch.

Reply

ASIF SHAIK

DECEMBER 22, 2021 AT 12:24 PM

I have knowledge in css and html but don’t have knowledge in javascript. Is it possible for me to create Angular websites without the knowledge of javscript.

Reply

ANONYMOUS
MARCH 9, 2022 AT 11:13 AM

No
JavaScript is main o lean Agular

Reply

ANONYMOUS
SEPTEMBER 17, 2021 AT 12:23 PM

Thank you 💯 ❤️

Reply

VISHNU
JULY 15, 2021 AT 10:44 PM

please add a javascript full tutorial similar to this course

Reply

VENU

OCTOBER 24, 2019 AT 6:49 PM

excellent explanation

Reply

TSOTNE

APRIL 20, 2019 AT 3:46 AM

Good tuts for beginners. Thanks!

Reply

DEEPAK

JULY 17, 2018 AT 12:11 PM

thank you, it was very good tutorial and simple

Reply

MIKA KAAKINEN

AUGUST 13, 2017 AT 12:40 AM

Good tutorial. Thank you!

Reply

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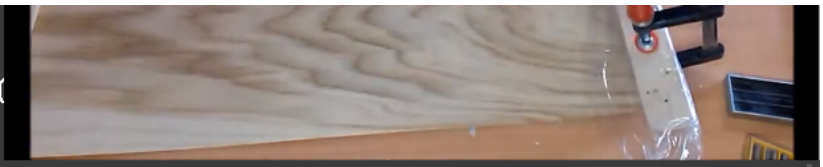
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