Automate Deployment of Angular App to GitHub Pages using GitHub Actions

Alexander Kuruvilla · Follow

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Alright, so you created your first Angular App, customized it, and start it up.

With this post, I'll guide you to set it up so you can host it so others can also appreciate your website!

Create an Angular App

All of you who already have an app ready, it's fine, you can skip this step. If you are starting out on Angular strap in!

1. Node.js

You need it to run Angular Applications, grab one and install from here (https://nodejs.org/en/download/)

2. An IDE (Whichever tickles your fancy, i prefer Visual Studio Code)

First Angular App

Now that's out of the way, you have to install the angular cli first. Open up a terminal and type in:

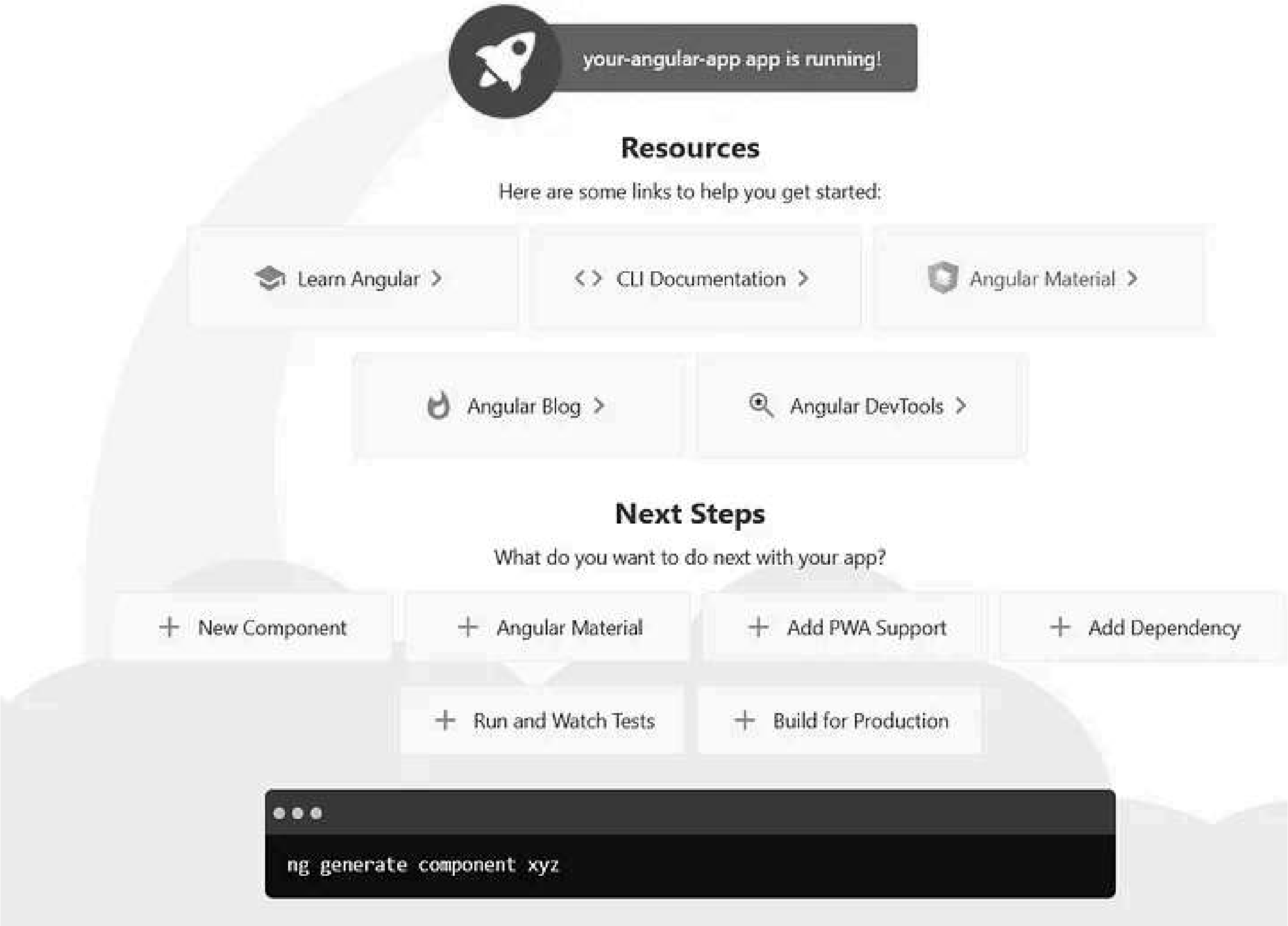
```
npm install -g @angular/cli
```

Once it completes navigate to a folder where you want to create a new app and run this command:

```
ng new myNewApp
```

This will setup your app and install all the necessary node modules. Once it is finished, Navigate inside the project folder via the terminal and run *ng serve* (or alternatively *npm start*)

Navigate to http://localhost:4200 once done and you will see your new angular website!



your-angular-app app is running!

Resources

Here are some links to help you get started:

Next Steps

What do you want to do next with your app?

```
ng generate component xyz
```

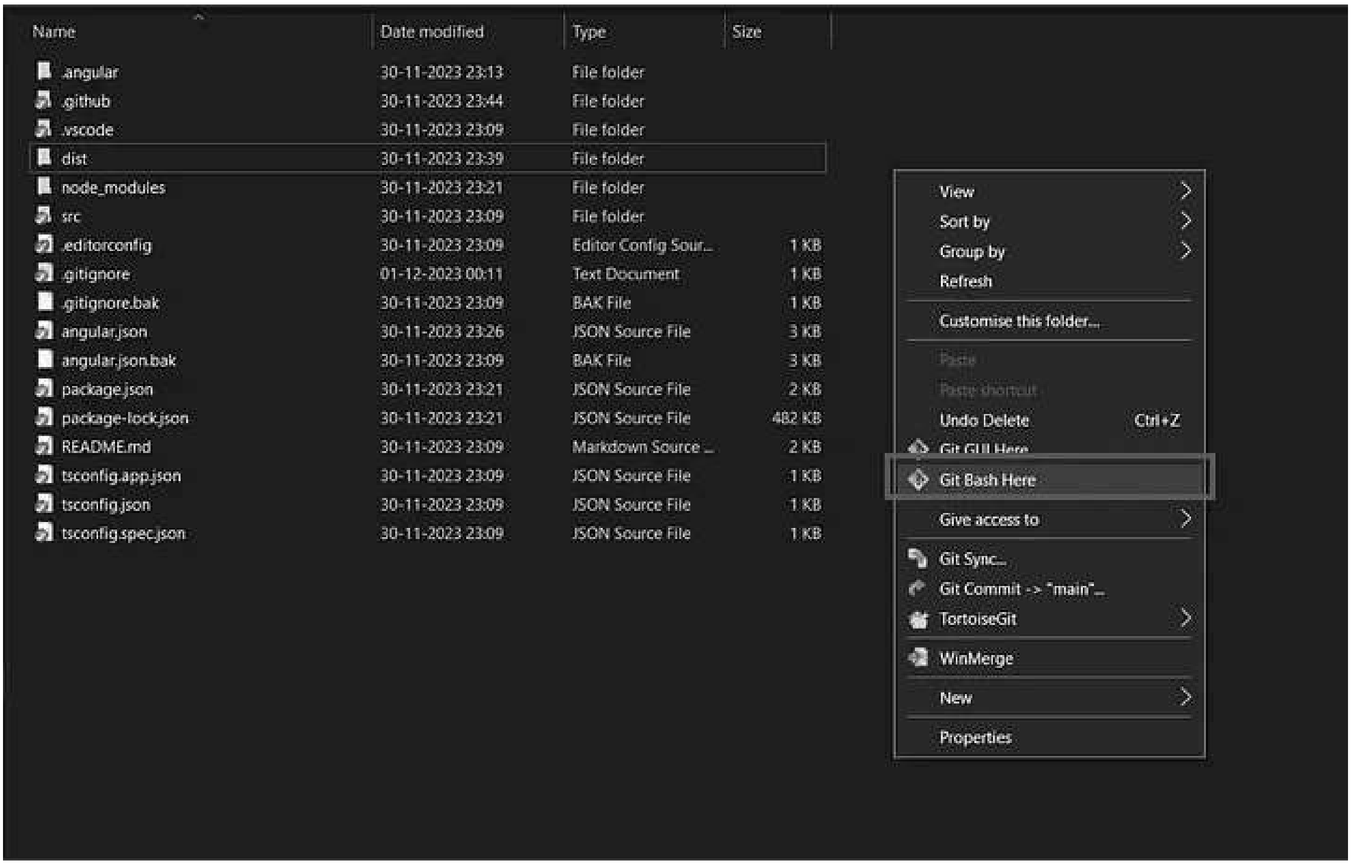
Host the App on GitHub Pages

Prerequisites

GitHub Account — create one if you don't have one.

Tortoise Git (or plain old git) — to push your changes from your PC.

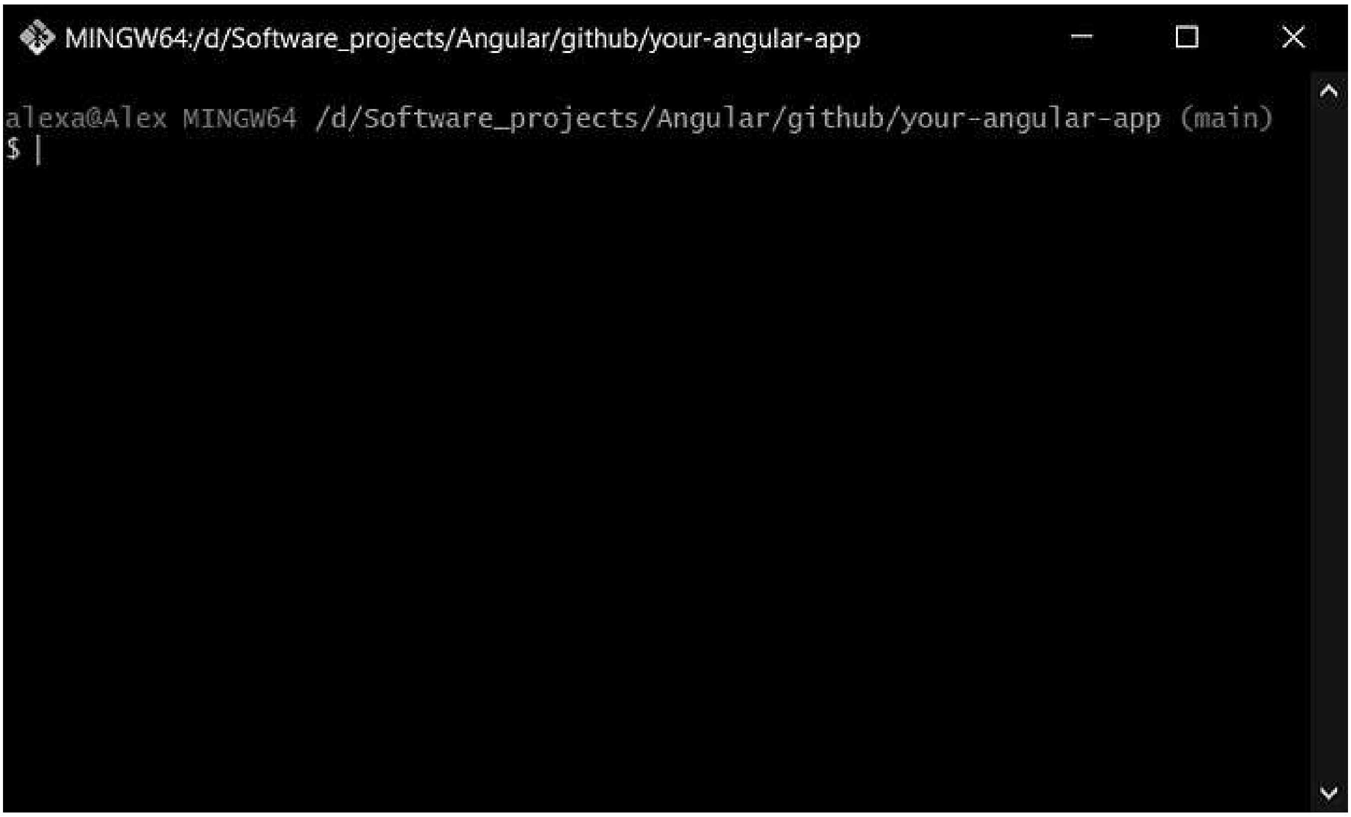
So, once that's done, Create a repository in GitHub. Now you have to initialize git in the *myNewApp* project folder by opening a gitbash window:



Name	Date modified	Type	Size
.angular	30-11-2023 23:13	File folder	
.github	30-11-2023 23:44	File folder	
.vscode	30-11-2023 23:09	File folder	
dist	30-11-2023 23:39	File folder	
node_modules	30-11-2023 23:21	File folder	
src	30-11-2023 23:09	File folder	
.editorconfig	30-11-2023 23:09	Editor Config Sour...	1 KB
.gitignore	01-12-2023 00:11	Text Document	1 KB
.gitignore.bak	30-11-2023 23:09	BAK File	1 KB
angular.json	30-11-2023 23:26	JSON Source File	3 KB
angular.json.bak	30-11-2023 23:09	BAK File	3 KB
package.json	30-11-2023 23:21	JSON Source File	2 KB
package-lock.json	30-11-2023 23:21	JSON Source File	482 KB
README.md	30-11-2023 23:09	Markdown Source ...	2 KB
tsconfig.app.json	30-11-2023 23:09	JSON Source File	1 KB
tsconfig.json	30-11-2023 23:09	JSON Source File	1 KB
tsconfig.spec.json	30-11-2023 23:09	JSON Source File	1 KB

Open gitbash

Then a window similar to below will open up:



MINGW64:/d/Software_projects/Angular/github/your-angular-app

```
alexa@Alex MINGW64 /d/Software_projects/Angular/github/your-angular-app (main)
$ |
```

Now run these commands one after the other:

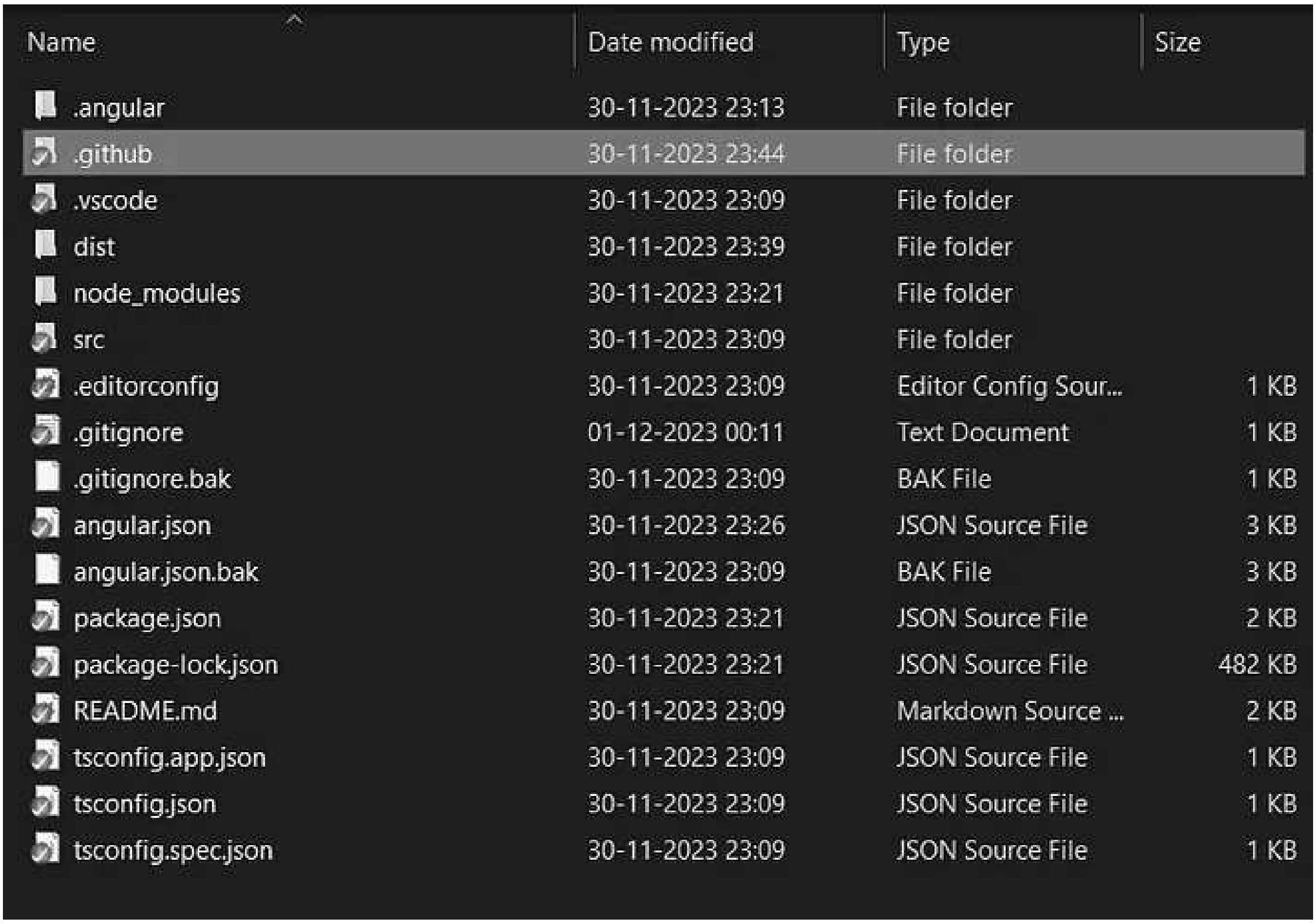
```
git init
git add .
git commit -m "Initial Commit"
git remote add origin https://github.com/<your_github_username>/<repo_name>.git
git push -u origin main (sometimes its master)
```

The commands initialize you git, link it to the repo you created and push all your stuff from local to GitHub. For comprehensive info click here.

Setup GitHub Actions and Workflow

There are a lot of quality posts on how to host your build your app locally and then host it on gh-pages. I'm going to show you a different approach where you can just commit code to your repo and it does everything for you.

GitHub has a neat little CI/CD pipeline you can set up through GitHub Actions. Firstly you need to add a file to tell GitHub what to do. So add a file called *main.yaml* in you local repo under a new folder *.github/workflows*



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create .github folder in root folder

Open up the *main.yaml* file and give it a name:

```
name: Build and Deploy Script
```

We want to do stuff when we push code to the main branch, so add this code:

```
on:
  push:
    branches:
      - main
```

The environment to run the actions must also be specified:

```
jobs:
  build:
    runs-on: ubuntu-latest
```

Now the steps. Since its using a environment from scratch we have tell it to install necessary dependencies to run our commands. Before doing anything though first we must checkout the code from the repo.

```
    steps:

    - name: Checkout Repository
      uses: actions/checkout@v2
```

Now add node.js which we also needed in our pc, At the time of the post I'm using node-version 16:

```
    - name: Adding Node.js
      uses: actions/setup-node@v2
```

```
        with:
          node-version: 16
```

Install the dependencies and build the app:

```
      - name: Install Dependencies
        run: npm install

      - name: Build Angular App
        run: npm run build
```

Now add the step to deploy to gh-pages:

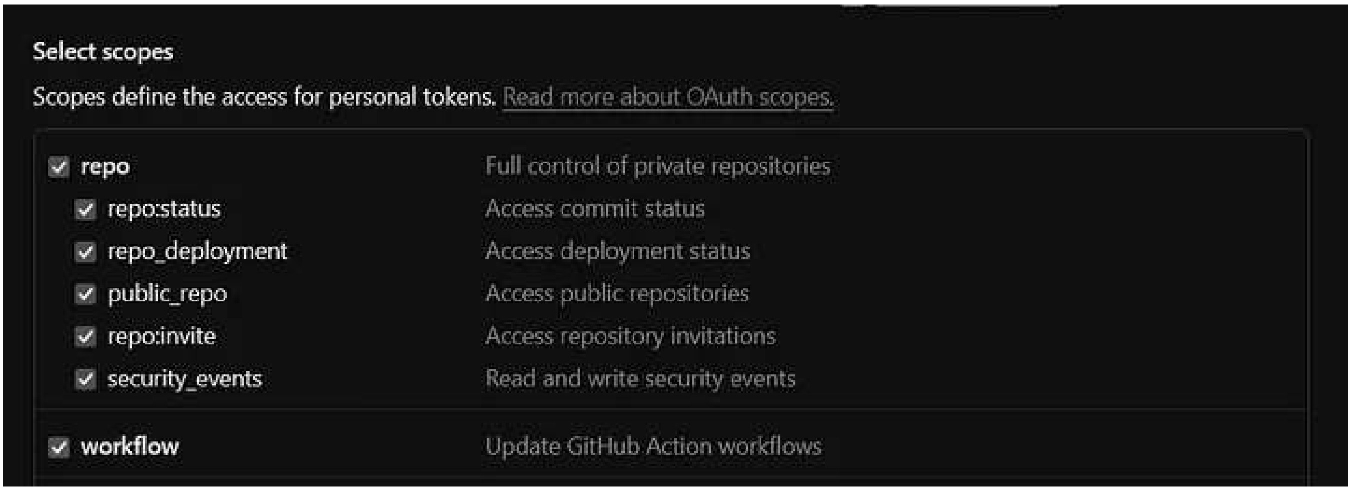
```
      - name: Deploy to gh pages
        run: |
          npx angular-cli-ghpages --dir=dist/your-angular-app
        env:
          CI: true
          GH_TOKEN: ${{ secrets.GH_TOKEN }}
```

You must have noticed above there are some environment configuration parameters in the last step. **CI: true** means to clean install the app. The crucial thing here is the **GH_TOKEN: ${{ secrets.GH_TOKEN** }} which I'll explain below.

GitHub Token and Set up

Whenever GitHub actions does something like deploying to another branch it needs permissions. This is facilitated with the help of github personal access tokens. There are two types you can create a finegrained PAT and a classic PAT. Create a classic one as it work best for this case.

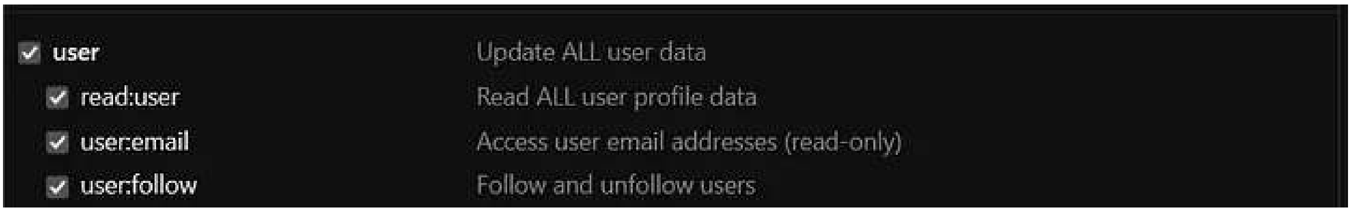
*Note: Ensure that you add the **repo** scope and **user** scope when configuring the PAT:*



Select scopes

Scopes define the access for personal tokens. Read more about OAuth scopes.

☑ repo	Full control of private repositories
☑ repo:status	Access commit status
☑ repo_deployment	Access deployment status
☑ public_repo	Access public repositories
☑ repo:invite	Access repository invitations
☑ security_events	Read and write security events
☑ workflow	Update GitHub Action workflows

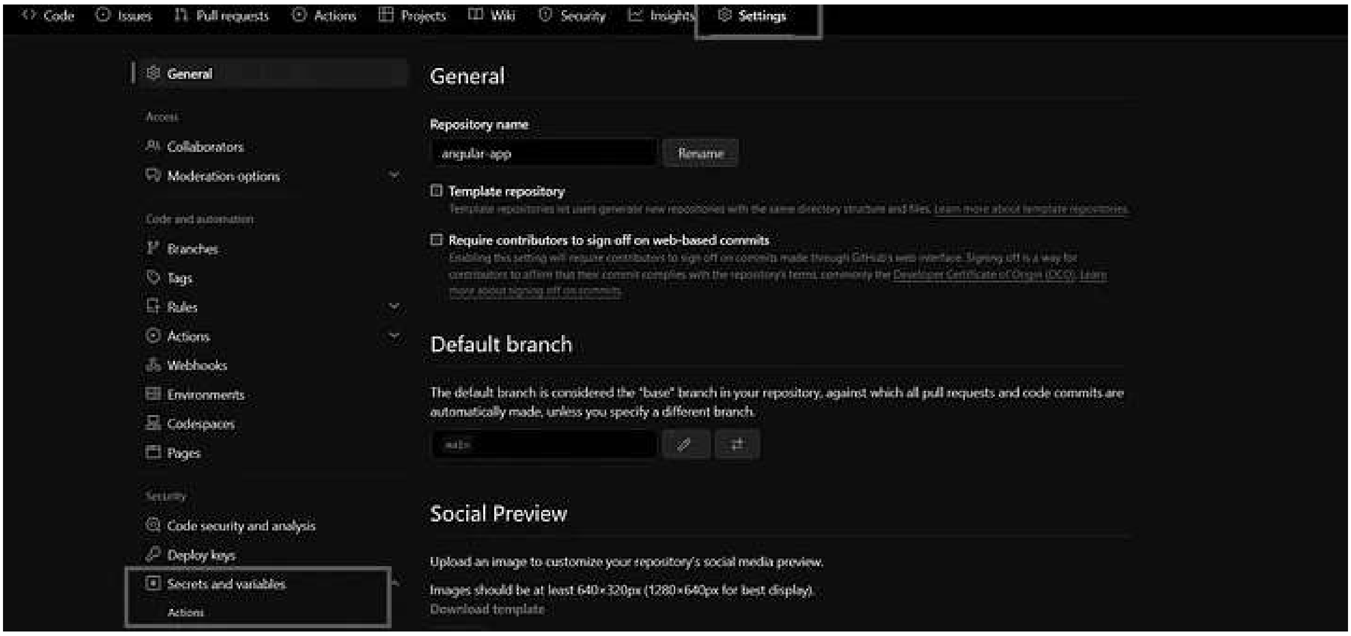


☑ user	Update ALL user data
☑ read:user	Read ALL user profile data
☑ user:email	Access user email addresses (read-only)
☑ user:follow	Follow and unfollow users

Adding PAT to secrets

Once you generate the PAT, add it to the secrets of your angular project repo:

1. Navigate to *Settings>Secrets and Variables> Actions* in your repo.



General

Repository name: angular-app

□ Template repository
Template repositories let users generate new repositories with the same directory structure and files. Learn more about template repositories.

□ Require contributors to sign off on web-based commits
Enabling this setting will require contributors to sign off on commits made through GitHub's web interface. Signing off is a way for contributors to affirm that their commit complies with the repository's terms, commonly the Developer Certificate of Origin (DCO). Learn more about signing off on commits.

Default branch

The default branch is considered the "base" branch in your repository, against which all pull requests and code commits are automatically made, unless you specify a different branch.

main

Social Preview

Upload an image to customize your repository's social media preview.

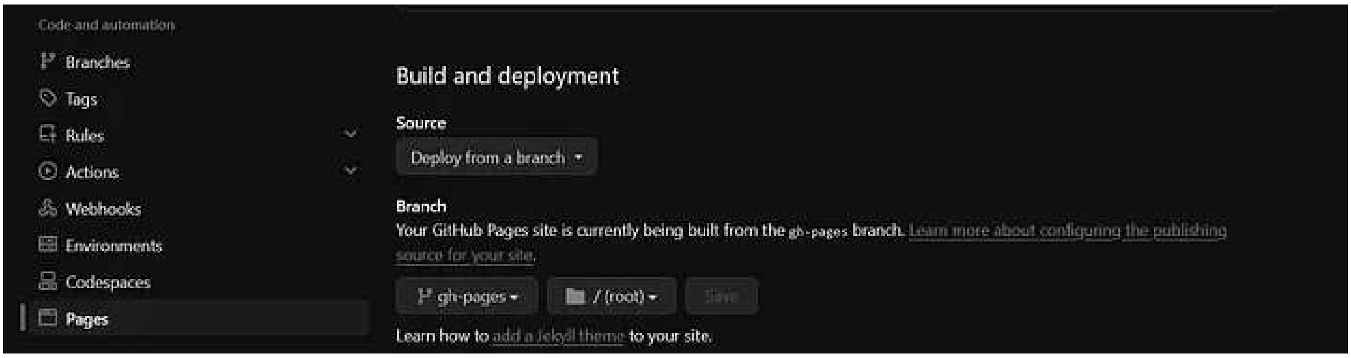
Images should be at least 640×320px (1280×640px for best display).

Download template

2. Click on new repository secret and add your token key with name as GH_token.

Great! Now push that yaml file to the repo.

Also ensure that you have set the branch to *gh-pages* in *Settings>Pages*



Build and deployment

Source

Deploy from a branch

Branch

Your GitHub Pages site is currently being built from the gh-pages branch. Learn more about configuring the publishing source for your site.

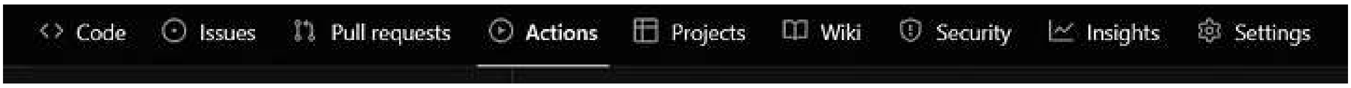
gh-pages / (root) Save

Learn how to add a Jekyll theme to your site.

Now visit the URL: https://**username**.github.io/**reponame**/

You will see you angular app up and running!

…..wait, Almost forgot, in case you want to check if the code is building and deploying properly, go to the actions tab of your repo.



Peace!

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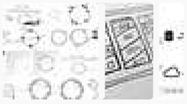

General Coding Knowledge

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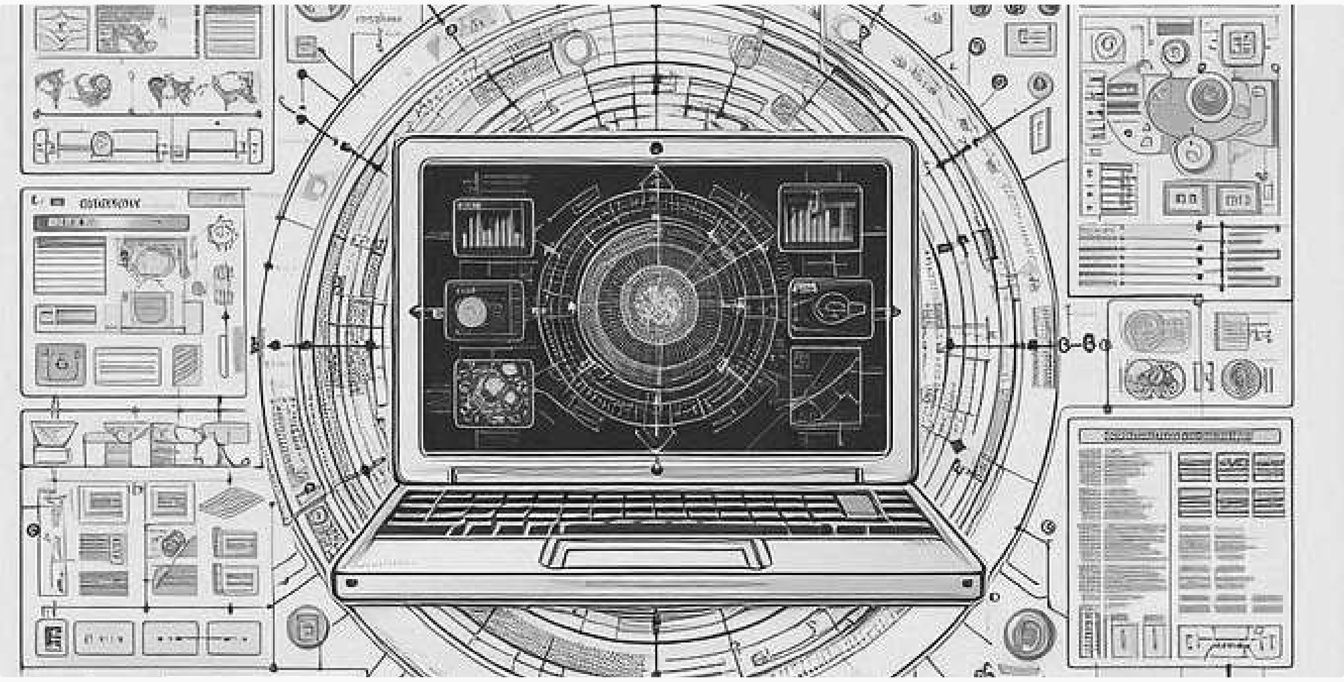

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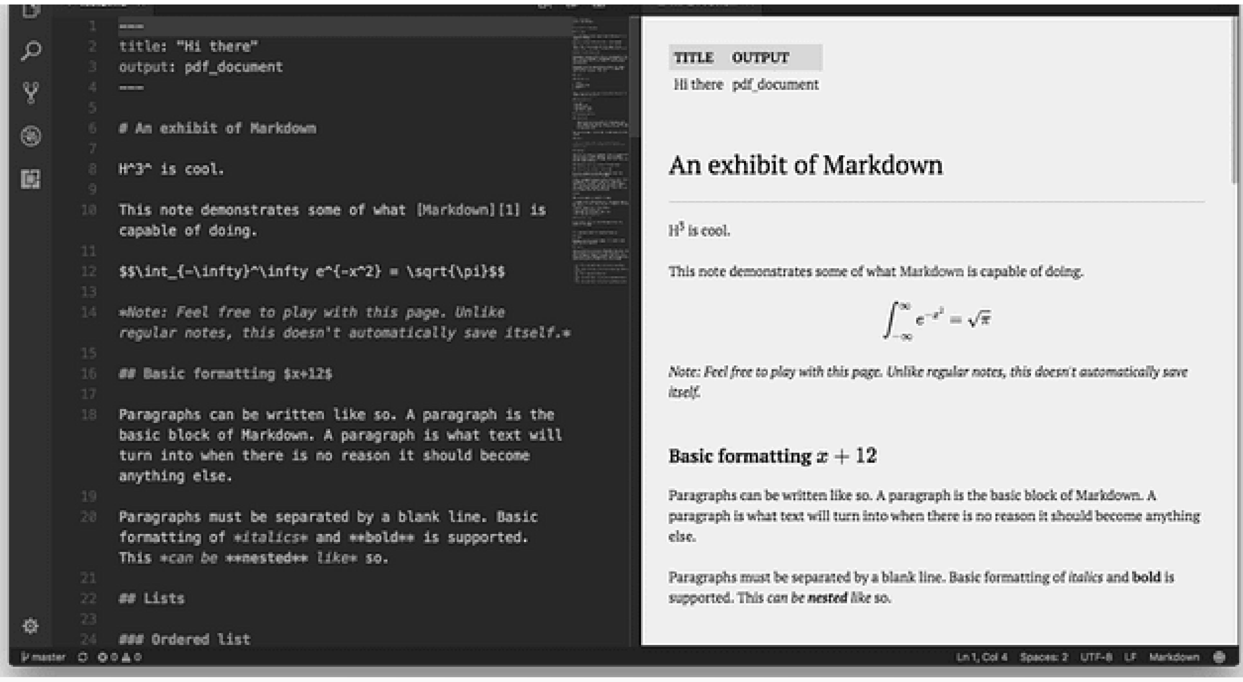

```
---
title: "Hi there"
output: pdf_document
---

# An exhibit of Markdown

H^3^ is cool.

This note demonstrates some of what [Markdown][1] is
capable of doing.

$$\int_{-\infty}^\infty e^{-x^2} = \sqrt{\pi}$$

*Note: Feel free to play with this page. Unlike
regular notes, this doesn't automatically save itself.*

## Basic formatting $x+12$

Paragraphs can be written like so. A paragraph is the
basic block of Markdown. A paragraph is what text will
turn into when there is no reason it should become
anything else.

Paragraphs must be separated by a blank line. Basic
formatting of *italics* and **bold** is supported.
This *can be **nested** like* so.

## Lists

### Ordered list
```

TITLE	OUTPUT
Hi there	pdf_document

An exhibit of Markdown

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