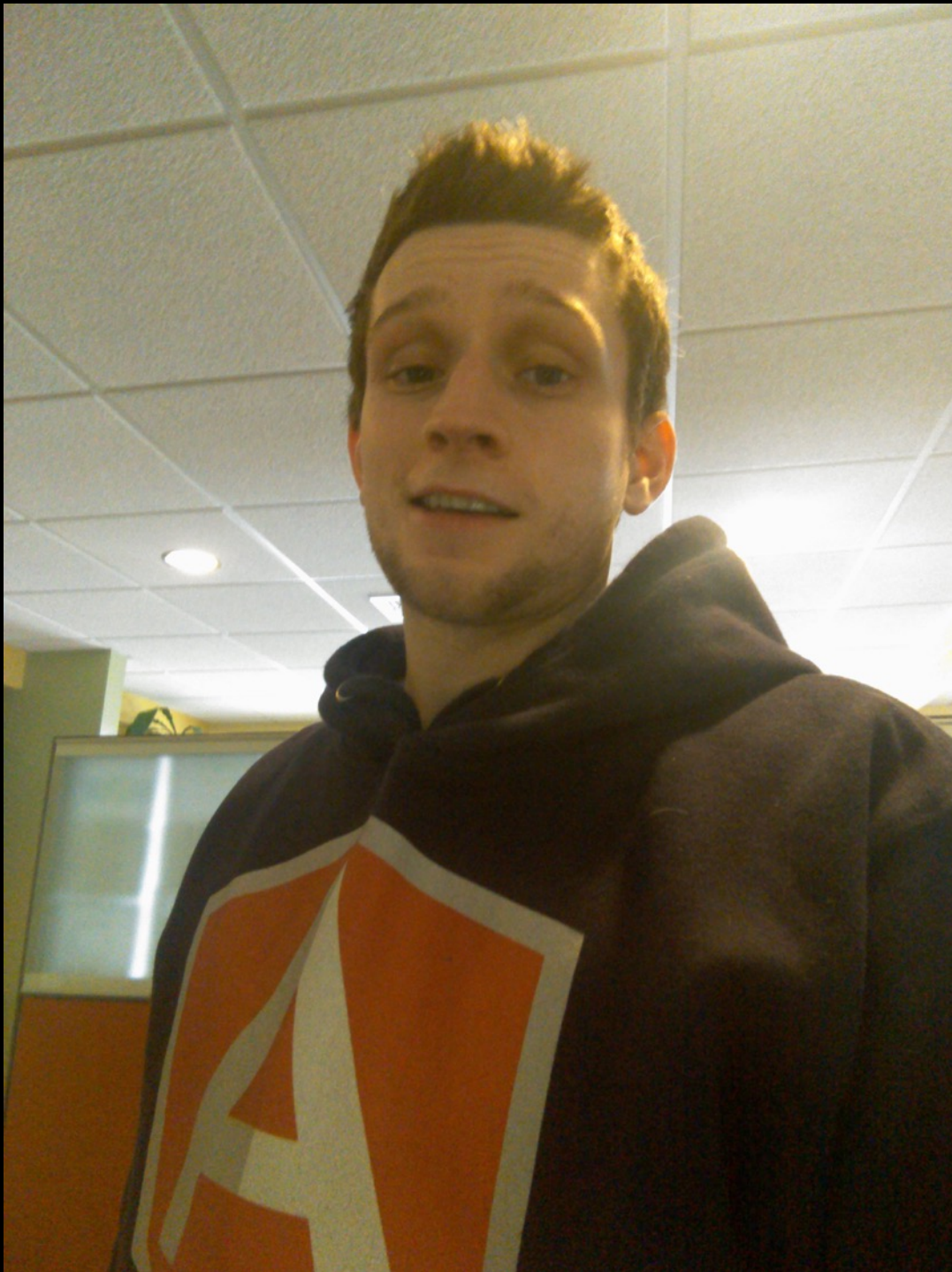


Getting Started With The Angular 2 CLI

by Jim Lynch

July 2016

Jim Lynch



Front-End Engineer
at Altered Image



WebStorm
Ambassador



@webWhizJim

“The BDD Angular Guy”

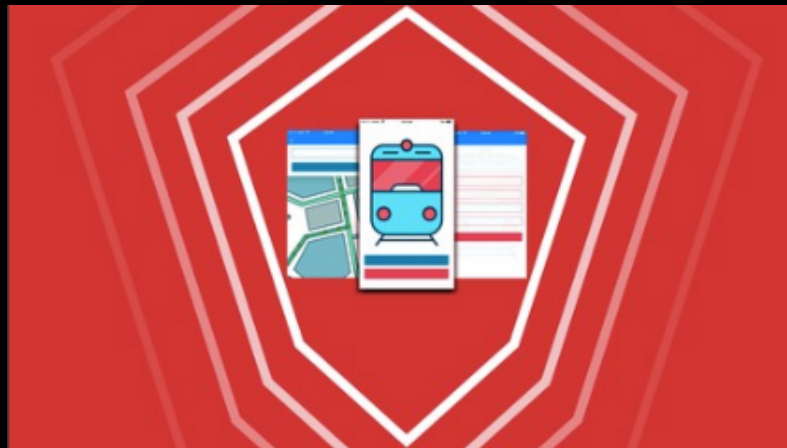
Slides available here:

<http://www.slideshare.net/JimLynch22/getting-started-with-the-angular-2-cli>

Resources for Learning Angular 2

1. Angular 2 Crash Course with TypeScript - Udemy

Free with the link below!



[https://www.udemy.com/angular-2-crash-course/
learn/v4/?](https://www.udemy.com/angular-2-crash-course/learn/v4/?couponCode=blackhat&pmtag=CELEBRATE40&utm_source=codek.tv)

[couponCode=blackhat&pmtag=CELEBRATE40
&utm_source=codek.tv](https://www.udemy.com/angular-2-crash-course/learn/v4/?couponCode=blackhat&pmtag=CELEBRATE40&utm_source=codek.tv)

Resources for Learning Angular 2

2. Accelerating Through Angular 2 - [CodeSchool.com](https://www.codeschool.com/courses/accelerating-through-angular-2)

(First level free, then requires pro membership)



<https://www.codeschool.com/courses/accelerating-through-angular-2>

Resources for Learning Angular 2

3. Pluralsight Courses

(requires pluralsight membership)

Angular 2: Getting Started

By Deborah Kurata

Angular 2: First Look

By John Papa

Play by Play: Angular 2 Quick Start with John Papa and Ward Bell

By John Papa and Ward Bell

Resources for Learning Command Line / BASH

2 Free Code School Courses!



<https://www.codeschool.com/>

- Shell Productivity Elective Course
- Unix Basics Elective Course

Resources for Learning Command Line / BASH

▼ Back End Development Certification

▶ Automated Testing and Debugging

(15 minutes)

▶ Git

(3 hours)

▶ Node.js and Express.js

(20 hours)

▶ MongoDB

(3 hours)

▶ API Projects

(150 hours)

▶ Dynamic Web Application Projects

(250 hours)

▶ Claim Your Back End Development Certificate

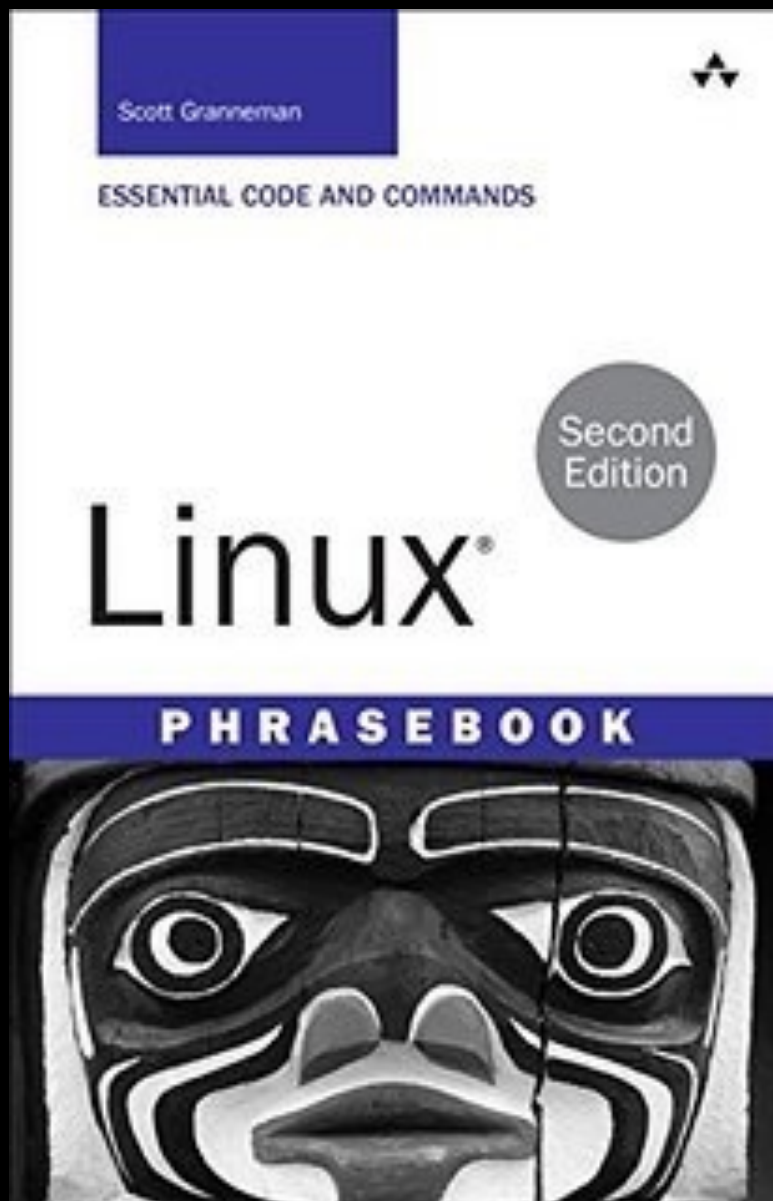
(5 minutes)

freeCodeCamp()

Free Code Camp
Backend Challenges

Free!

Resources for Learning Command Line / BASH



- Reference guide of the common Unix / Linux commands.
- Physically small book.
- Humorous yet informative and technical descriptions.

Resources Specifically For Learning Angular 2 CLI

- Angular CLI Reference PDF
(<https://cli.angular.io/reference.pdf>)
- Angular 2 CLI Github Project Page
(<https://github.com/angular/angular-cli>)
- Official Angular CLI Website
(<https://cli.angular.io/>)

The Importance of Having a Pretty Command Line

- Your command line is a powerful tool. You should use it often and be comfortable with it.
- Make the background and font color easy on the eyes and increase the font size.
- Edit your `~/.bash_rc` or `~/.bash_profile` to make your text more colorful and change your BASH prompt.
- Install vim plugins for syntax highlighting.

So, What is Angular 2?

Angular 2: One framework.

<https://angular.io/> ▼

Angular is a development platform for building mobile and desktop web applications.

What Is a SPA Framework?

Routing

- Illusion of Pages
- Deep Linking
- Layers of HTML

Components

- Ties HTML to JS
- Data Binding
- Modular Code

Angular 2 Building Blocks



(Eerily similar the building blocks of AngularJS)

- Components
- Directives
- Routes
- Services
- Pipes

- Controllers
- Directives
- Routes
- Services
- Filters

Differences From Angular 1

- No more “ng-“ directives! New syntax for binding directly to events instead.
- Namespaced CSS / Sass
- Simpler concept of Directives, No link functions in ng2!
- Nice router with power and flexibility of UI-Router
- Crazy fast with Shadow DOM under the hood.
- Projects are written in TypeScript (usually).
- Observables to handle streams and cancel requests!
- And best of all, the Angular CLI!

If You Can't Beat Em', Join em'. (Or just copy 'em)

- Concept of “Shadow DOM” originally from React
- CLI tool ported from from Ember CLI.
- Took Microsoft's TypeScript and made it mainstream.

The Angular CLI!!

Are you as excited as this guy?



The Main Idea

Use the command line to generate
folders and files for you.

...or even generate an entire
starter project.

The Initiation Ceremony (Installing angular-cli)

This is where your Angular 2 CLI journey begins!

```
James-MacBook-Pro:~ jim$ _
```

If You Get This Error:

You might get this error:

Error: EACCES: permission denied, open '/Users/jim/.config/configstore/ember-cli.json'

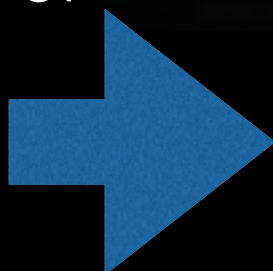
You don't have access to this file.

```
[Jamess-MBP:more-ng-2-tests jim$ ng --version
(node:1148) fs: re-evaluating native module sources is not supported. If you are using the graceful-fs module, please
update it to a more recent version.
/usr/local/lib/node_modules/angular-cli/node_modules/configstore/index.js:54
    throw err;
    ^

Error: EACCES: permission denied, open '/Users/jim/.config/configstore/ember-cli.json'
You don't have access to this file.

    at Error (native)
    at Object.fs.openSync (fs.js:634:18)
    at Object.fs.readFileSync (fs.js:502:33)
    at Object.create.all.get (/usr/local/lib/node_modules/angular-cli/node_modules/configstore/index.js:35:26)
    at Object.Configstore (/usr/local/lib/node_modules/angular-cli/node_modules/configstore/index.js:28:44)
    at clientId (/usr/local/lib/node_modules/angular-cli/node_modules/ember-cli/lib/cli/index.js:22:21)
    at module.exports (/usr/local/lib/node_modules/angular-cli/node_modules/ember-cli/lib/cli/index.js:65:19)
    at module.exports (/usr/local/lib/node_modules/angular-cli/lib/cli/index.js:106:10)
    at /usr/local/lib/node_modules/angular-cli/bin/ng:31:5
    at /usr/local/lib/node_modules/angular-cli/node_modules/resolve/lib/async.js:46:14
Jamess-MBP:more-ng-2-tests jim$ _
```

Give your
current user
ownership of
ember-
cli.json



```
sudo chown jim /Users/jim/.config/configstore/ember-cli.json
```

ng new

```
Jamess-MacBook-Pro:another-ng2-test jim$ _
```



ng init

```
James-MacBook-Pro:yet-another-ng2-test jim$ _
```

```
ng init
```

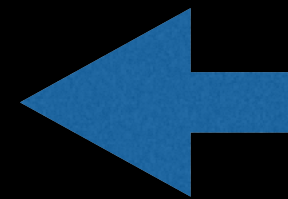
```
1. Create a new Angular project
```

What Just Happened?

An entire starter project was scaffolded!

▼ **more-ng-2-tests** ~/more-ng-2-test

- ▶ **config**
- ▶ **dist**
- ▶ **e2e**
- ▶ **node_modules**
- ▶ **public**
- ▶ **src**
- ▶ **tmp**
- ▼ **typings**
 - ▶ **browser**
 - ▶ **main**
 - browser.d.ts**
 - main.d.ts**
- .editorconfig**
- .gitignore**
- angular-cli.json**
- angular-cli-build.js**
- package.json**
- README.md**
- tslint.json**
- typings.json**



All these files
and folders
were
generated by
ng new!

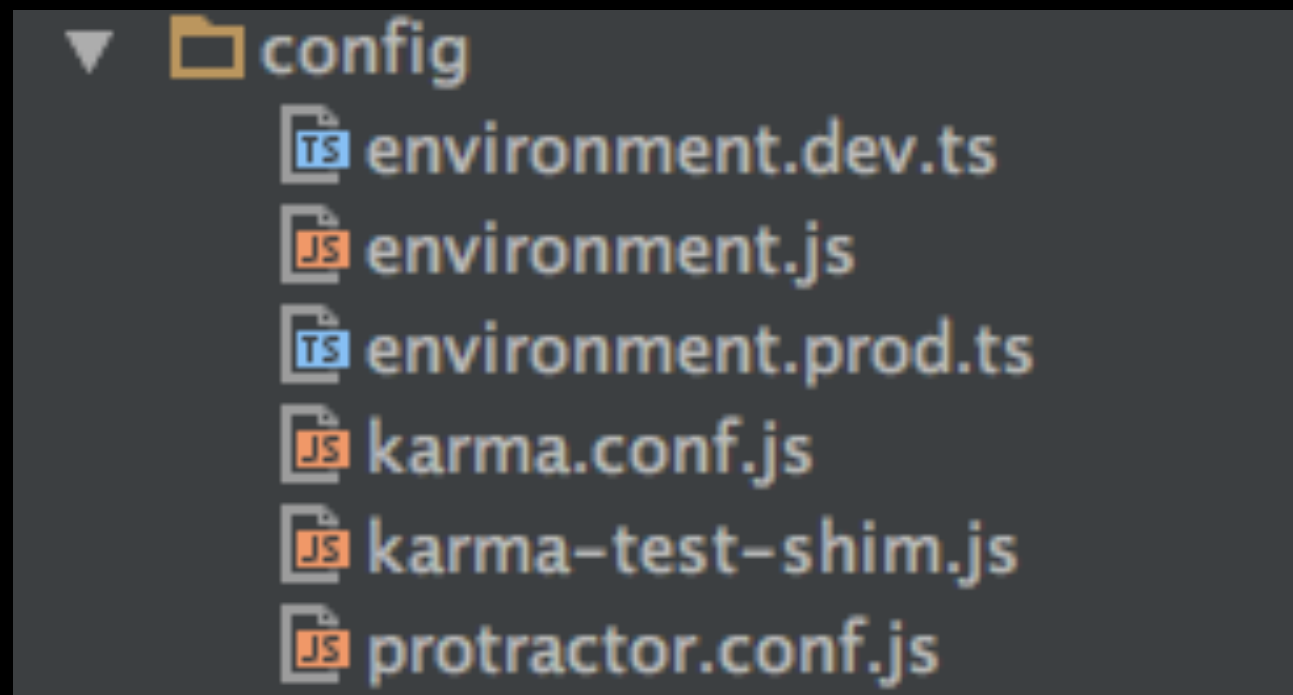
A Closer Look

a What Was Created

Config

Environment files for setting *production* boolean environment variable.

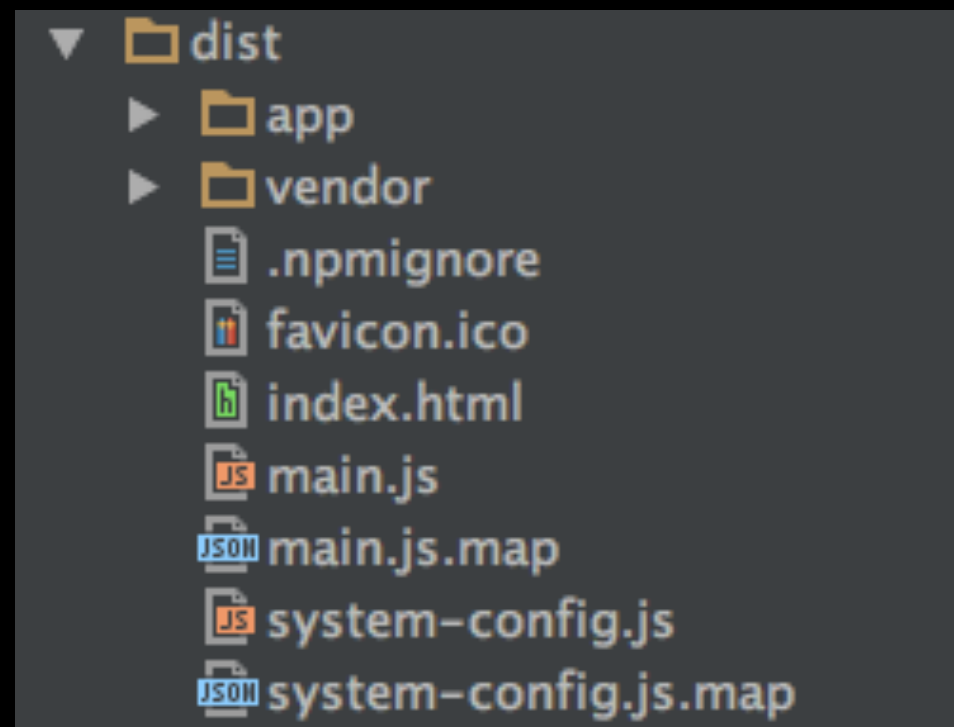
Configuration files for automated test runners.



Dist

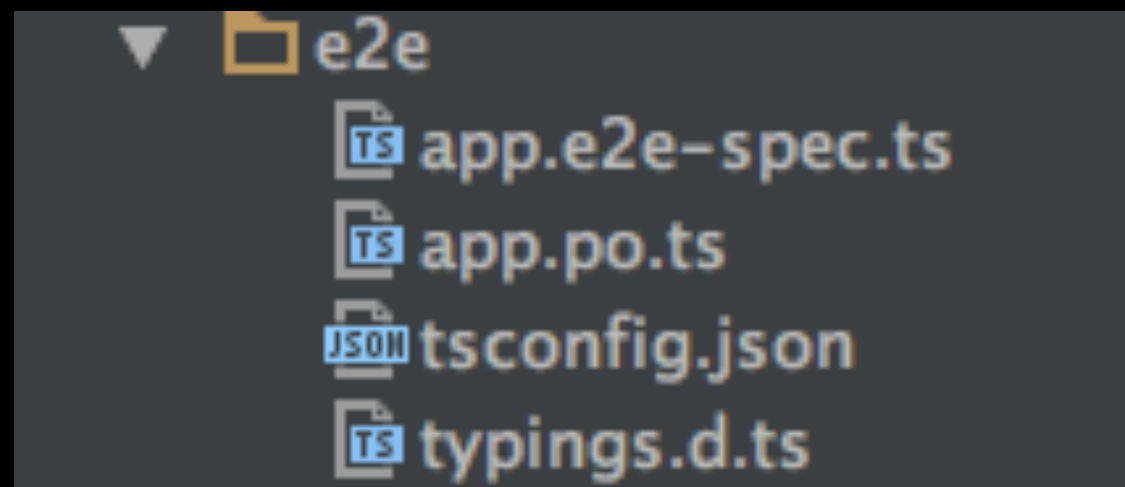
Folder that gets written to by build task

Contains final, minified files that get hosted to be the final, live product.



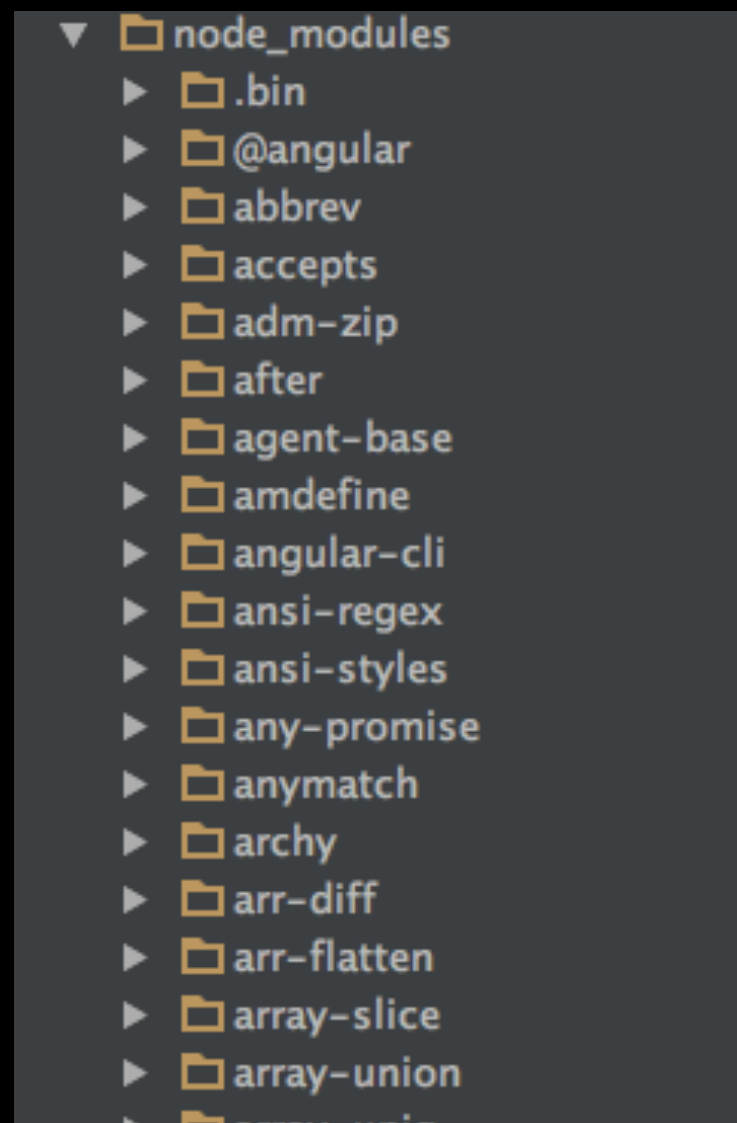
E2e

Contains files for e2e and integration tests run by Protractor.



node_modules

Contains all the npm libraries that are dependencies for your application.

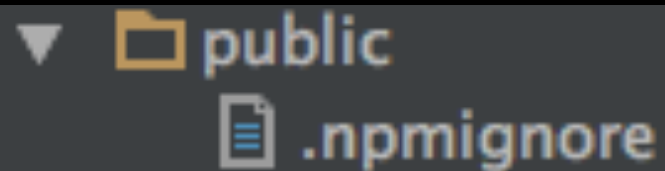


Public

Contains the .gitignore file.

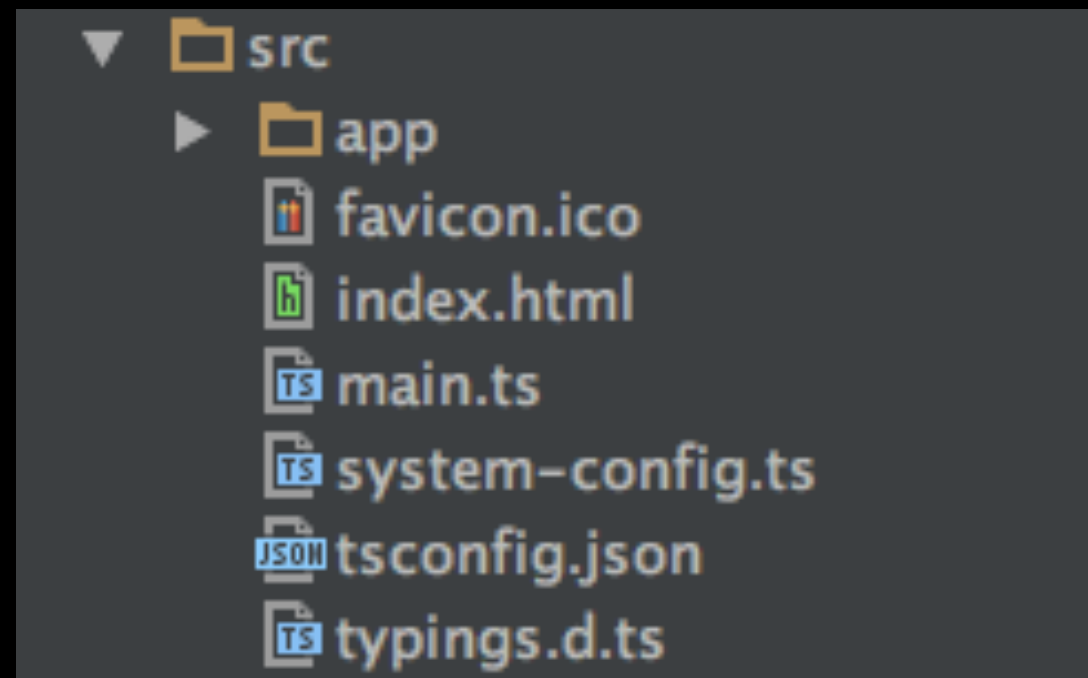
A place for images and
other static assets.

Some people like to put manually added
libraries here.



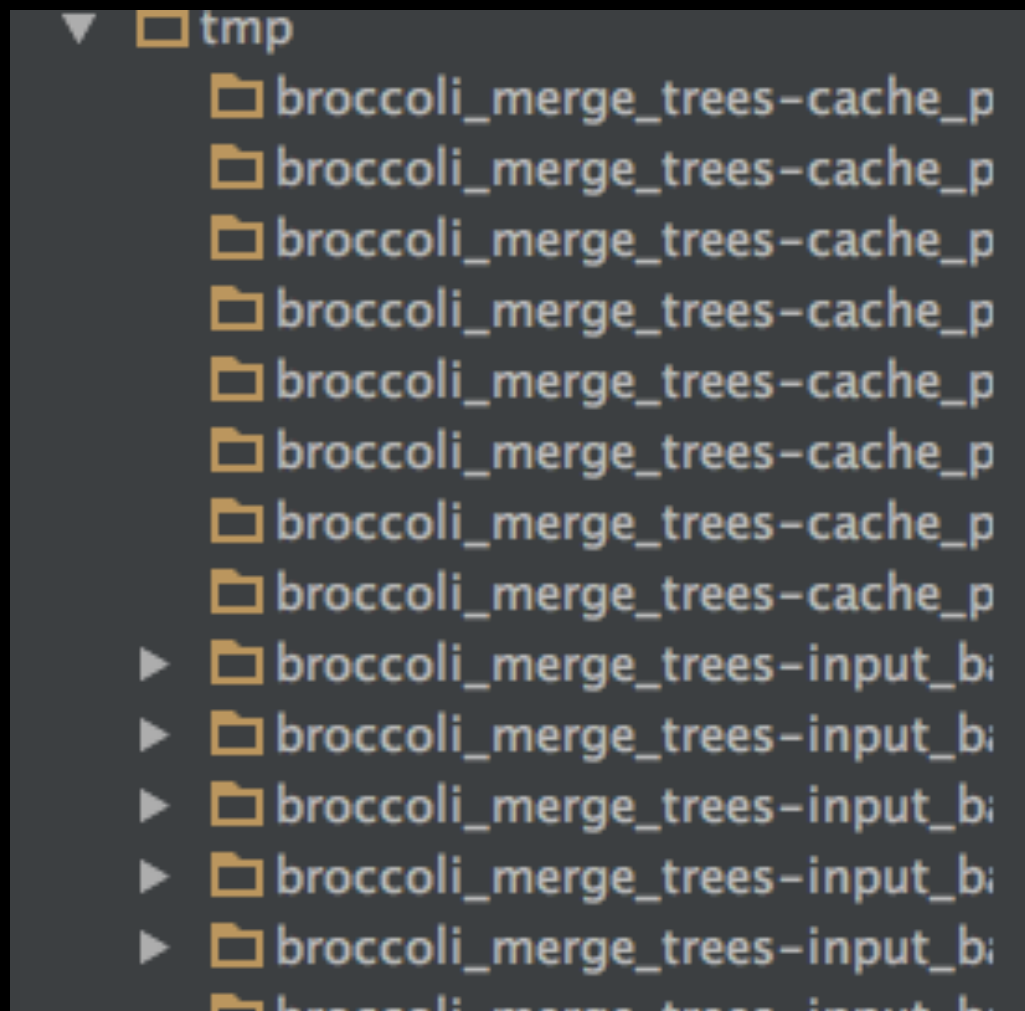
Src

Contains all of your source code!



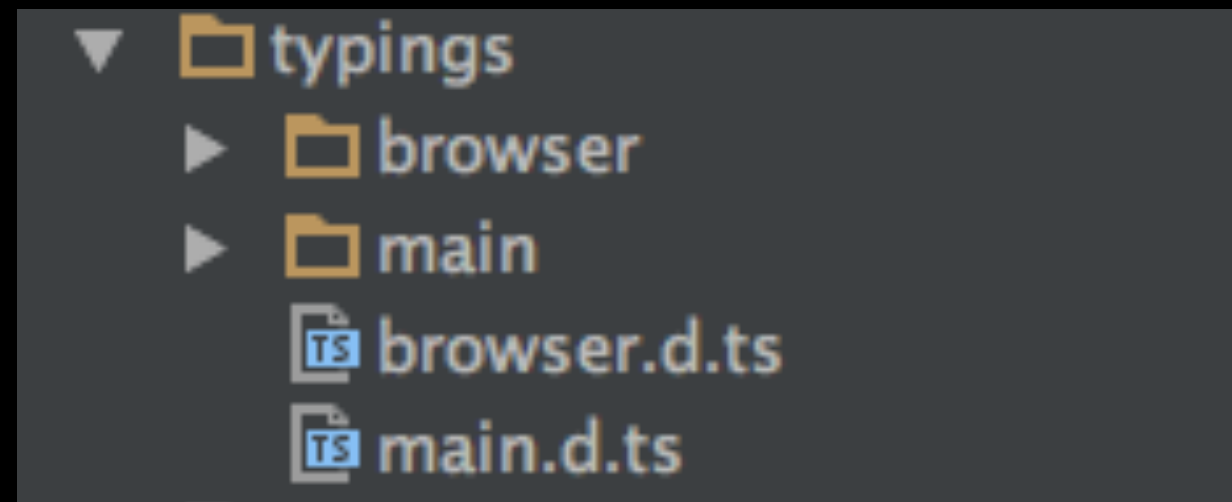
Tmp

Contains temporary files that Angular CLI generates and uses to runs its tasks.



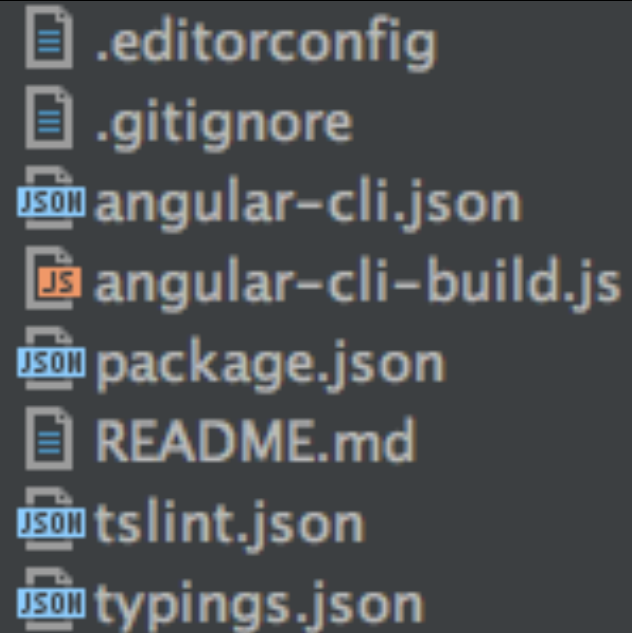
typings









Contains TypeScript type definition files.



Other files

Other configuration files.



-  .editorconfig
-  .gitignore
-  angular-cli.json
-  angular-cli-build.js
-  package.json
-  README.md
-  tslint.json
-  typings.json

Workflow Commands

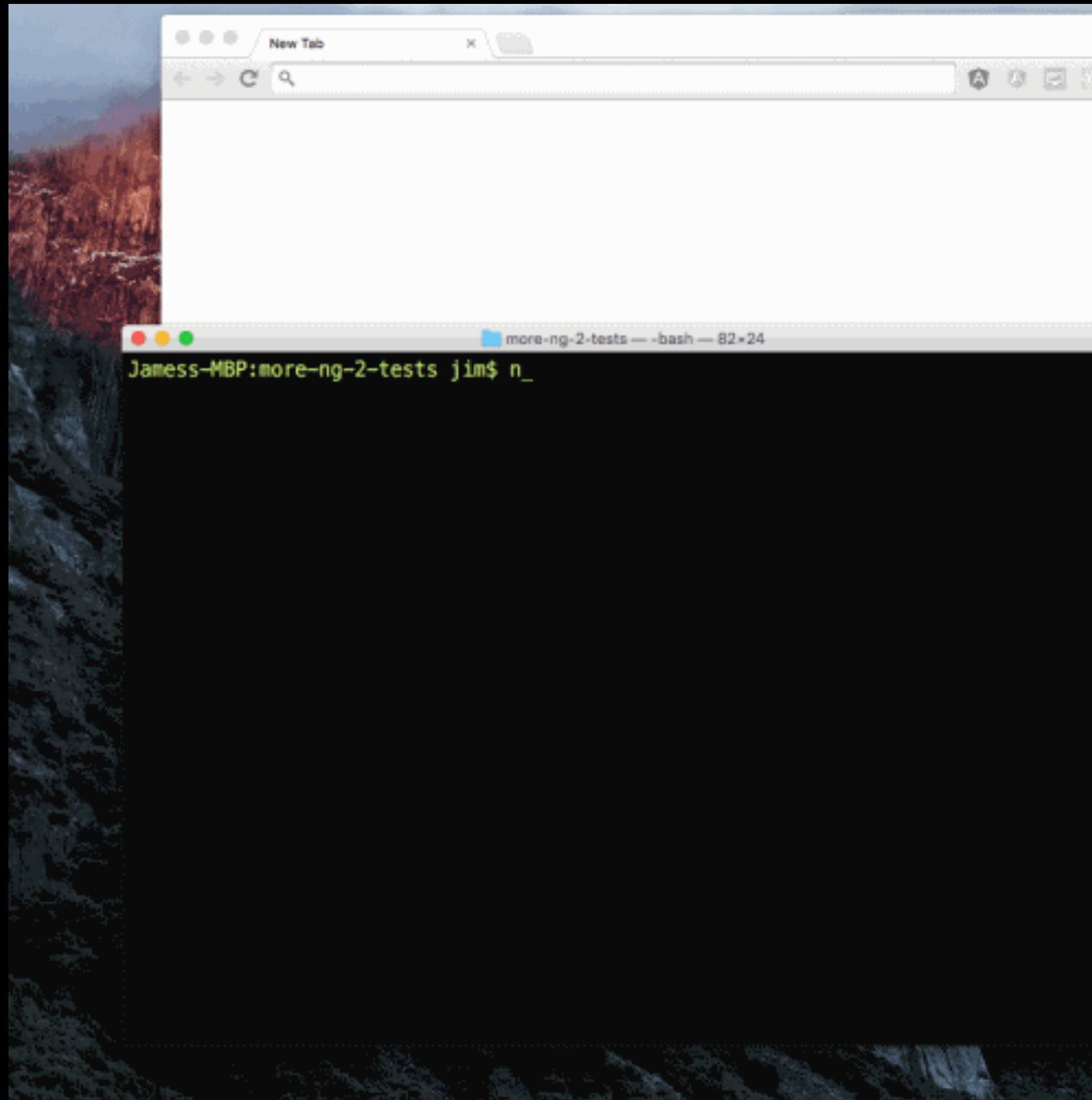
- ng serve

- ng test

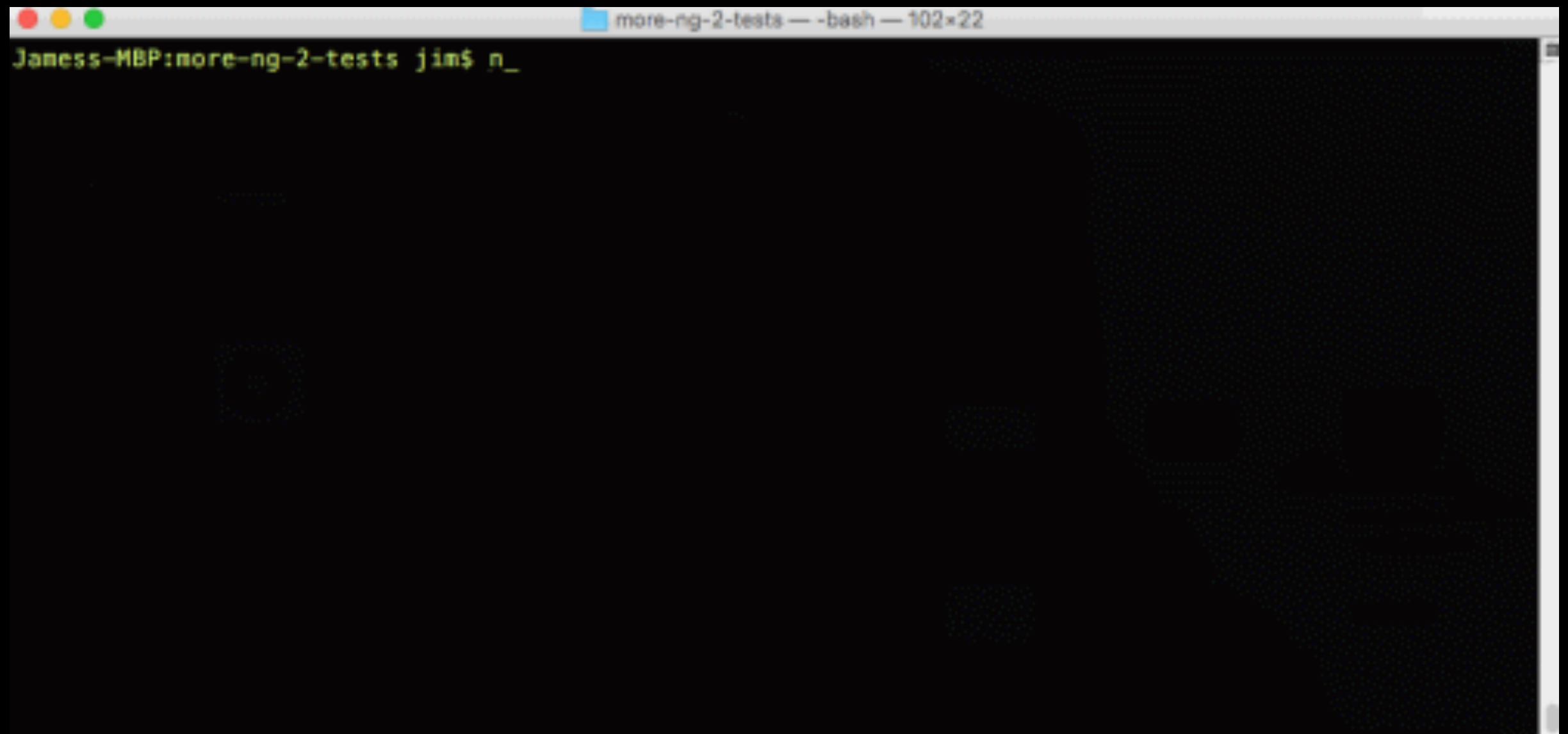
- ng e2e

- ng build

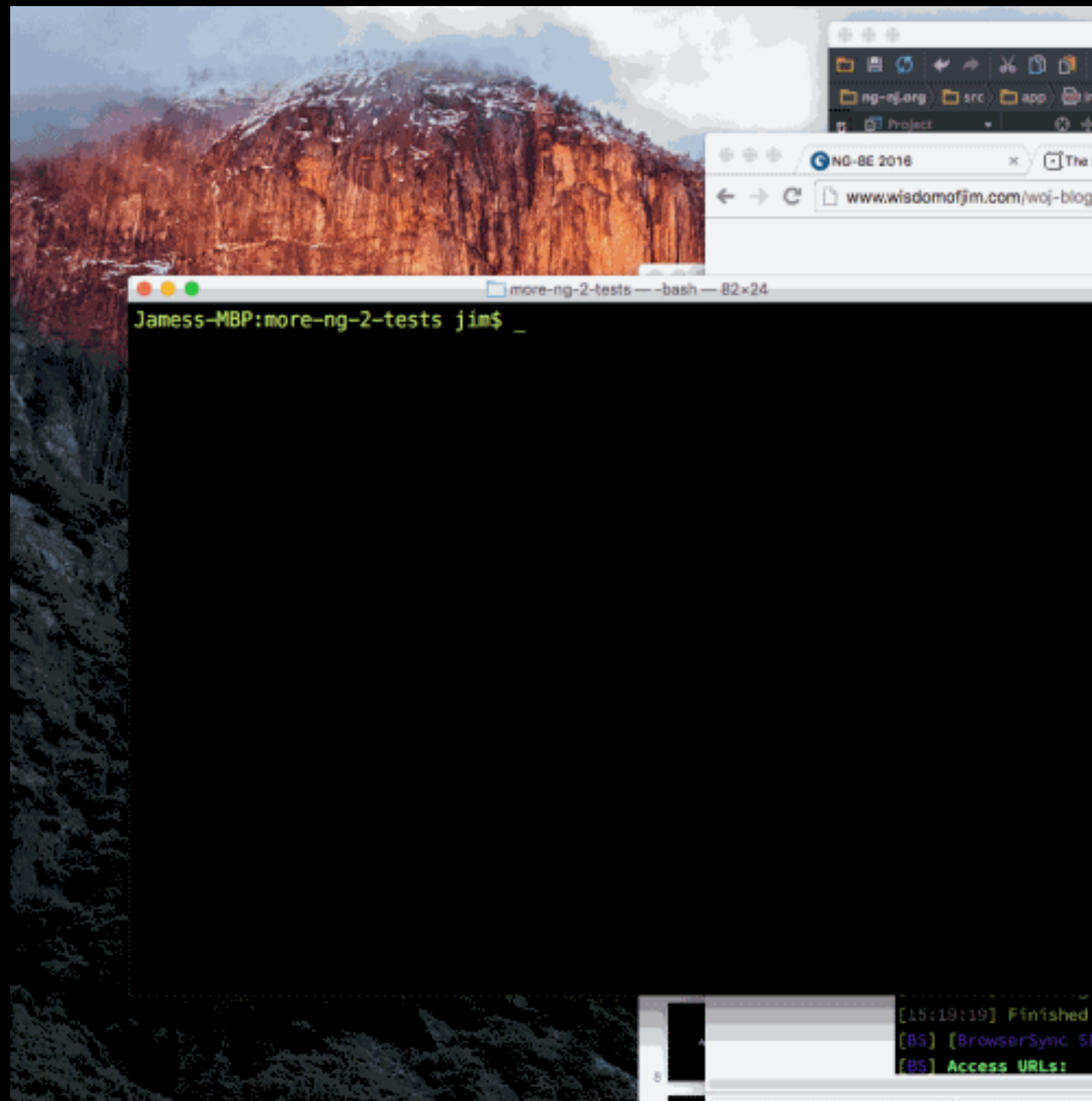
ng serve



ng test



ng e2e



ng build

```
James-MacBook-Pro:Angular-2-Screencast-Example jim$
```

```
ng build --prod --output-path dist
```

```
Done.
```

ng deploy gh:pages

```
James-MacBook-Pro:Angular-2-Screencast-Example jim$
```

```
ng deploy gh:pages --verbose
```

```
Done
```

Creating a Github Token

It's easy!

The screenshot shows the GitHub 'Personal access tokens' page. On the left is a sidebar with navigation links: Personal settings, Profile, Account, Emails, Notifications, Billing, SSH and GPG keys, Security, OAuth applications, **Personal access tokens** (highlighted with a red arrow and a red '1'), Repositories, Organizations, and Saved replies. Below this is the 'Organization settings' section. The main content area is titled 'Personal access tokens' and includes buttons for 'Revoke all' and 'Generate new token'. A blue warning box states: 'Make sure to copy your new personal access token now. You won't be able to see it again!' (indicated by a red arrow and a red '2'). Below this, a list of tokens is shown. The first token is a green bar containing the token value 'f895ae88d74de143fcf01471297549aba9f3c3d5' with a copy icon. The second token is 'ng2 token' with permissions 'admin:gpg_key, admin:org, admin:public_key, admin:repo_hook, gist, repo, user' and status 'Never used'. The third token is 'Travis Ng-NJ' with permissions 'admin:gpg_key, admin:org, admin:org_hook, admin:public_key, admin:repo_hook, delete_repo, gist, notifications, repo, user' and status 'Last used within the last 5 days'. Each token has 'Edit' and 'Delete' buttons. A red arrow points from the 'Personal access tokens' sidebar link to the token list. A red '1' is next to the sidebar link, and a red '2' is next to the warning box.

Personal settings

Profile

Account

Emails

Notifications

Billing

SSH and GPG keys

Security

OAuth applications

Personal access tokens

Repositories

Organizations

Saved replies

Organization settings

Personal access tokens

Revoke all

Generate new token

Tokens you have generated that can be used to access the [GitHub API](#).

Make sure to copy your new personal access token now. You won't be able to see it again!

✓ f895ae88d74de143fcf01471297549aba9f3c3d5

ng2 token — admin:gpg_key, admin:org, admin:public_key, admin:repo_hook, gist, repo, user

Travis Ng-NJ — admin:gpg_key, admin:org, admin:org_hook, admin:public_key, admin:repo_hook, delete_repo, gist, notifications, repo, user

Never used

Last used within the last 5 days

Edit Delete

Edit Delete

Edit Delete

1

2

Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to [authenticate to the API over Basic Authentication](#).

ng Generate!

- Scaffold individual components, routes, directives, services, or pipes!
- Alias for the generate command is just the letter g.
- The generated component has its own directory, unless the --flat options is specified.

ng g component

```
James-MacBook-Pro:more-ng-2-tests jim$ _
```

ng g service

```
James-MacBook-Pro:TestProject jim$ _
```



ng g pipe

```
James-MacBook-Pro:more-ng-2-tests jim$
```

ng g directive

```
Jamess-MacBook-Pro:TestProject jim$ _
```

...

Click to add

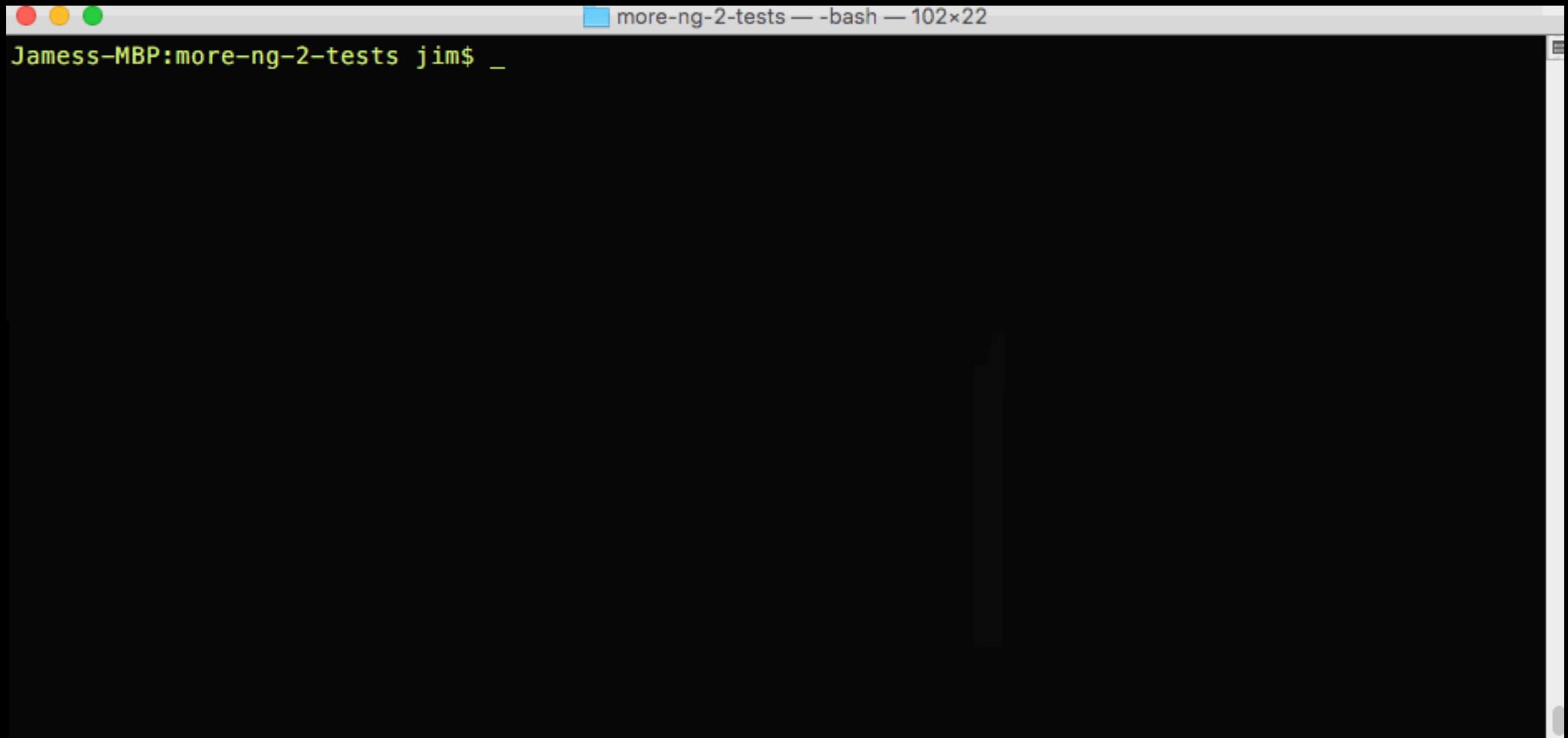
ng g route

```
Jamess-MacBook-Pro:Angular-2-Screencast-Example jim$ _
```

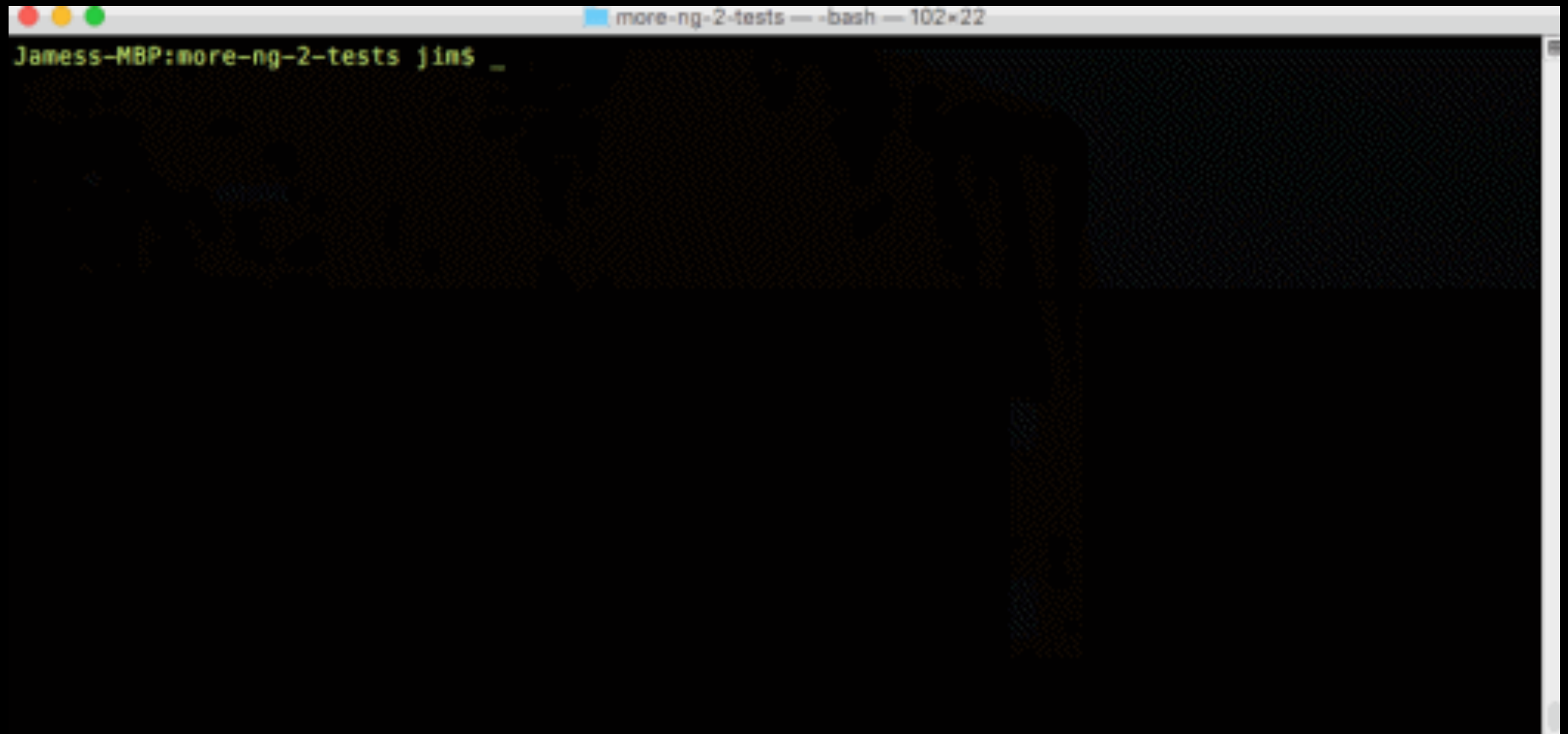


CLI Bonus Commands!

ng-lint



ng help

A screenshot of a macOS terminal window. The title bar at the top shows three colored window control buttons (red, yellow, green) on the left, and the text 'more-ng-2-tests -- -bash -- 102x22' on the right. The terminal content shows the prompt 'Jamess-MBP:more-ng-2-tests jms\$ _' followed by the command 'ng help'. The output of the command is displayed in a light blue monospace font on a black background. The output lists various Angular CLI commands and their descriptions, including 'add', 'build', 'e2e', 'extract-i18n', 'help', 'lint', 'new', 'serve', 'test', 'update', and 'version'.

```
Jamess-MBP:more-ng-2-tests jms$ _
ng help

add      Add new components, directives, pipes, or modules to an existing project.
build    Build the project.
e2e      Run end-to-end tests.
extract-i18n Extract the internationalization data from the project.
help     Display help information.
lint     Run linting on the project.
new      Create a new Angular project.
serve    Run the development server.
test     Run unit tests.
update   Update the project to the latest version.
version  Display the version of the project.
```

ng doc <keyword>

```
James-MacBook-Pro:~ jin$
```

ng version

```
James-MacBook-Pro:~ jim$ _
```



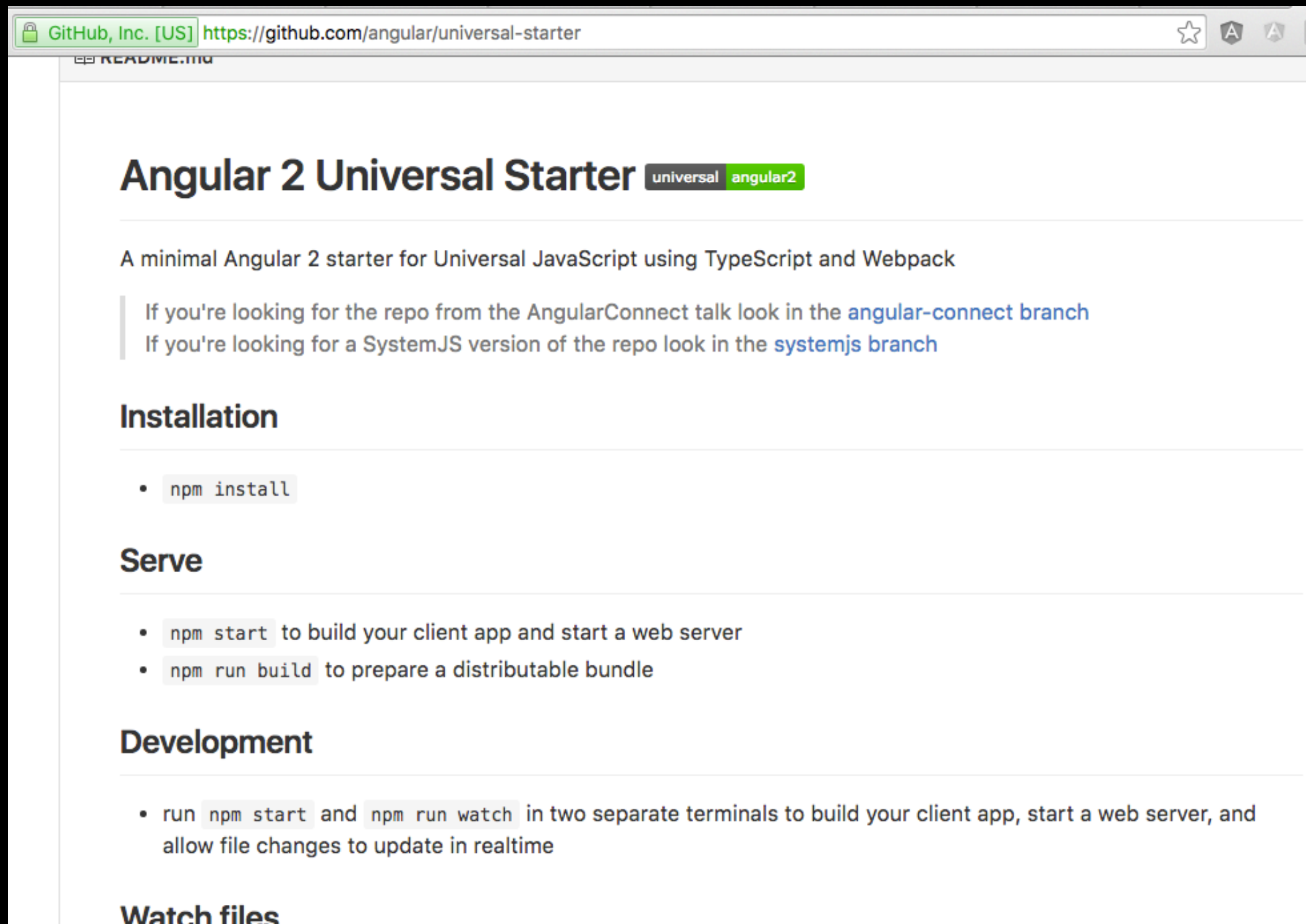
Things You Might Consider Adding to An Angular 2 Project

- CucumberJS / Acceptance tests
- Redux or any other Flux Store
- Angular Universal / App Shell
- Ionic / Angular for Native Apps

Other Generators

Do Exist!

Angular Universal Starter



The screenshot shows the GitHub repository page for 'angular/universal-starter'. The browser's address bar displays 'https://github.com/angular/universal-starter'. The repository name 'Angular 2 Universal Starter' is prominently displayed, with tabs for 'universal' and 'angular2'. Below the title, a description states: 'A minimal Angular 2 starter for Universal JavaScript using TypeScript and Webpack'. Two links are provided: 'angular-connect branch' for those looking for the repo from the AngularConnect talk, and 'systemjs branch' for those looking for a SystemJS version. The page is divided into sections: 'Installation' with the command 'npm install', 'Serve' with commands 'npm start' (to build and start a web server) and 'npm run build' (to prepare a distributable bundle), 'Development' with instructions to run 'npm start' and 'npm run watch' in separate terminals for real-time updates, and 'Watch files'.

GitHub, Inc. [US] <https://github.com/angular/universal-starter>

Angular 2 Universal Starter

universal angular2

A minimal Angular 2 starter for Universal JavaScript using TypeScript and Webpack

If you're looking for the repo from the AngularConnect talk look in the [angular-connect branch](#)
If you're looking for a SystemJS version of the repo look in the [systemjs branch](#)

Installation

- `npm install`

Serve

- `npm start` to build your client app and start a web server
- `npm run build` to prepare a distributable bundle

Development

- run `npm start` and `npm run watch` in two separate terminals to build your client app, start a web server, and allow file changes to update in realtime


Watch files

FountainJS

GitHub, Inc. [US]

https://github.com/FountainJS/generator-fountain-webapp

☆ A A E



Fountain Webapp Generator

build

passing

codecov

100%

slack

6/41

backers

1

sponsors

0

This Yeoman generator allows you to start any Webapp with the best Developer Experience out of the box!

No matter what framework or module management you want to use, we got you covered with a cutting edge working configuration.

We use [Gulp 4](#) as a task manager but we'll ask you questions about:

- Framework: React, Angular 2, Angular 1
- Modules management: Webpack, SystemJS, none
- JS preprocessor: Babel, TypeScript, none
- CSS preprocessor: Sass, Stylus, Less, none

This generator is the entry point of the Yeoman Fountain generators for webapps. It can be considered as the v2 of [generator-gulp-angular](#).

Questions?



twitter.com/webWhizJim



github.com/JimTheMan



www.wisdomofjim.com

Slides available here:

www.slideshare.net/JimLynch22/getting-started-with-the-angular-2-cli

Thanks!