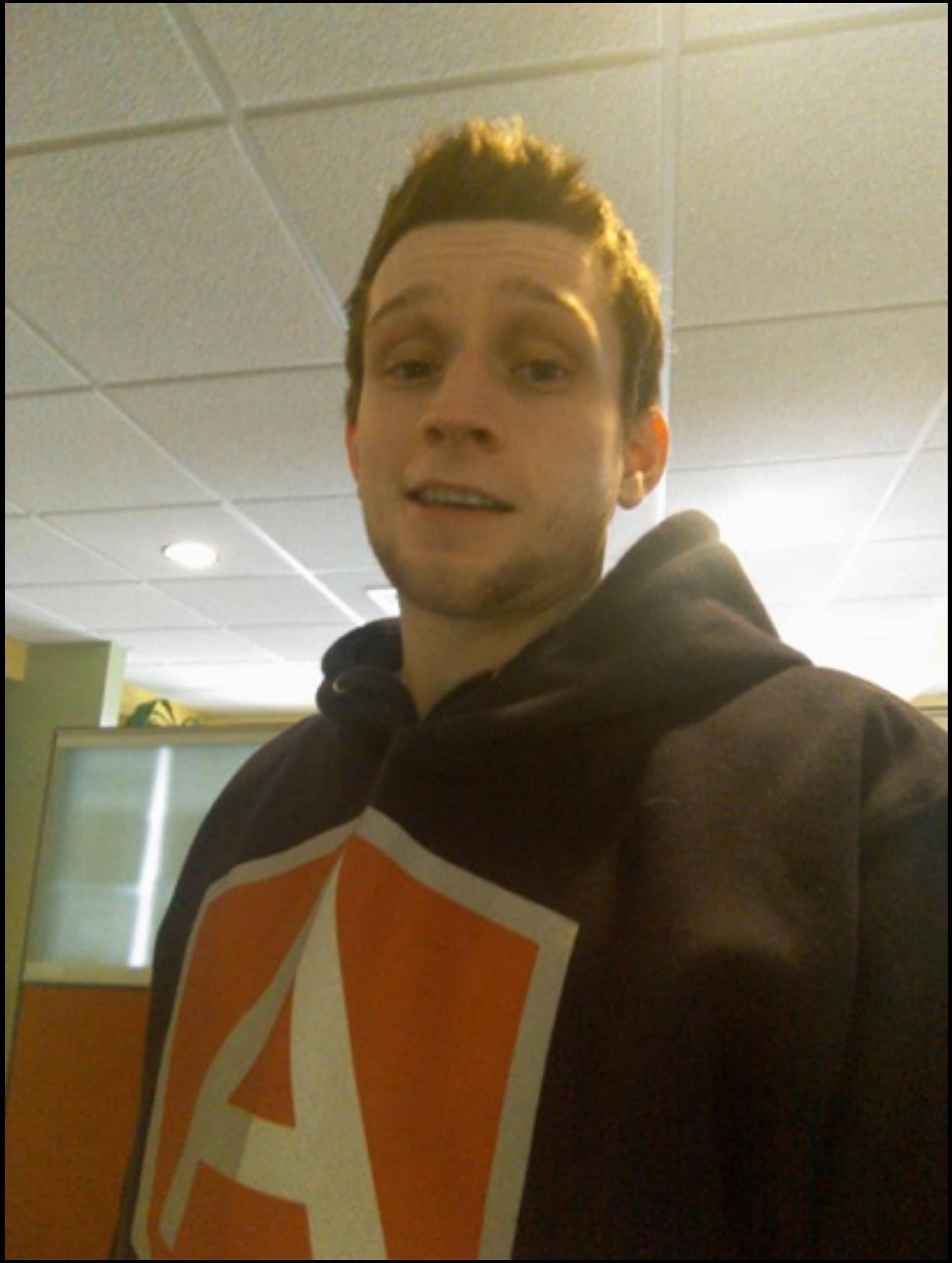
Getting Started With The Angular 2 CLI

by Jim Lynch

July 2016

Jim Lynch



Front-End Engineer at Altered Image

WebStorm Ambassador

@webWhizJim

"The BDD Angular Guy"

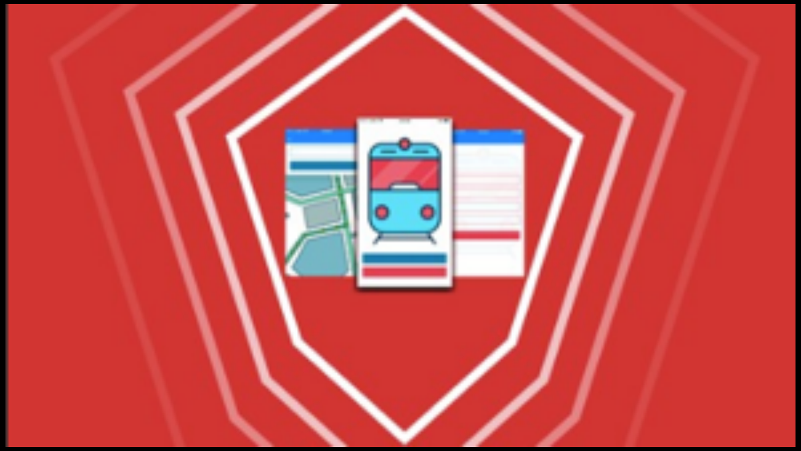
Slides available here:

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/?couponCode=blackhat&pmtag=CELEBRATE40&utm_source=codek.tv

Resources for Learning Angular 2

2. Accelerating Through Angular 2 - CodeSchool.com

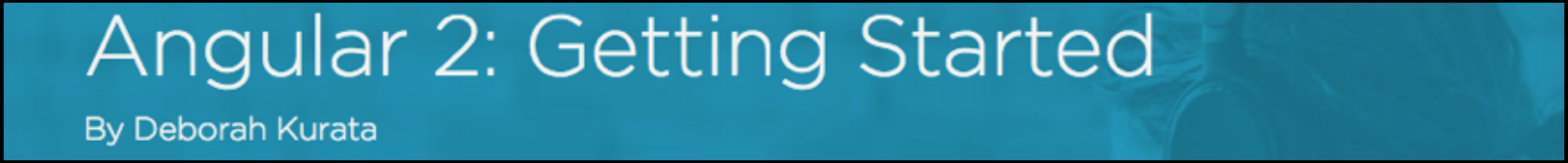
(First level free, then requires pro membership)

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

Resources for Learning Angular 2

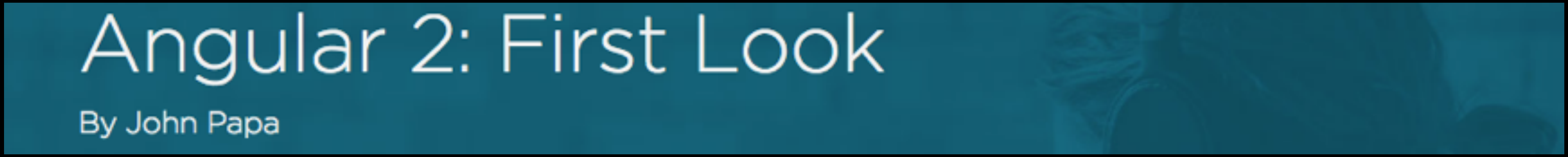
3. Pluralsight Courses

(requires pluralsight membership)



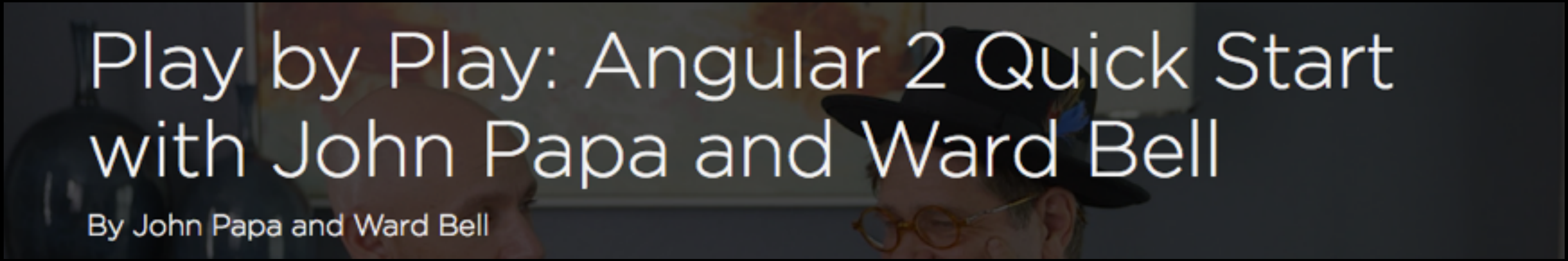
Angular 2: Getting Started

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!

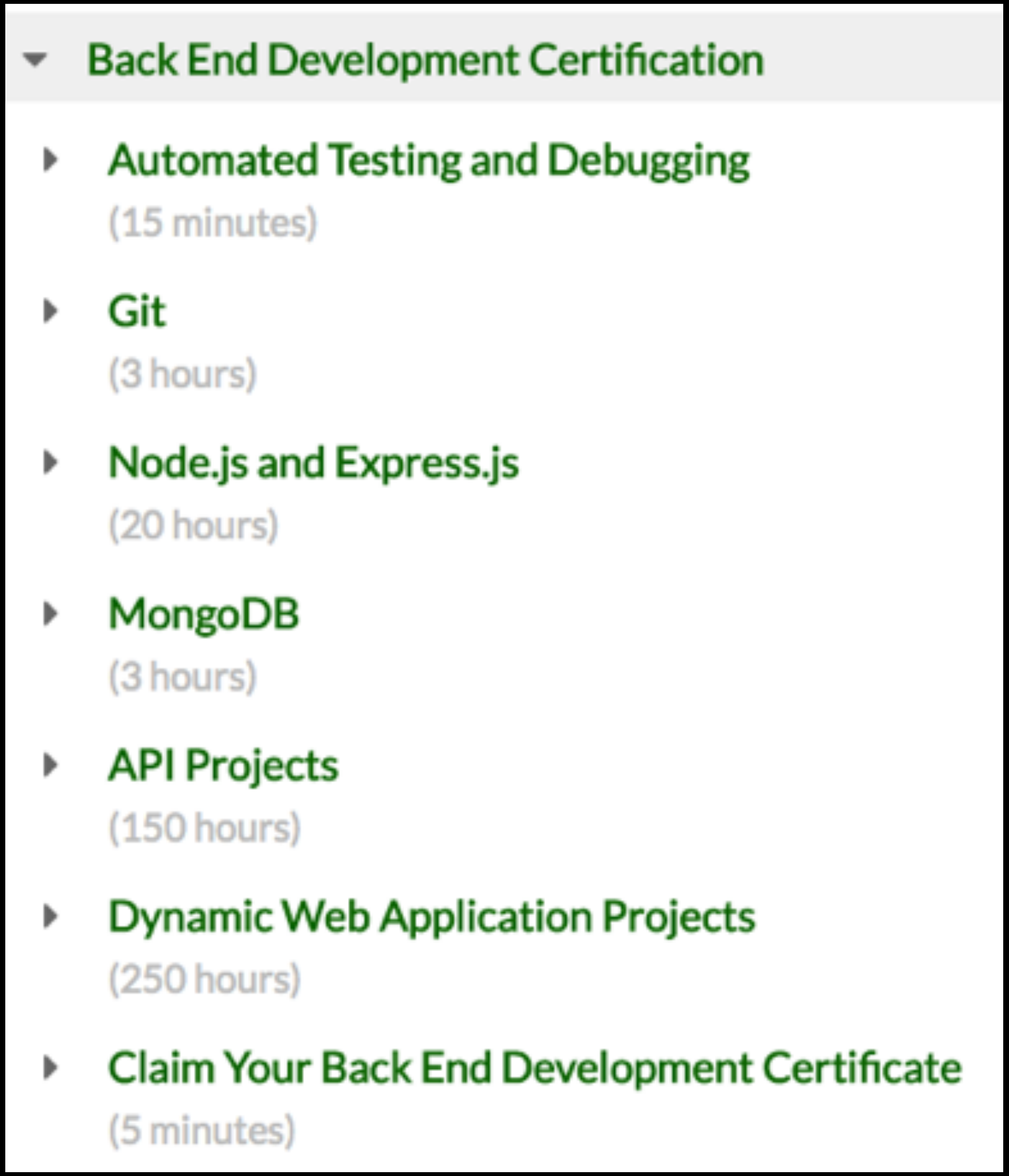
Code School
a Pluralsight company

https://www.codeschool.com/

- Shell Productivity Elective Course

- Unix Basics Elective Course

Resources for Learning Command Line / BASH



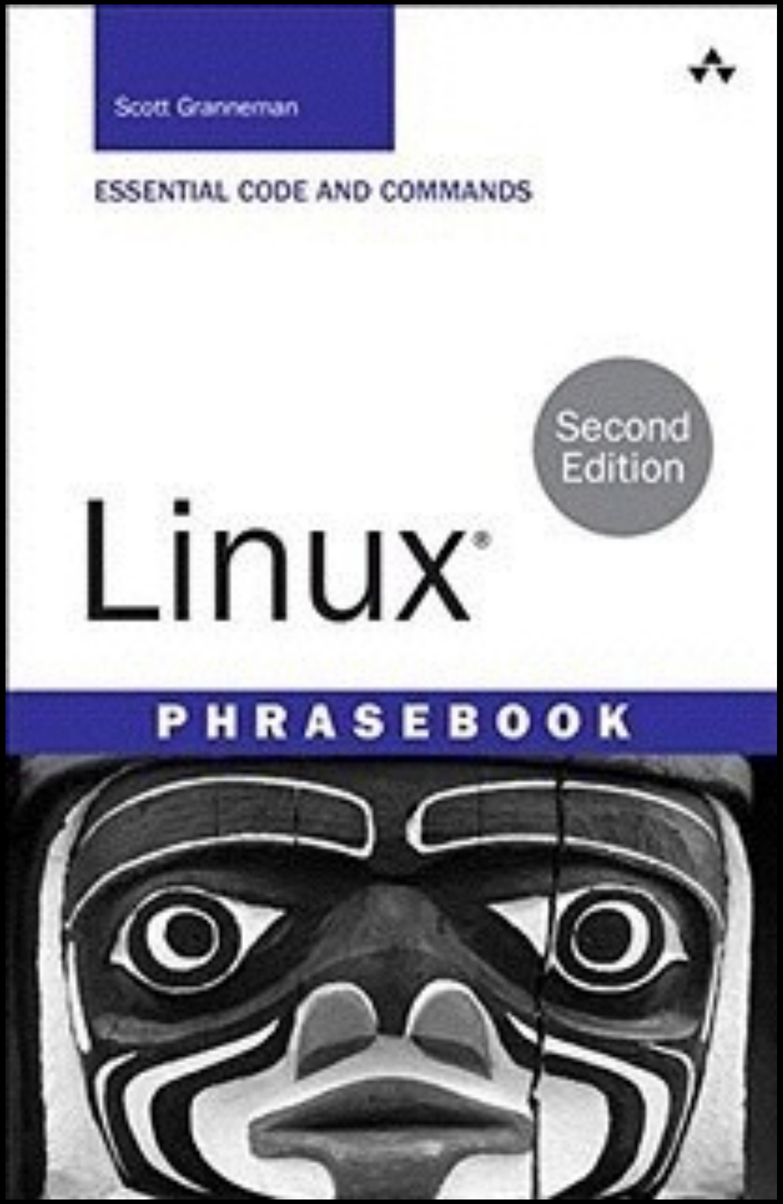
- Back End Development Certification
  - Automated Testing and Debugging (15 minutes)
  - Git (3 hours)
  - Node.js and Express.js (20 hours)
  - MongoDB (3 hours)
  - API Projects (150 hours)
  - Dynamic Web Application Projects (250 hours)
  - Claim Your Back End Development Certificate (5 minutes)

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.

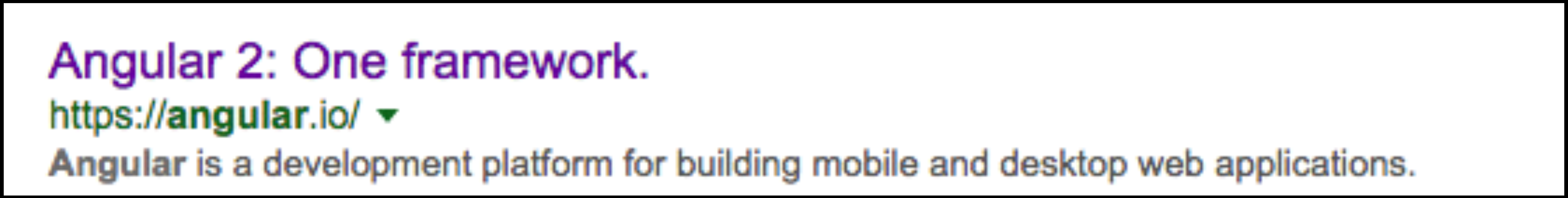
Resources Specifically For Learning Angular 2 CLI

- 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

- Components
- Directives
- Routes
- Services
- Pipes

(Eerily similar the building blocks of AngularJS)

- Controllers
- Directives
- Routes
- Services
- Filters

Differences From Angular 1

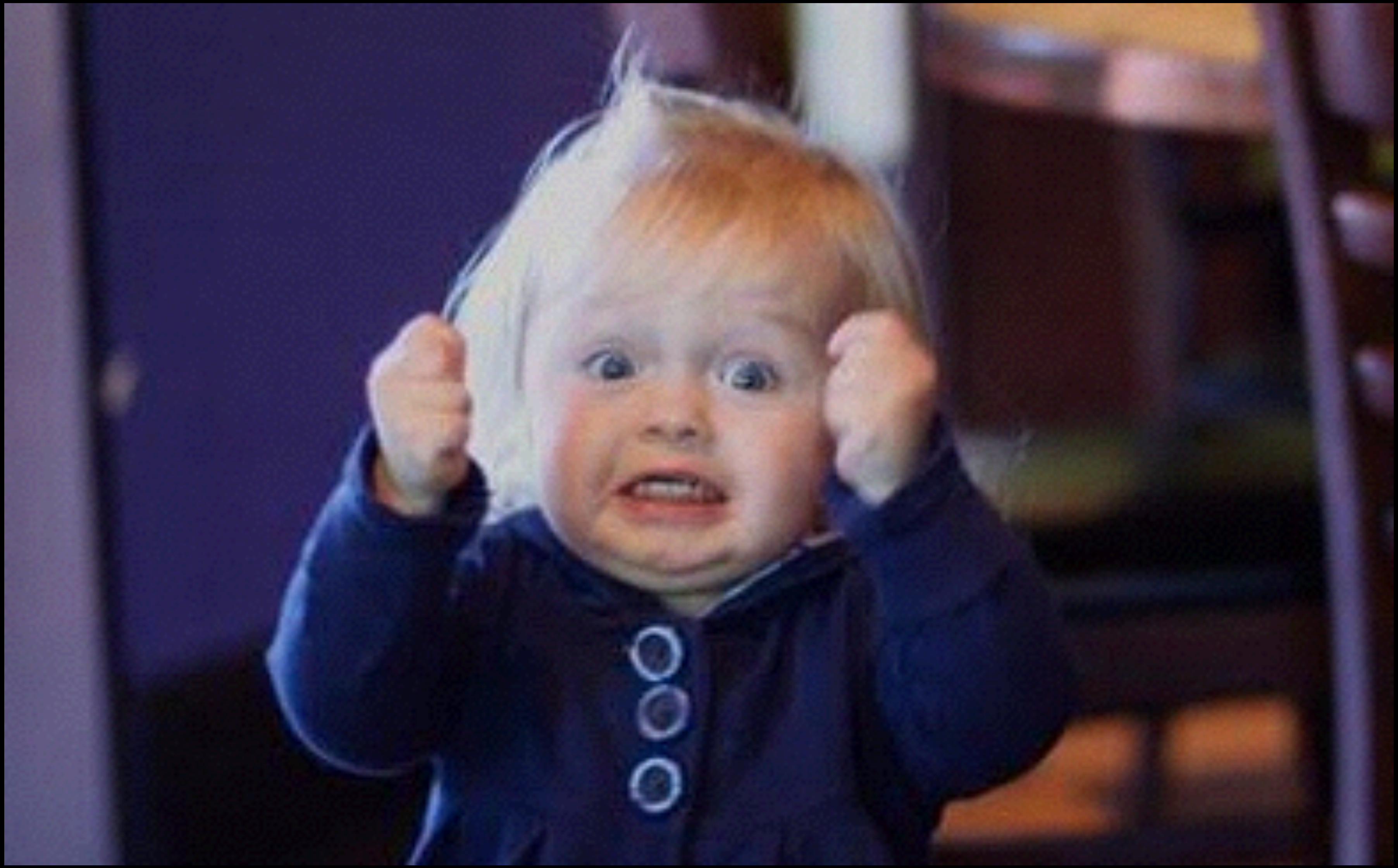
- No more “ng-“ directives! New syntax for binding directly to events instead.
- Namespaced CSS / Sass
- Simpler concept of Directives, No link functions in ng2!
- Nice router with power and flexibility of UI-Router
- Crazy fast with Shadow DOM under the hood.
- Projects are written in TypeScript (usually).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

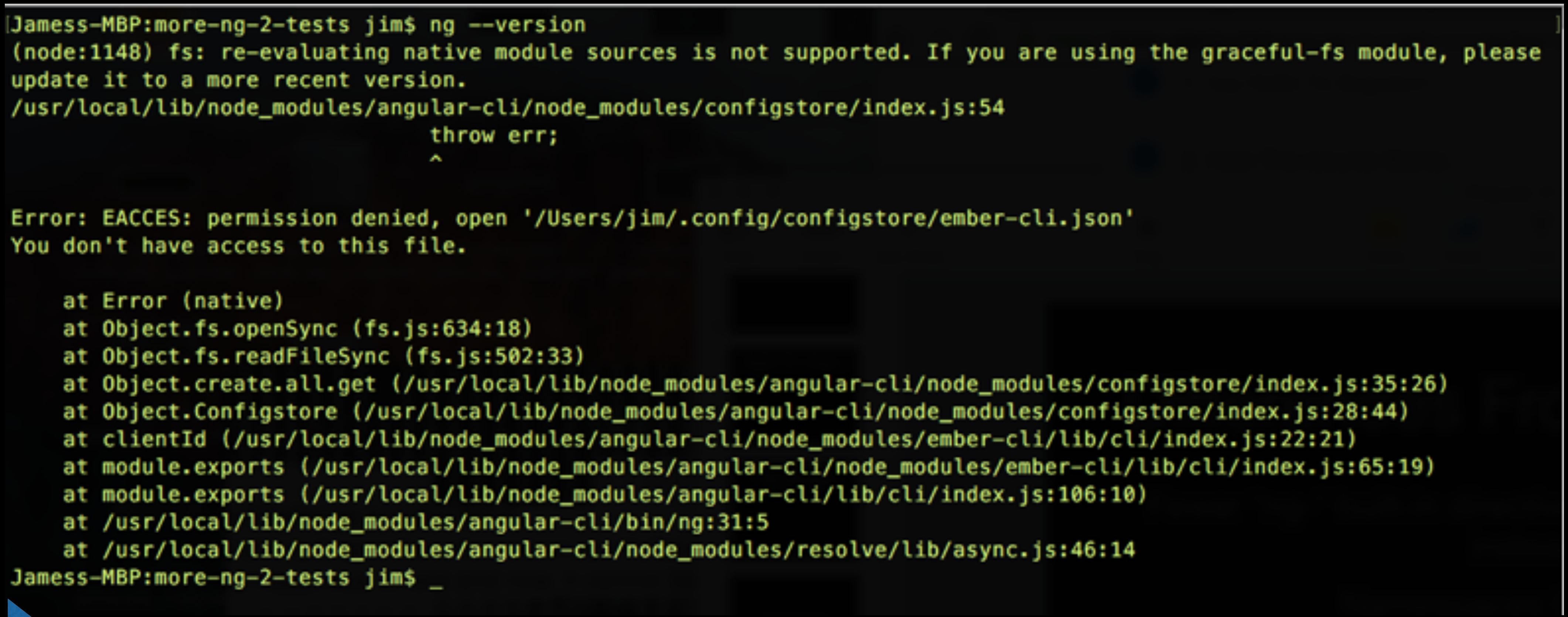
This is where your Angular 2 CLI journey begins!

```
Jamess-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$ _
```

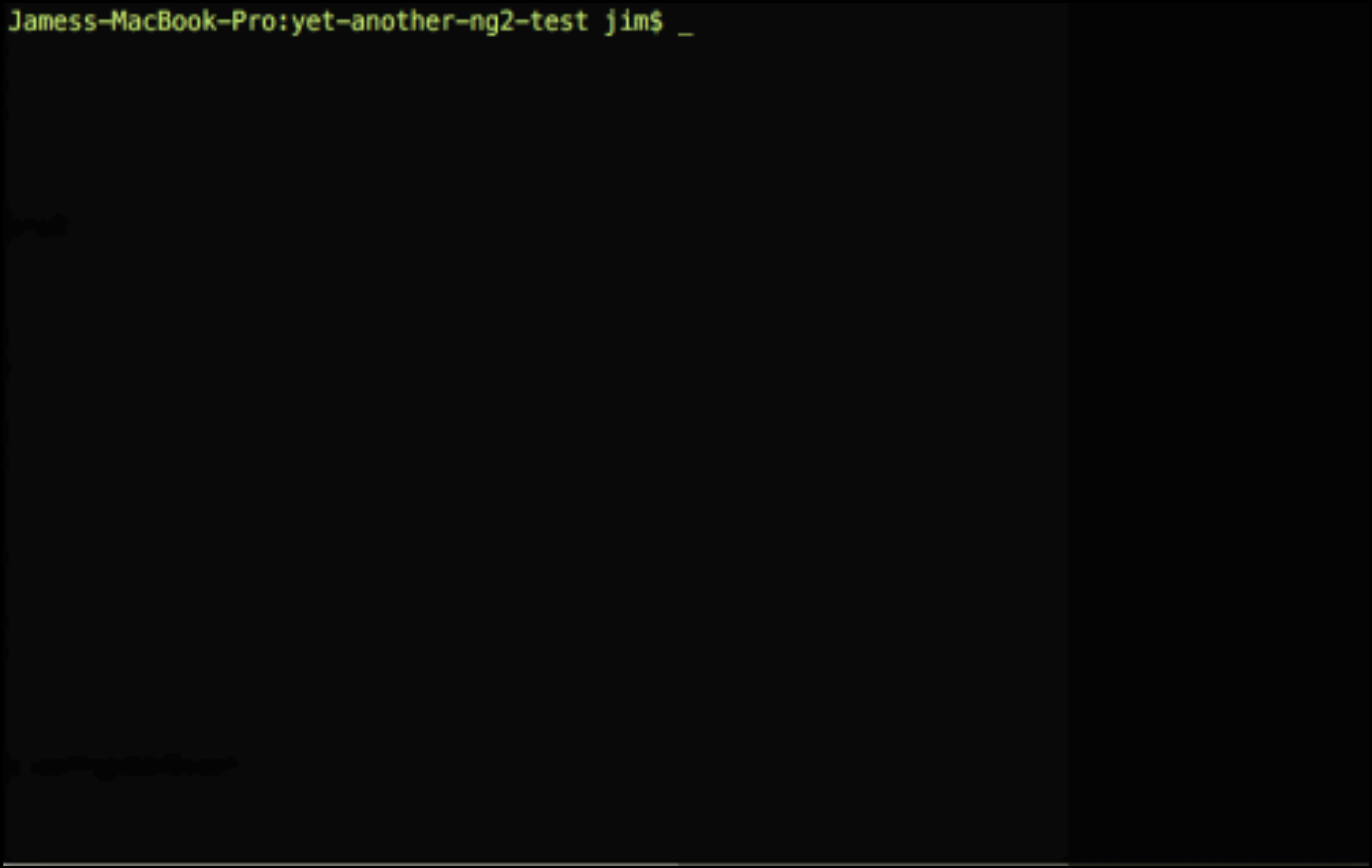
Give your current user ownership of ember-cli.json

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

ng new

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

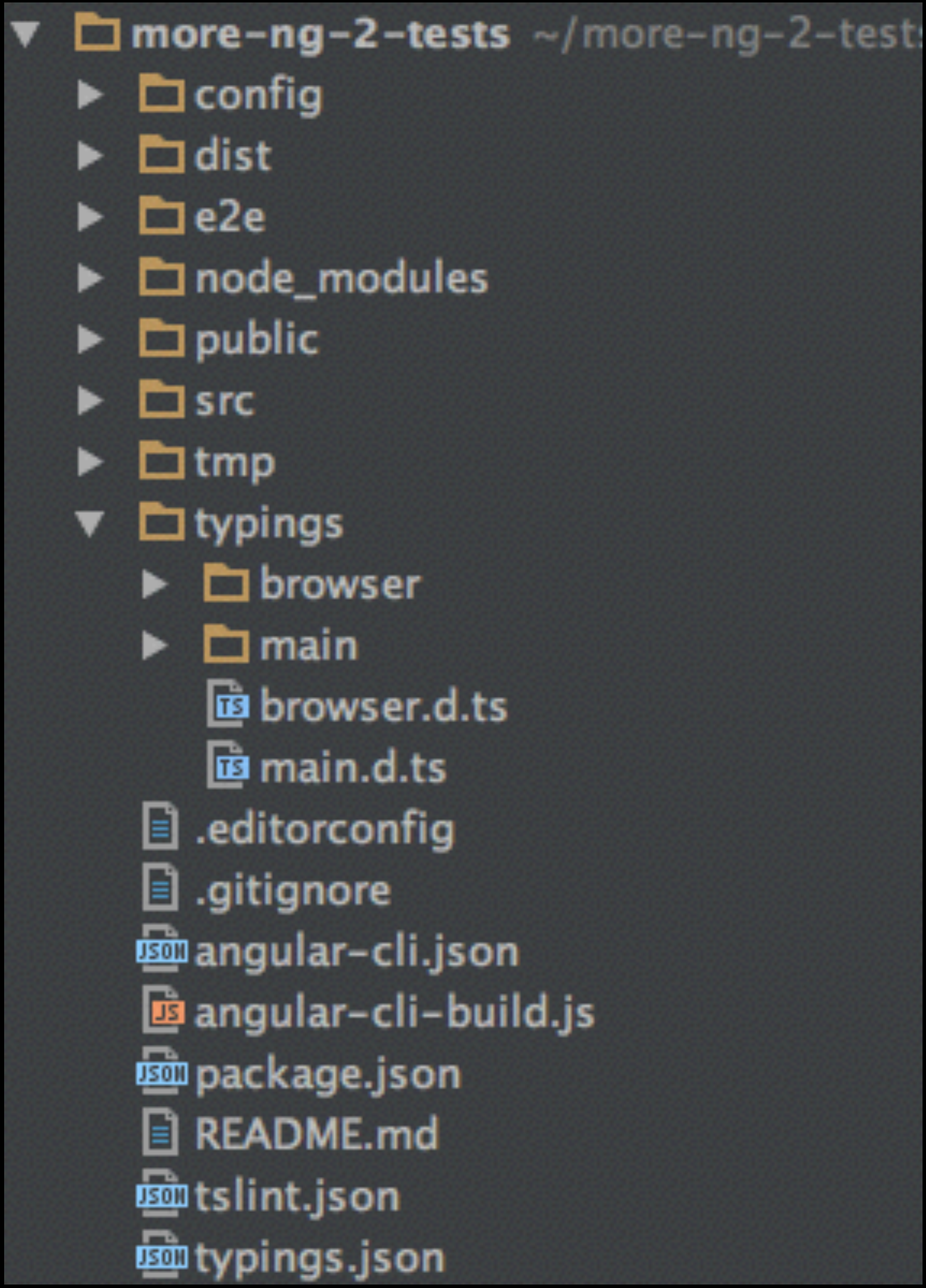
ng init



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

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!

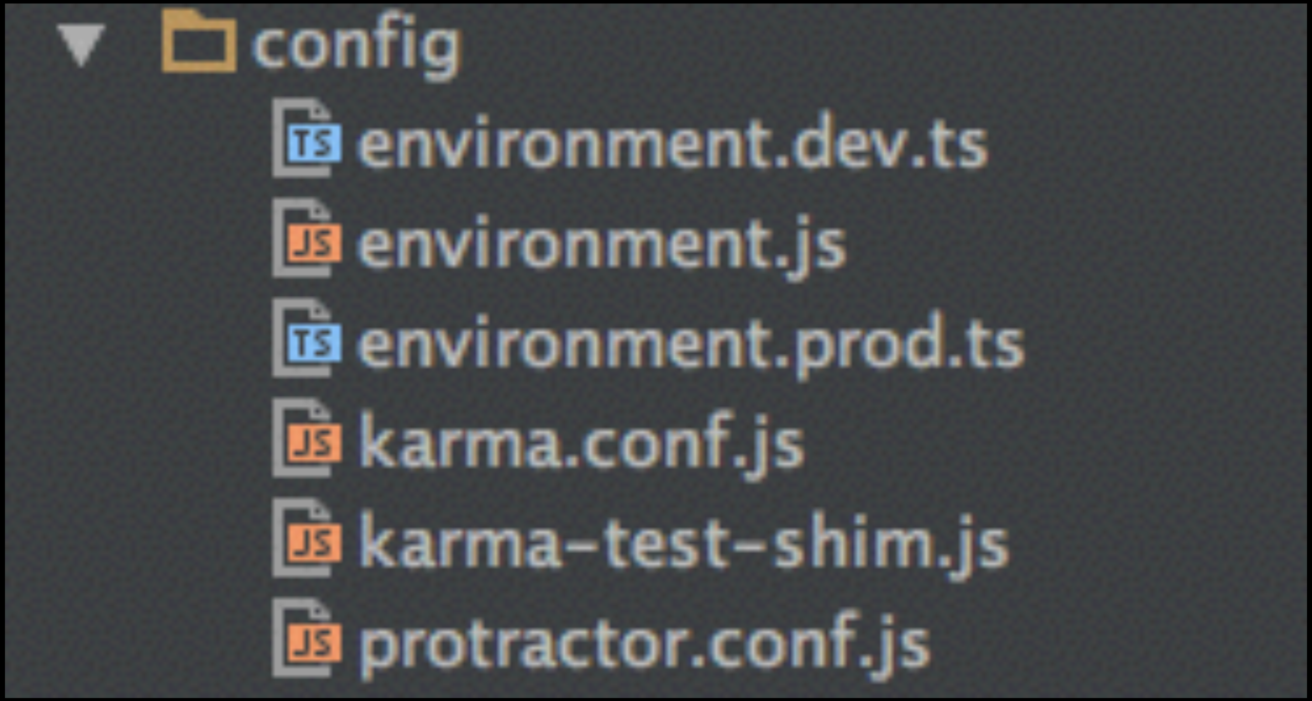
A Closer Look

a What Was Created

Config

Environment files for setting *production* boolean environment variable.

Configuration files for automated test runners.

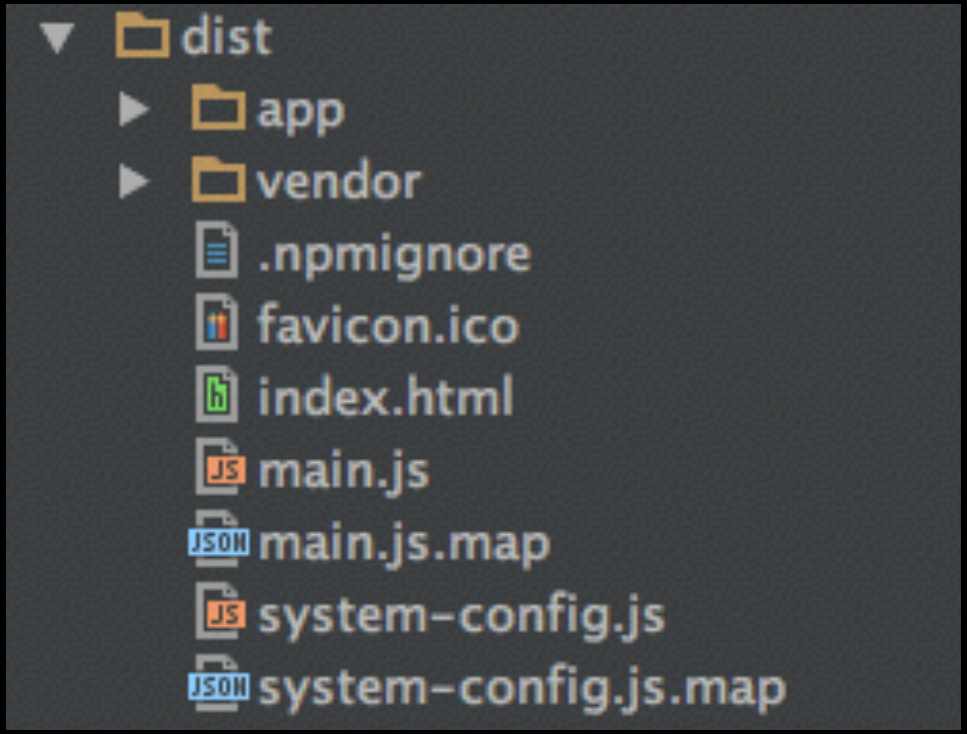


```
▼ config
    environment.dev.ts
    environment.js
    environment.prod.ts
    karma.conf.js
    karma-test-shim.js
    protractor.conf.js
```

Dist

Folder that gets written to by build task

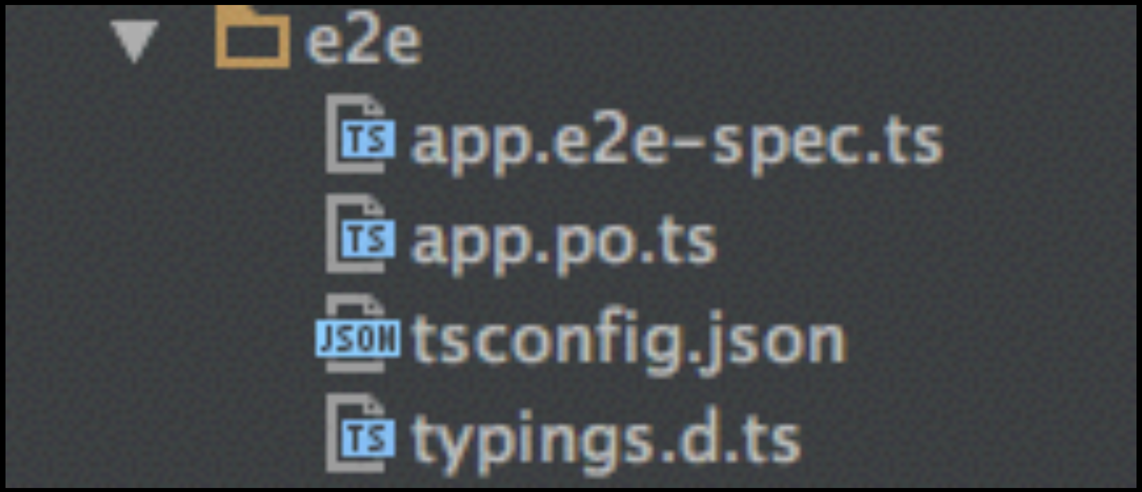
Contains final, minified files that get hosted
to be the final, live product.



```
▼ dist
    ▶ app
    ▶ vendor
      .npmignore
      favicon.ico
      index.html
      main.js
      main.js.map
      system-config.js
      system-config.js.map
```

E2e

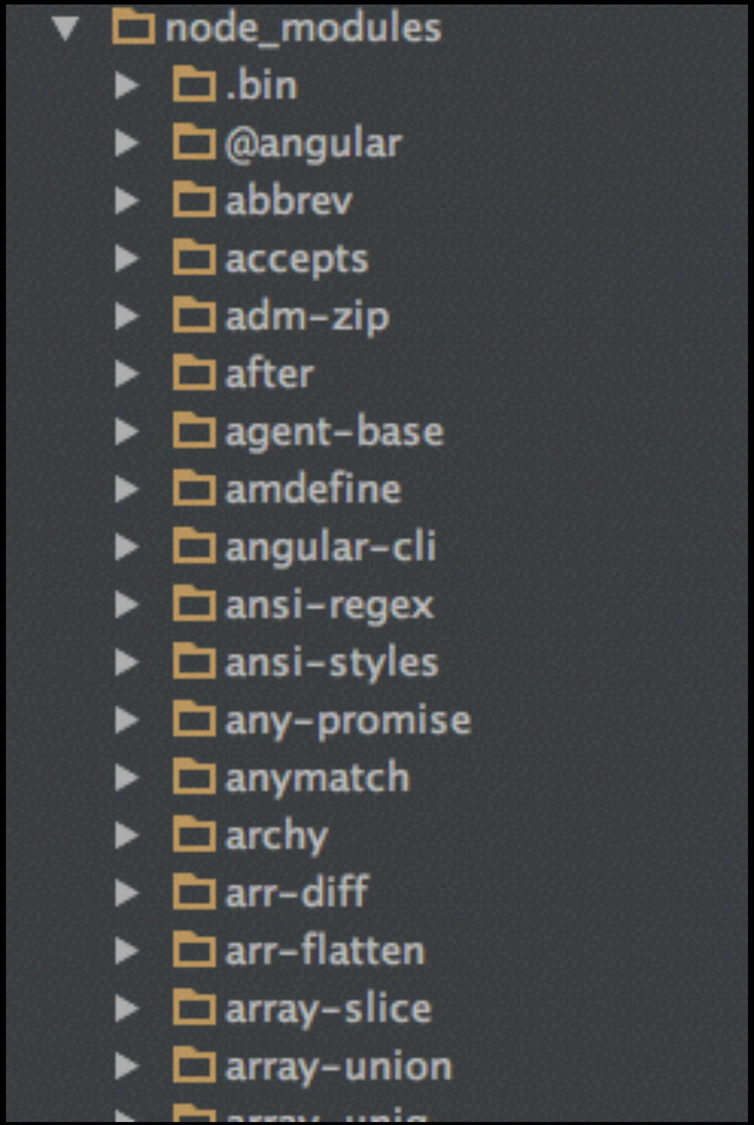
Contains files for e2e and integration tests run by Protractor.



```
▼ e2e
    app.e2e-spec.ts
    app.po.ts
    tsconfig.json
    typings.d.ts
```

node_modules

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



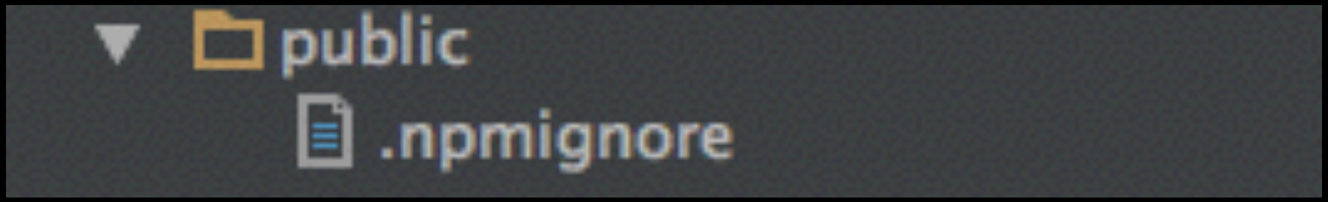
```
▼ node_modules
    ▶ .bin
    ▶ @angular
    ▶ abbrev
    ▶ accepts
    ▶ adm-zip
    ▶ after
    ▶ agent-base
    ▶ amdefine
    ▶ angular-cli
    ▶ ansi-regex
    ▶ ansi-styles
    ▶ any-promise
    ▶ anymatch
    ▶ archy
    ▶ arr-diff
    ▶ arr-flatten
    ▶ array-slice
    ▶ array-union
    ▶ array-uniq
```

Public

Contains the .gitignore file.

A place for images and
other static assets.

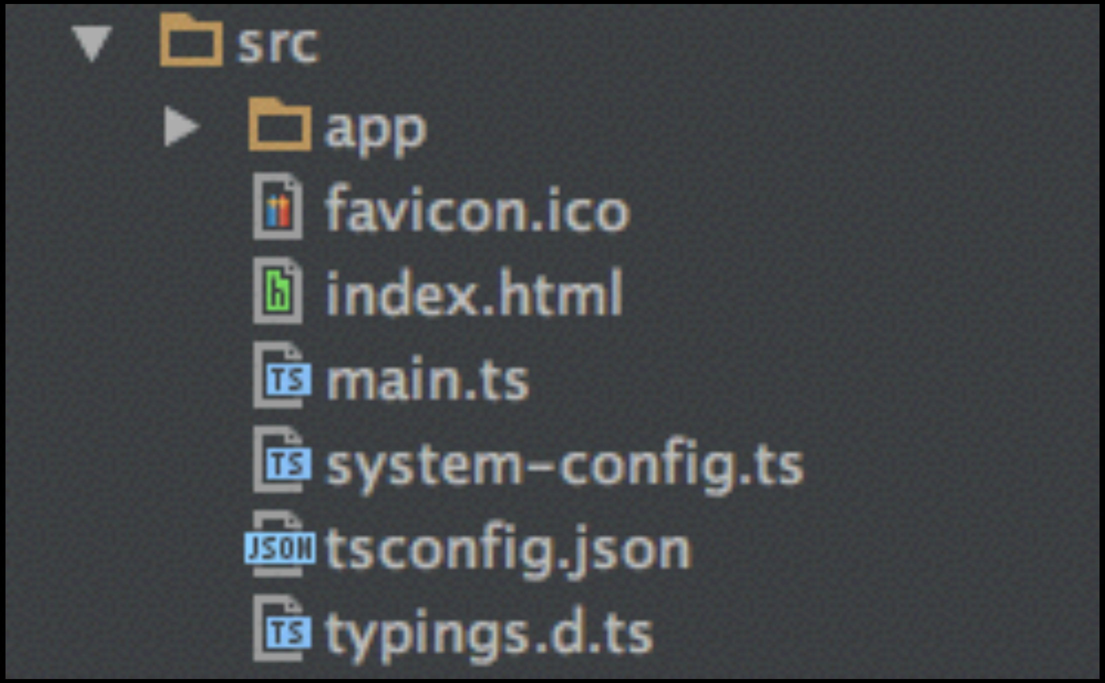
Some people like to put manually added
libraries here.



```
▼ public
    .npmignore
```

Src

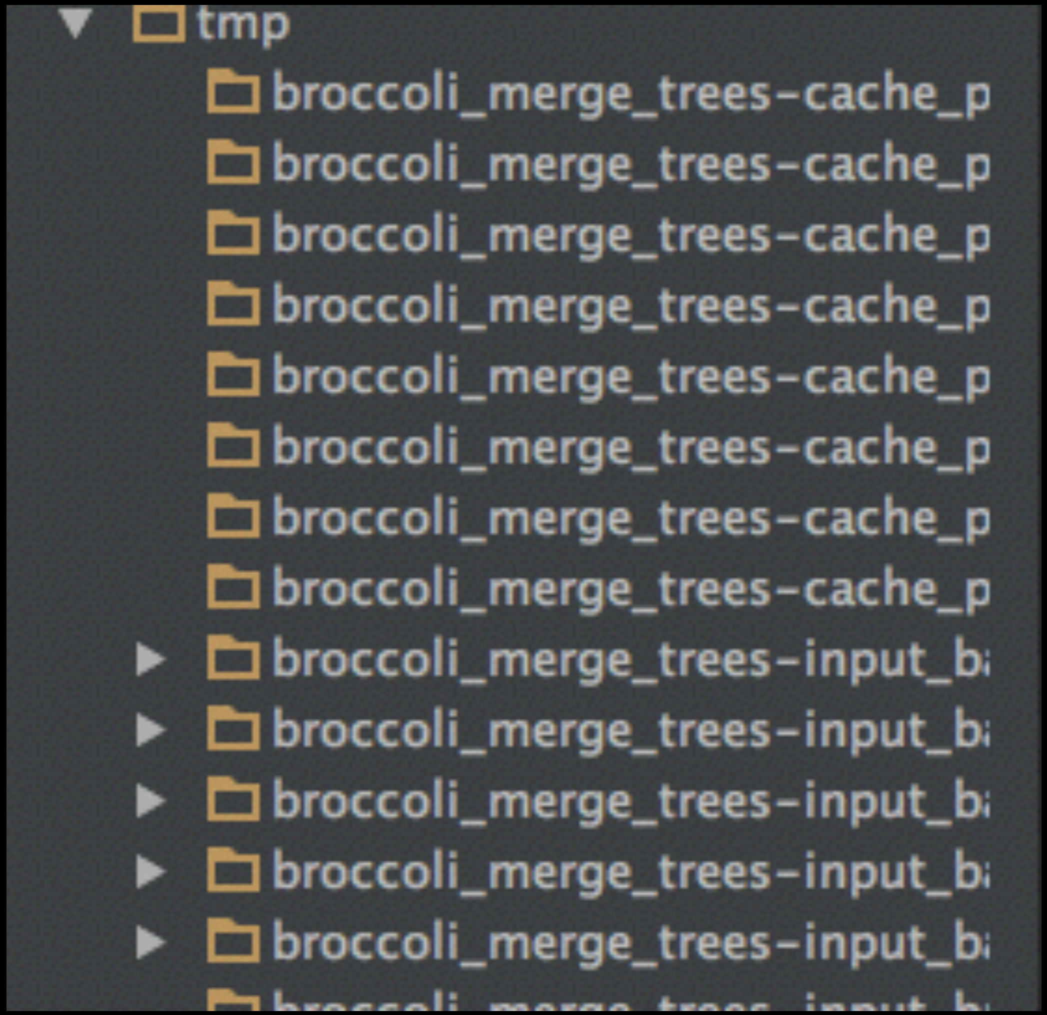
Contains all of your source code!



```
▼ src
  ▶ app
    favicon.ico
    index.html
    main.ts
    system-config.ts
    tsconfig.json
    typings.d.ts
```

Tmp

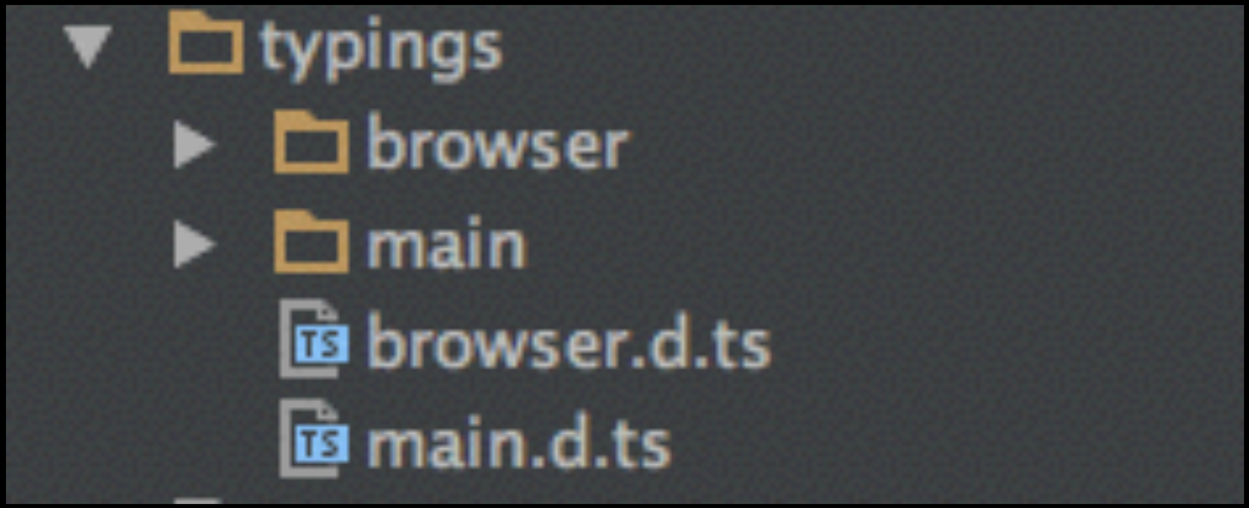
Contains temporary files that Angular CLI generates and uses to runs its tasks.



```
▼ tmp
    broccoli_merge_trees-cache_p
    broccoli_merge_trees-cache_p
    broccoli_merge_trees-cache_p
    broccoli_merge_trees-cache_p
    broccoli_merge_trees-cache_p
    broccoli_merge_trees-cache_p
    broccoli_merge_trees-cache_p
    broccoli_merge_trees-cache_p
  ▶ broccoli_merge_trees-input_b
  ▶ broccoli_merge_trees-input_b
  ▶ broccoli_merge_trees-input_b
  ▶ broccoli_merge_trees-input_b
  ▶ broccoli_merge_trees-input_b
    broccoli_merge_trees-input_b
```

typings

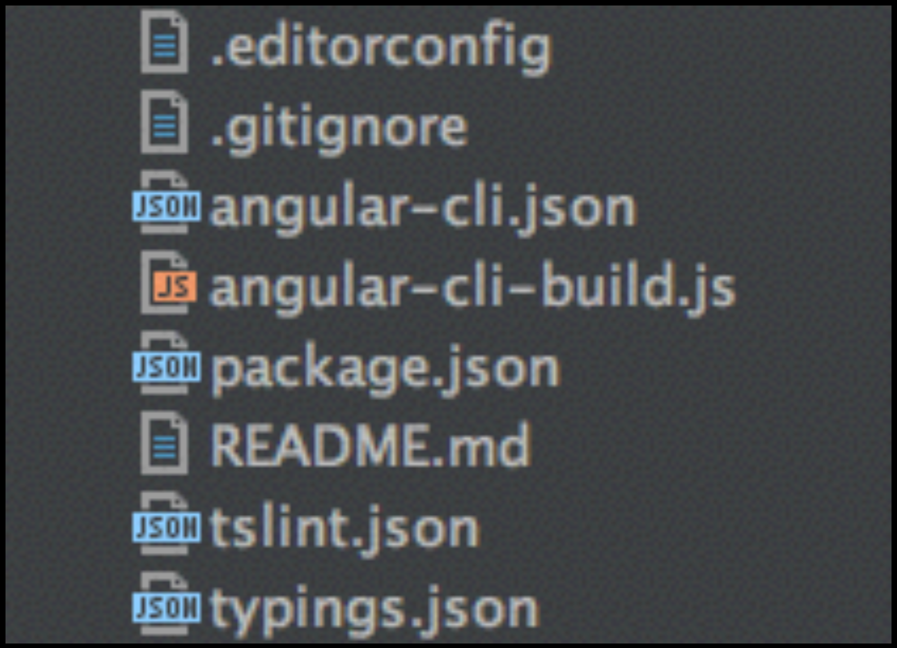
Contains TypeScript type definition files.



```
▼ typings
  ▶ browser
  ▶ main
    browser.d.ts
    main.d.ts
```

Other files

Other configuration files.



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

Workflow Commands

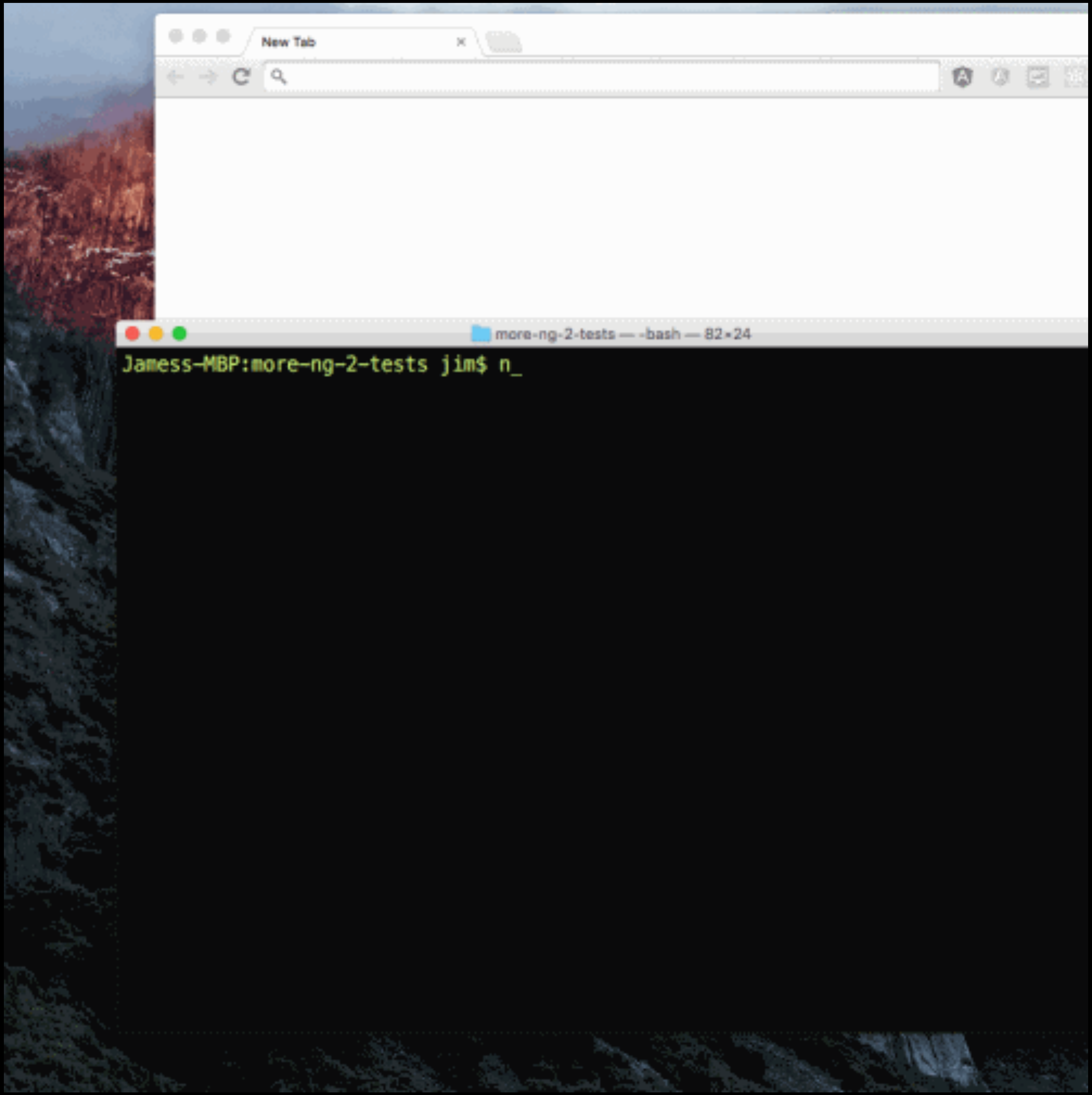
- ng serve

- ng test

- ng e2e

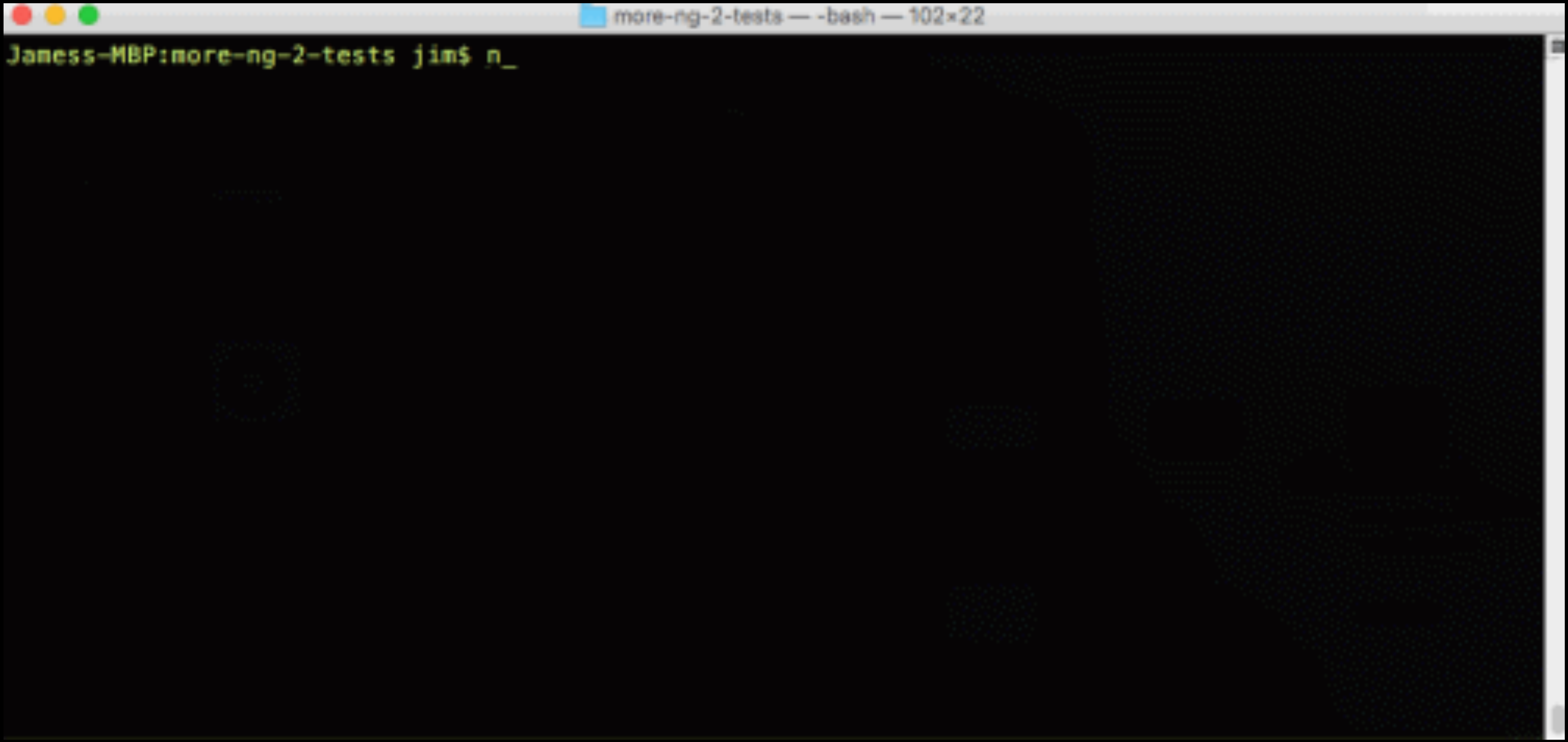
- ng build

ng serve



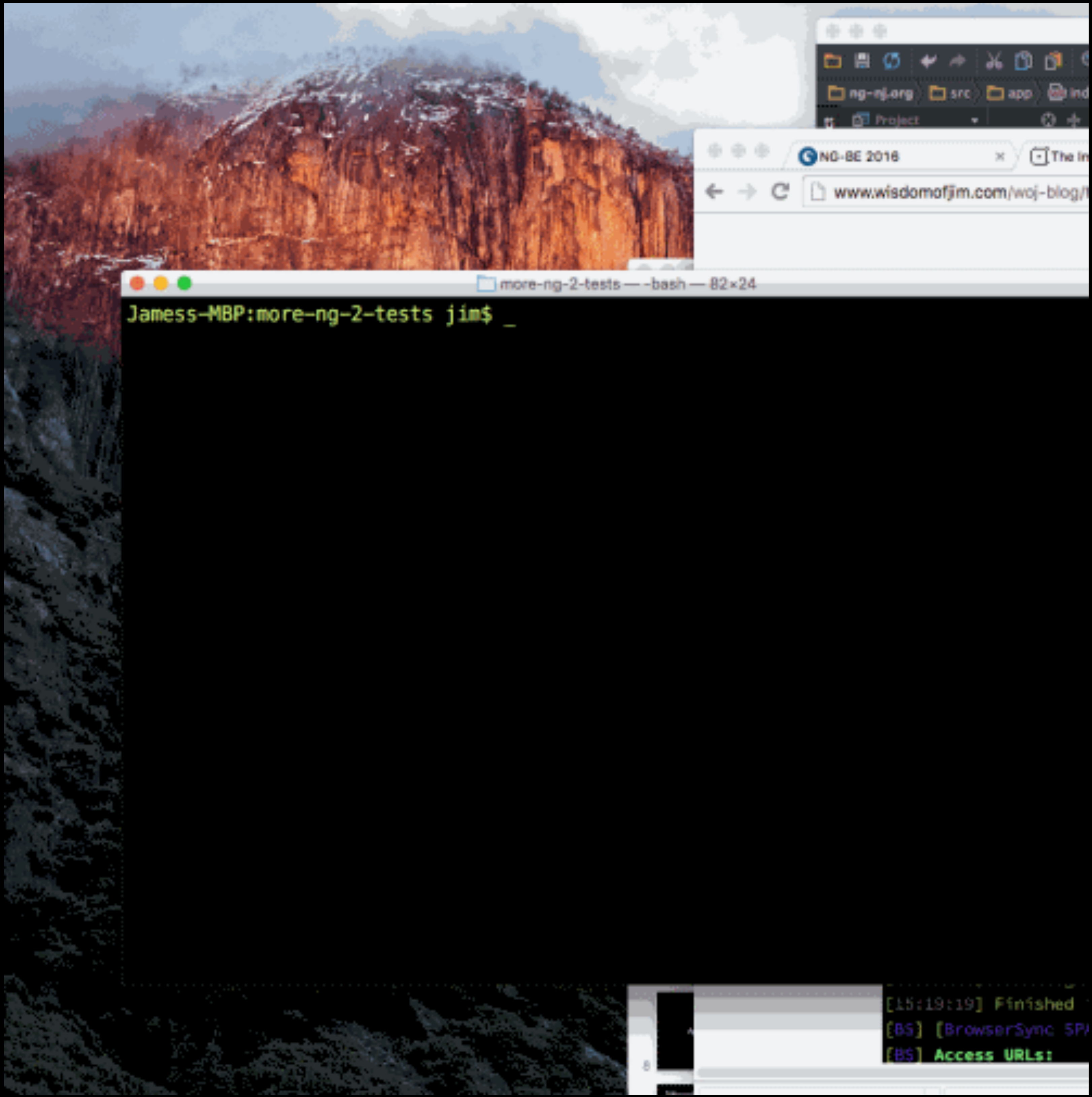
```
Jamess-MBP:more-ng-2-tests jim$ n_
```

ng test



```
Jamess-MBP:more-ng-2-tests jim$ n_
```

ng e2e



ng-nj.org
src
app
Project
NG-BE 2016
www.wisdomofjim.com/woj-blog/
more-ng-2-tests — -bash — 82×24

```
Jamess-MBP:more-ng-2-tests jim$ _
```

```
[15:19:19] Finished
[BS] [BrowserSync SP
[BS] Access URLs:
```

ng build

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

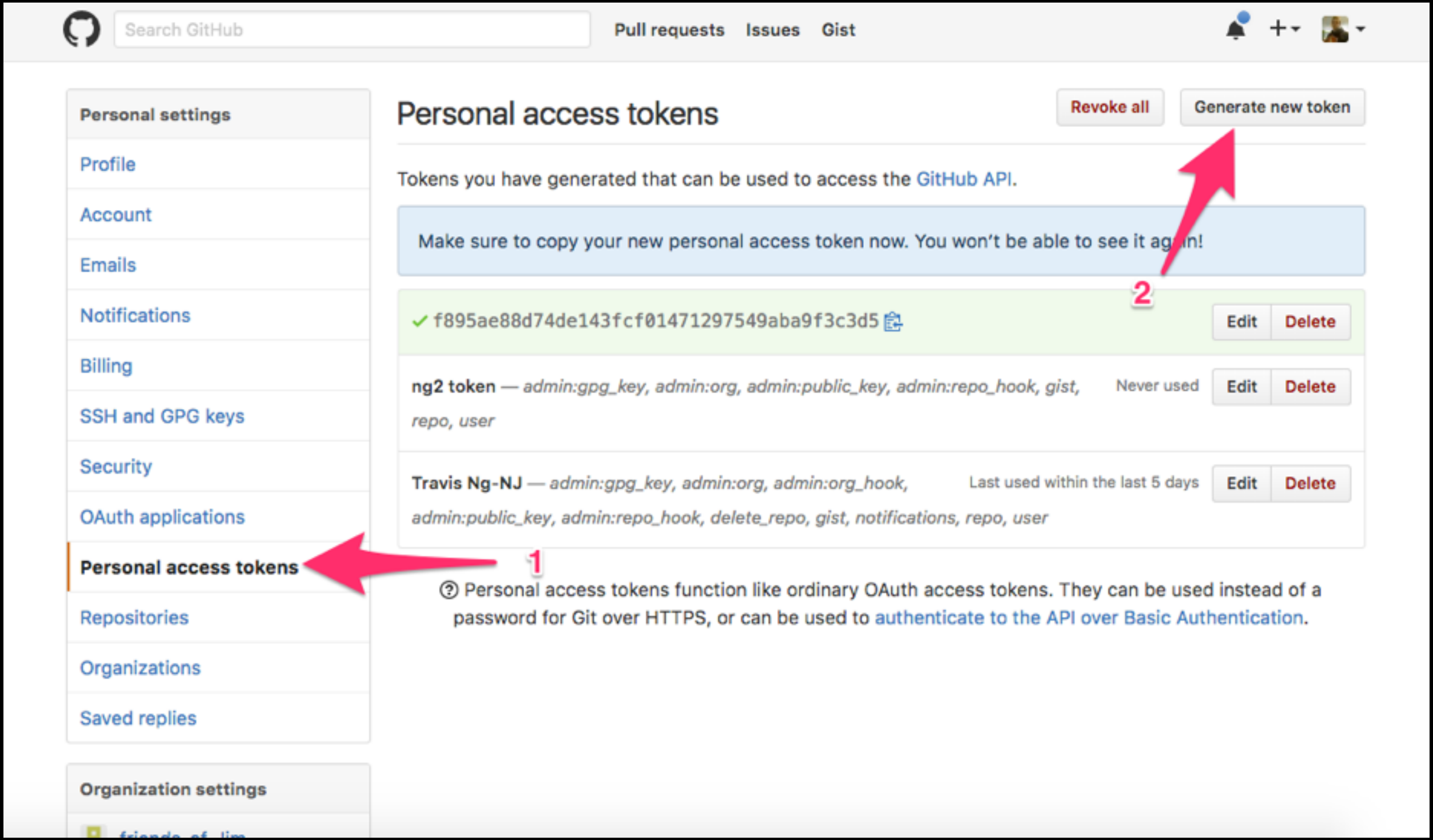
ng deploy gh:pages

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

        ng github pages deploy
```

Creating a Github Token

It’s easy!



Personal settings

- Profile
- Account
- Emails
- Notifications
- Billing
- SSH and GPG keys
- Security
- OAuth applications
- **Personal access tokens**
- Repositories
- Organizations
- Saved replies

Organization settings

friends-of-jim

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 — Edit | Delete

ng2 token — *admin:gpg_key, admin:org, admin:public_key, admin:repo_hook, gist, repo, user* — Never used — Edit | Delete

Travis Ng-NJ — *admin:gpg_key, admin:org, admin:org_hook, admin:public_key, admin:repo_hook, delete_repo, gist, notifications, repo, user* — Last used within the last 5 days — Edit | Delete

ⓘ 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!

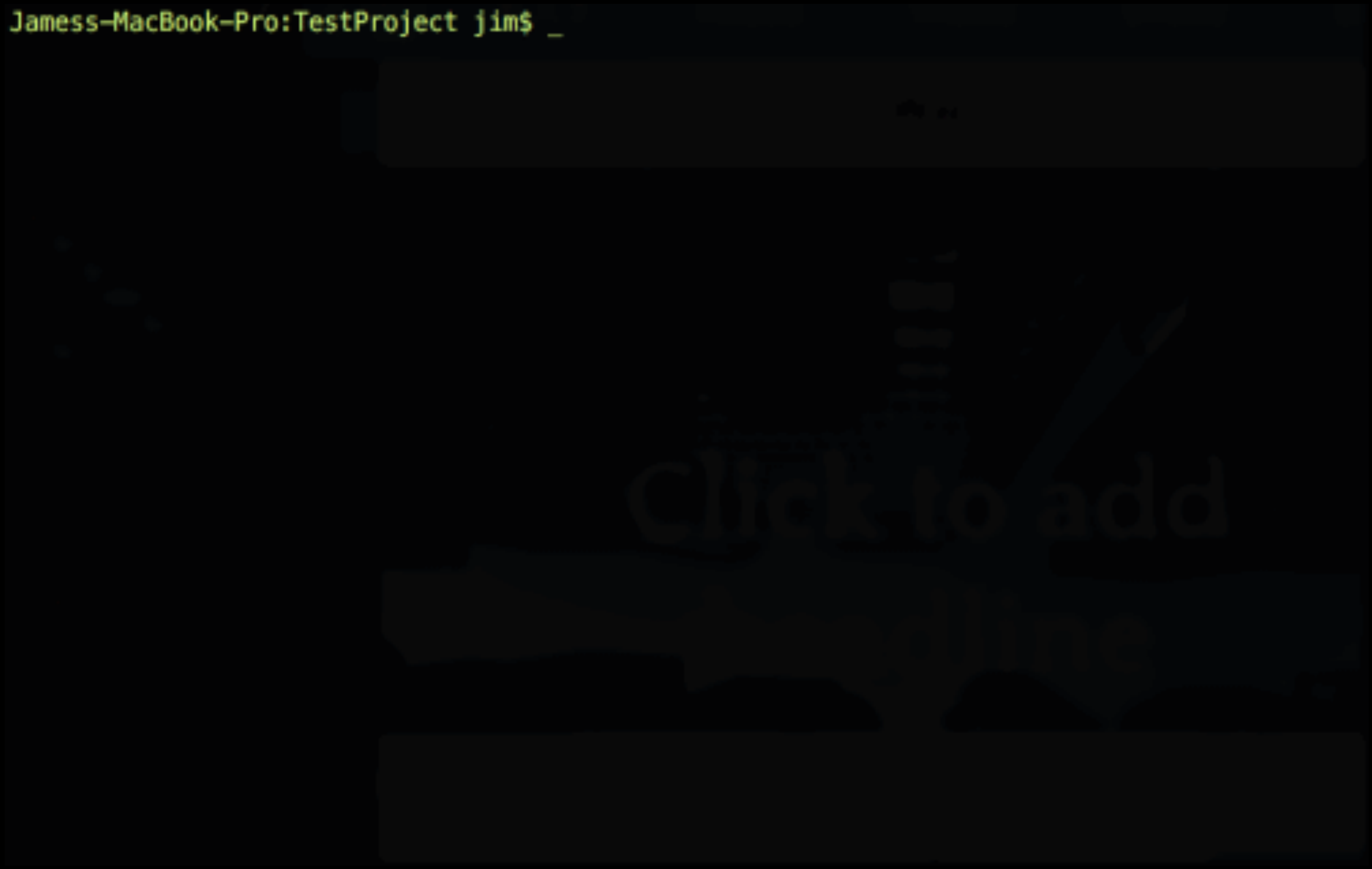
- Alias for the generate command is just the letter g.

- The generated component has its own directory, unless the --flat options is specified.

ng g component

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

ng g service

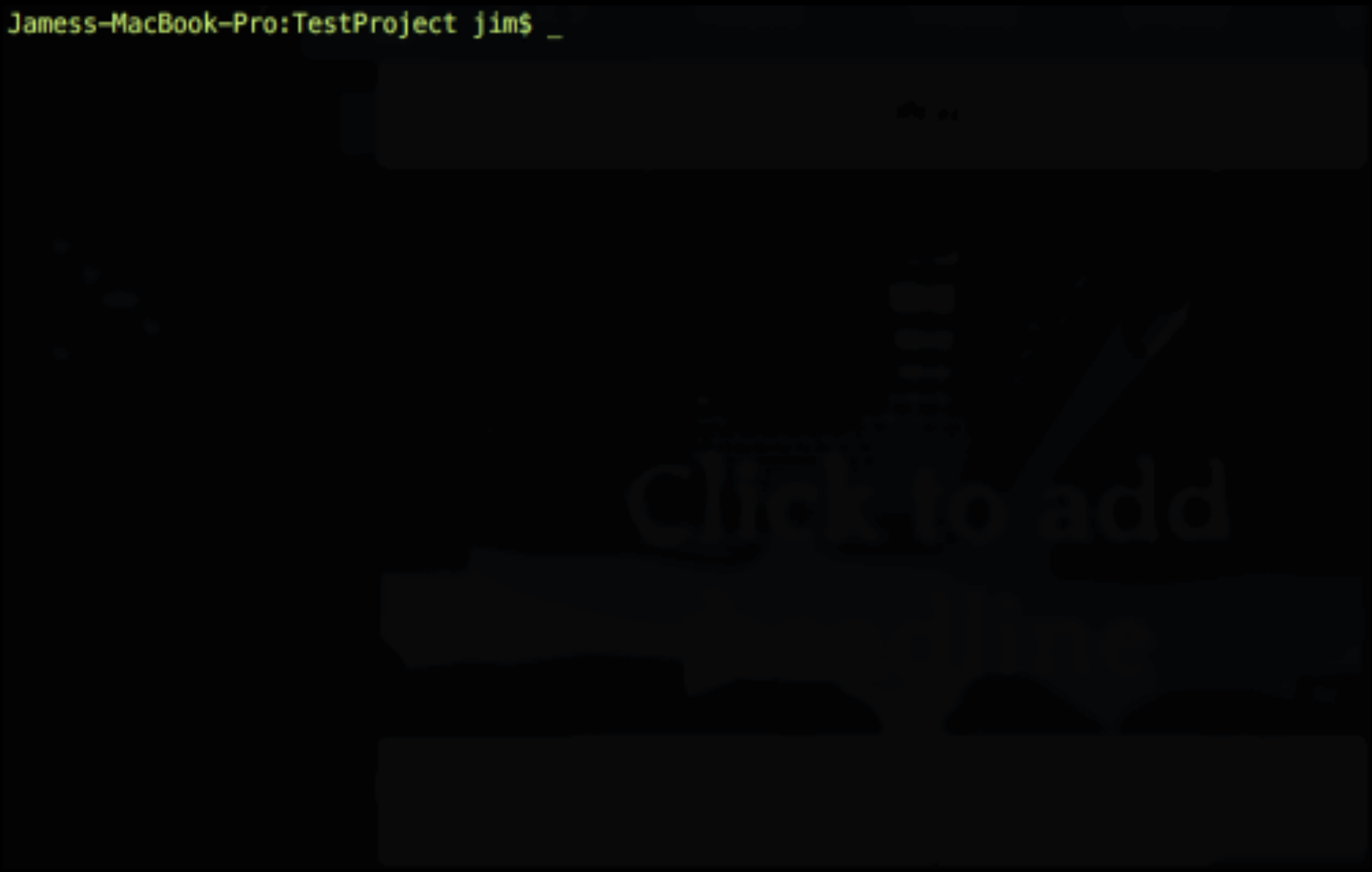


```
Jamess-MacBook-Pro:TestProject jim$ _
```

ng g pipe

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

ng g directive



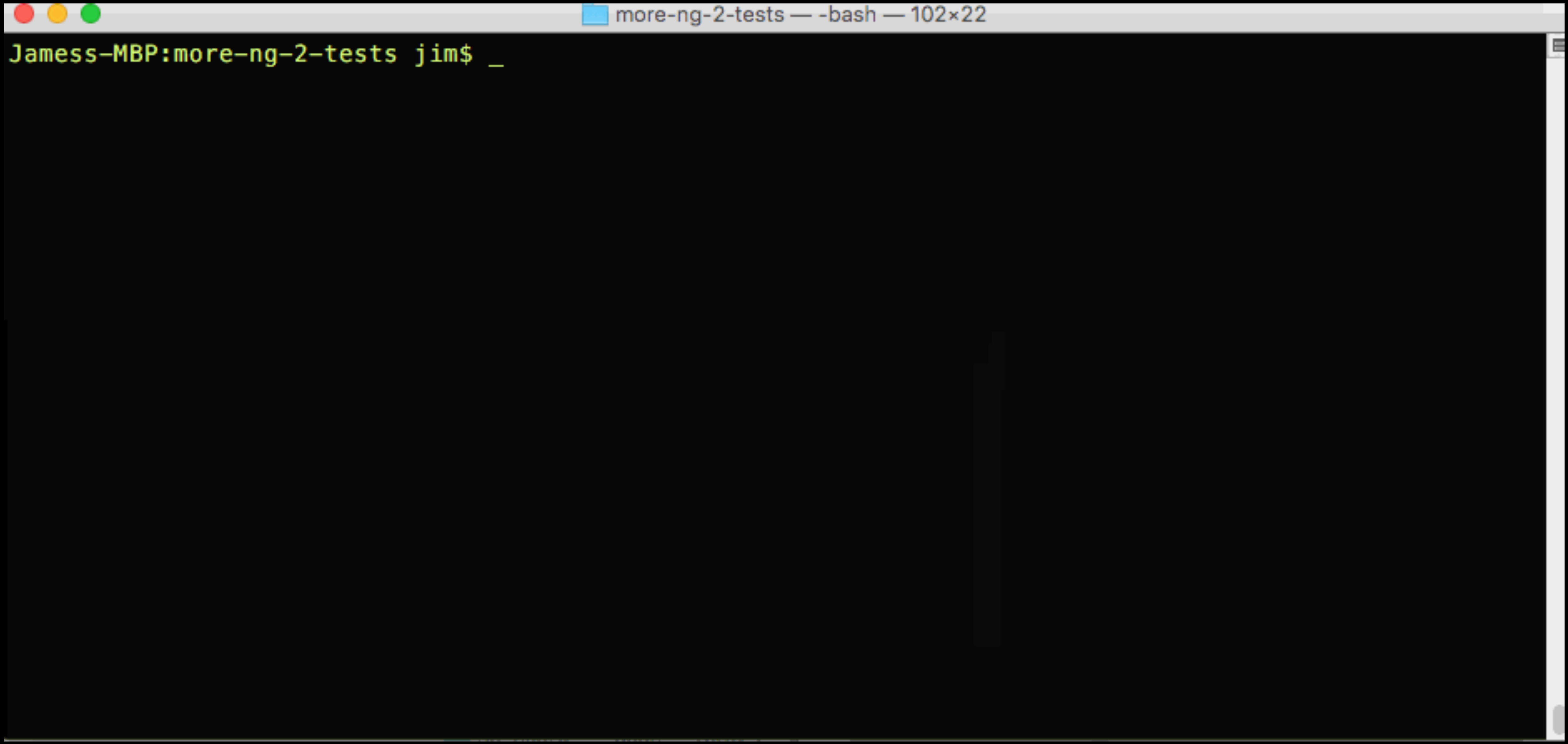
```
Jamess-MacBook-Pro:TestProject jim$ _
```

ng g route

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

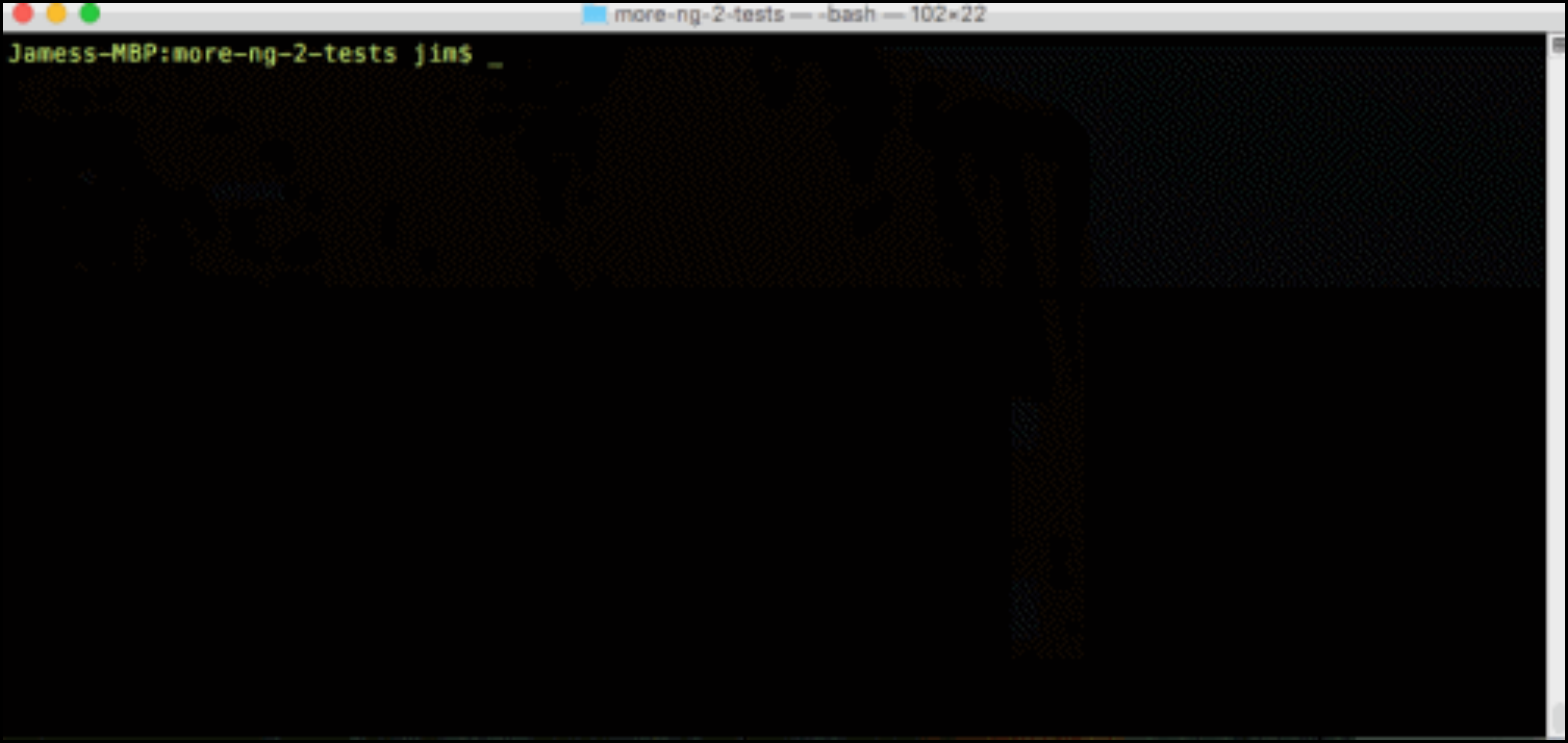
CLI Bonus Commands!

ng-lint



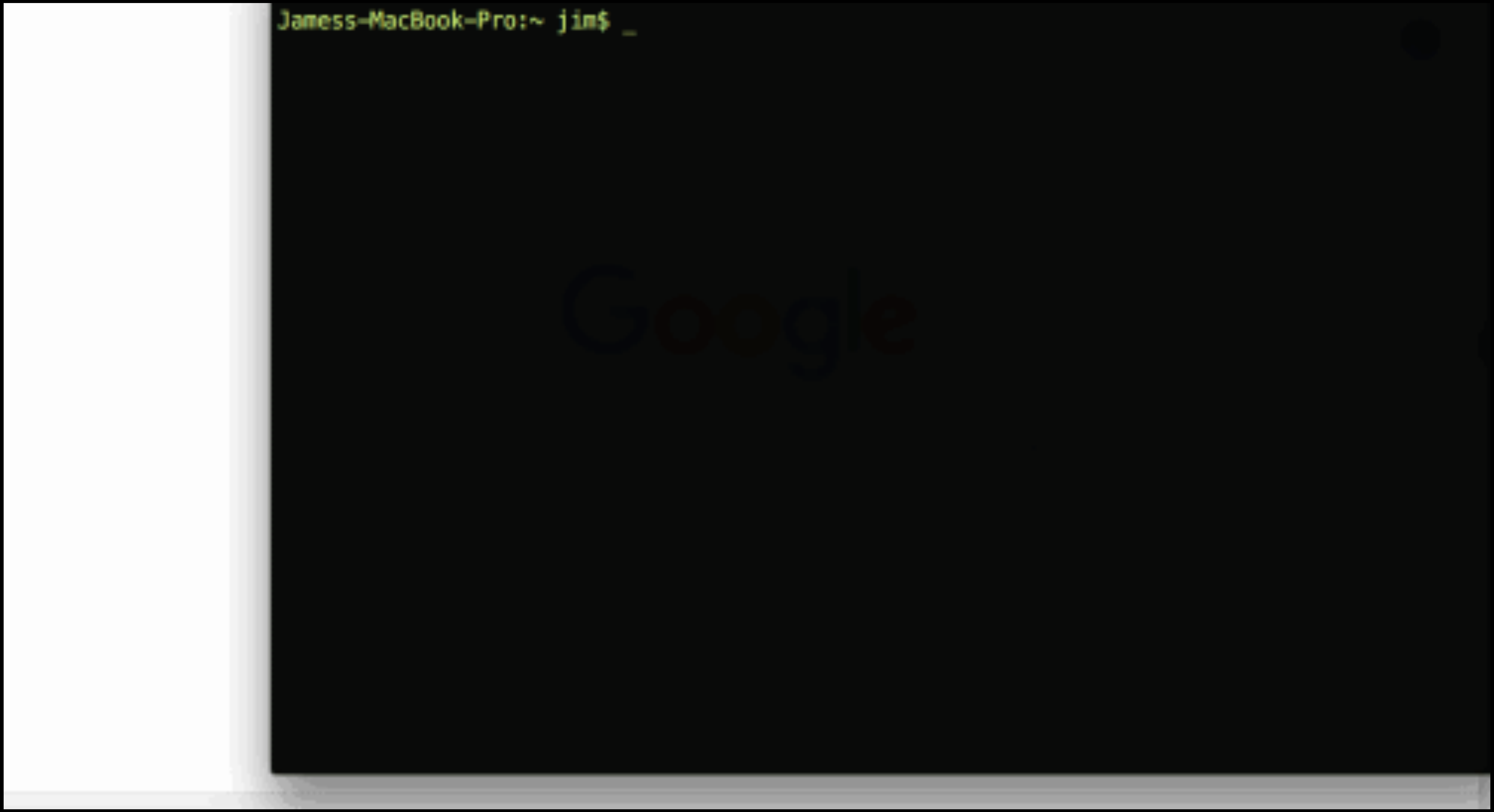
```
Jamess-MBP:more-ng-2-tests jim$ _
```

ng help



```
Jamess-MBP:more-ng-2-tests jim$ _
```

ng doc <keyword>



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

ng version

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

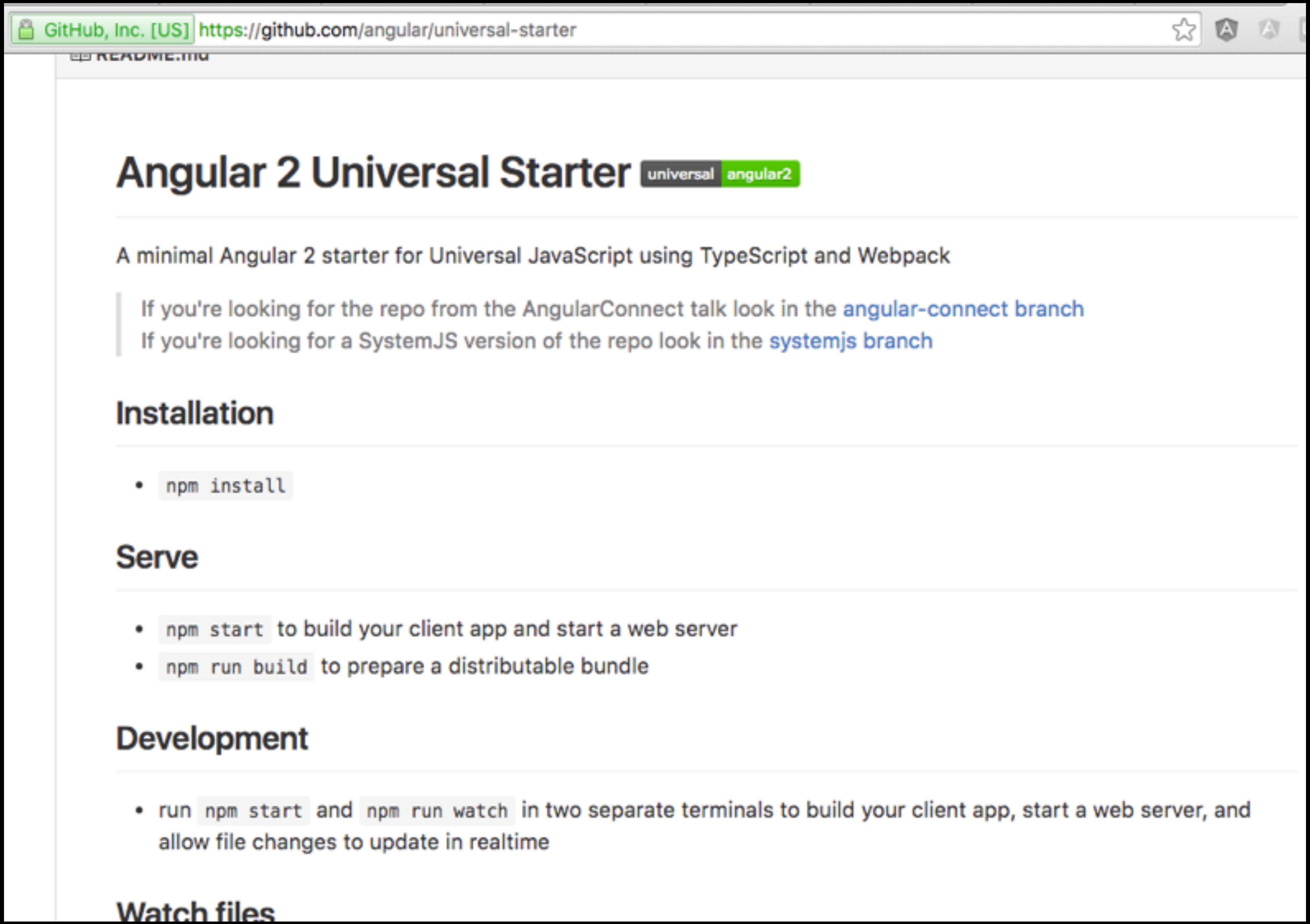
Things You Might Consider Adding to An Angular 2 Project

- 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



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

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

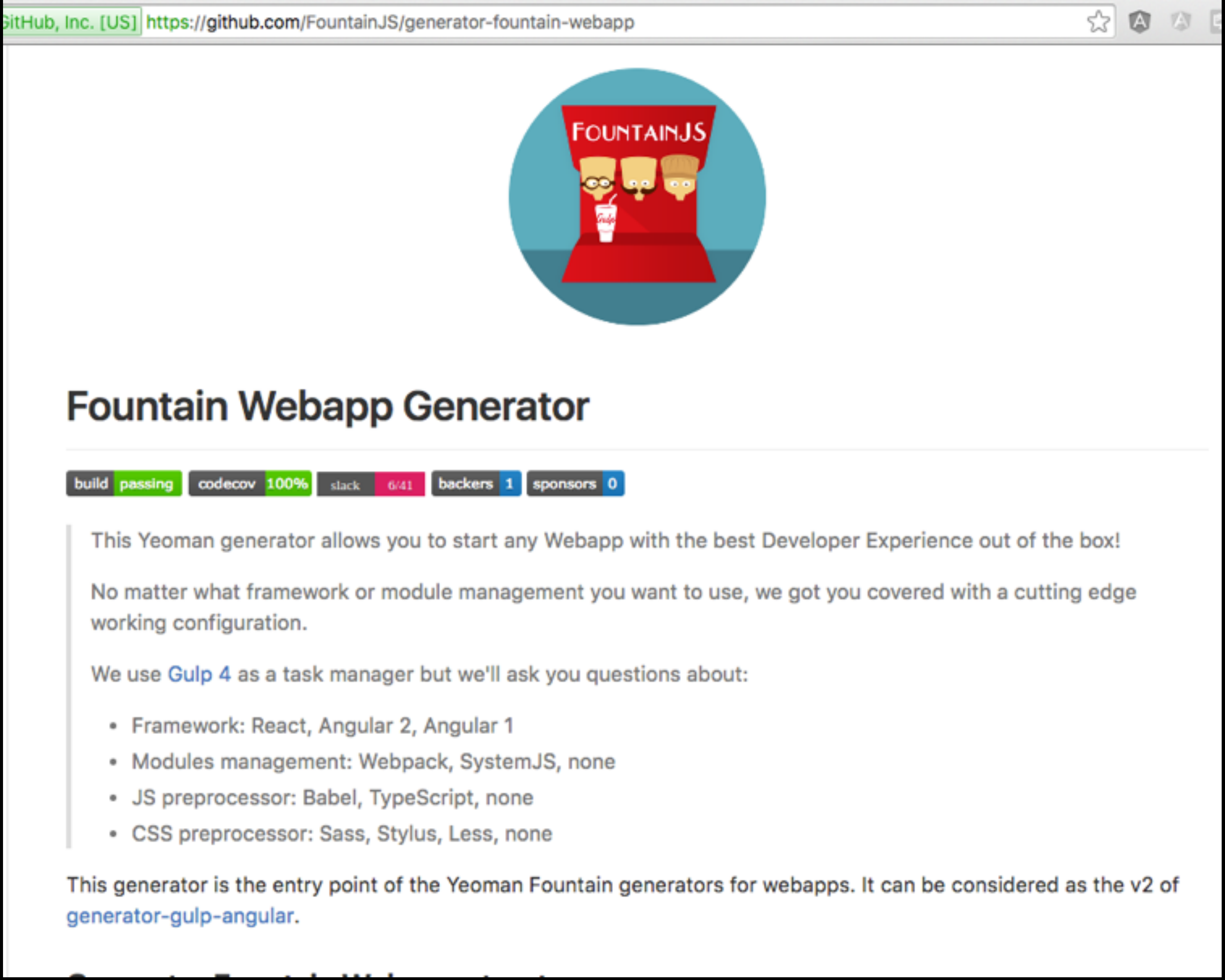
- `npm start` to build your client app and start a web server
- `npm run build` to prepare a distributable bundle

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
FOUNTAINJS
Gulp
build passing
codecov 100%
slack 6/41
backers 1
sponsors 0

Fountain Webapp Generator

> 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!