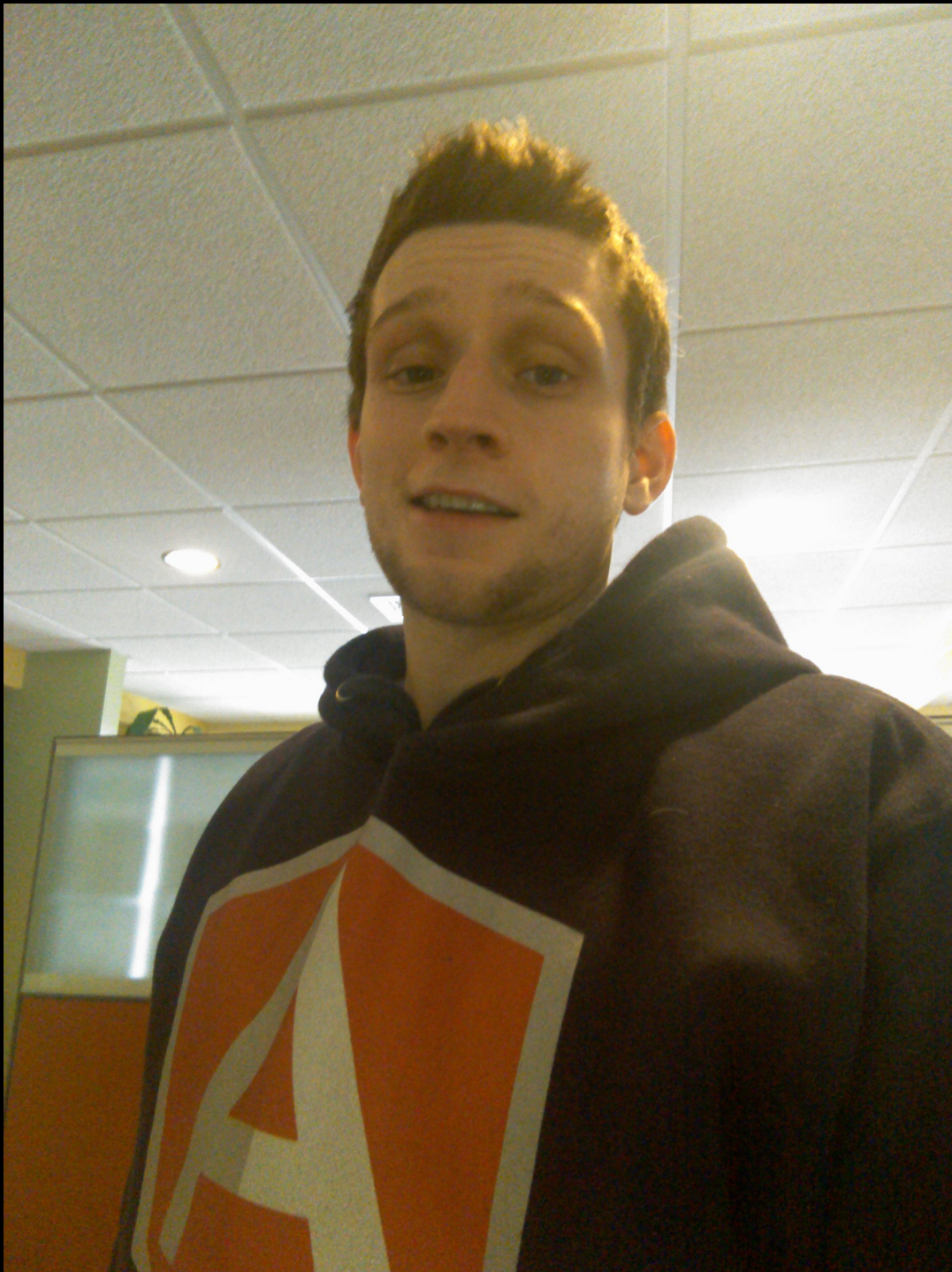


# Getting Started With The Angular 2 CLI

by Jim Lynch

July 2016



# Jim Lynch



Front-End Engineer  
at Altered Image



WebStorm  
Ambassador



@webWhizJim

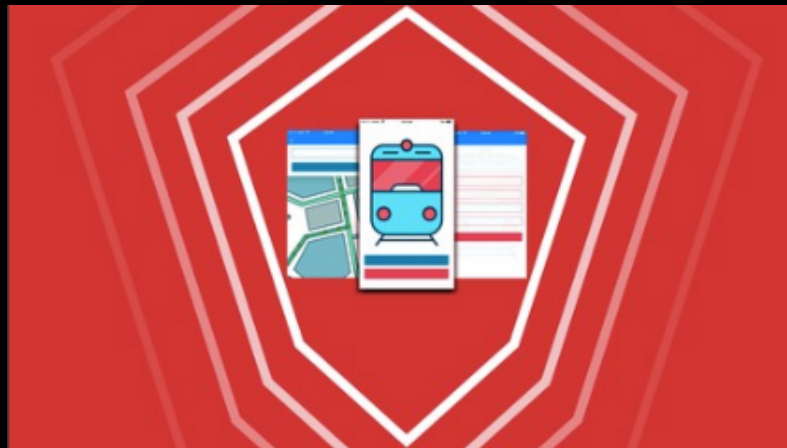
Slides available here:

<http://www.slideshare.net/JimLynch22/describes-full-of-its>

# 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

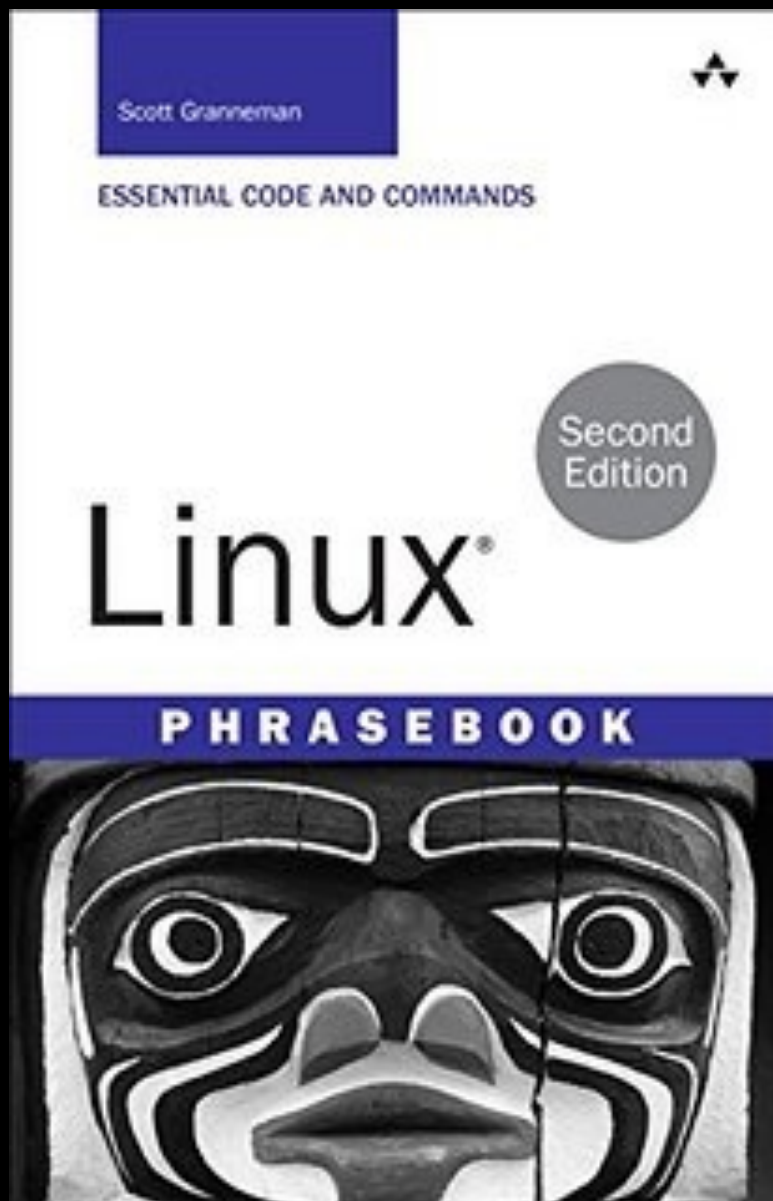
(5 minutes)

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

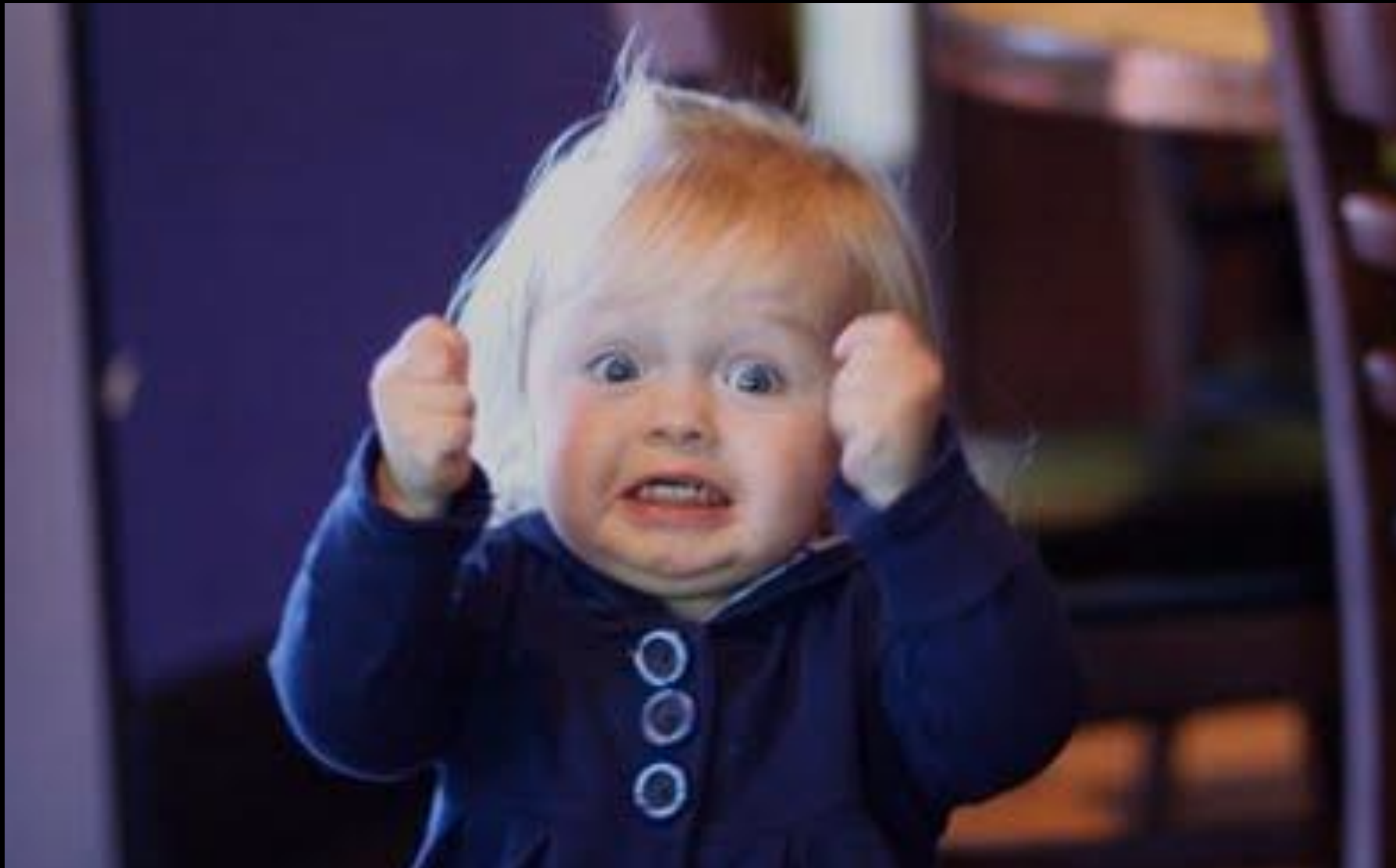
- No more “ng-“ directives! New syntax for binding directly to events instead.
- Namespaces CSS / Sass
- Simpler concept of Directives, No link functions in ng2!
- Nice router with power and flexibility of UI-Router
- Crazy fast with Shadow DOM under the hood.
- Projects are written in TypeScript (usually).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

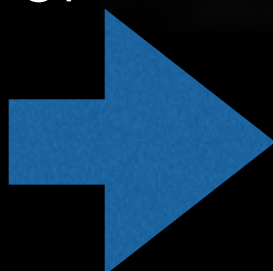
You don't have access to this file.

```
[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

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



# ng install

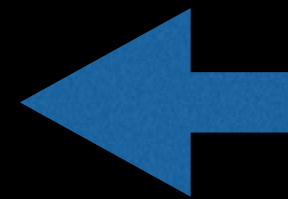
```
James-MacBook-Pro:yet-another-ng2-test jim$ _
```

# 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!



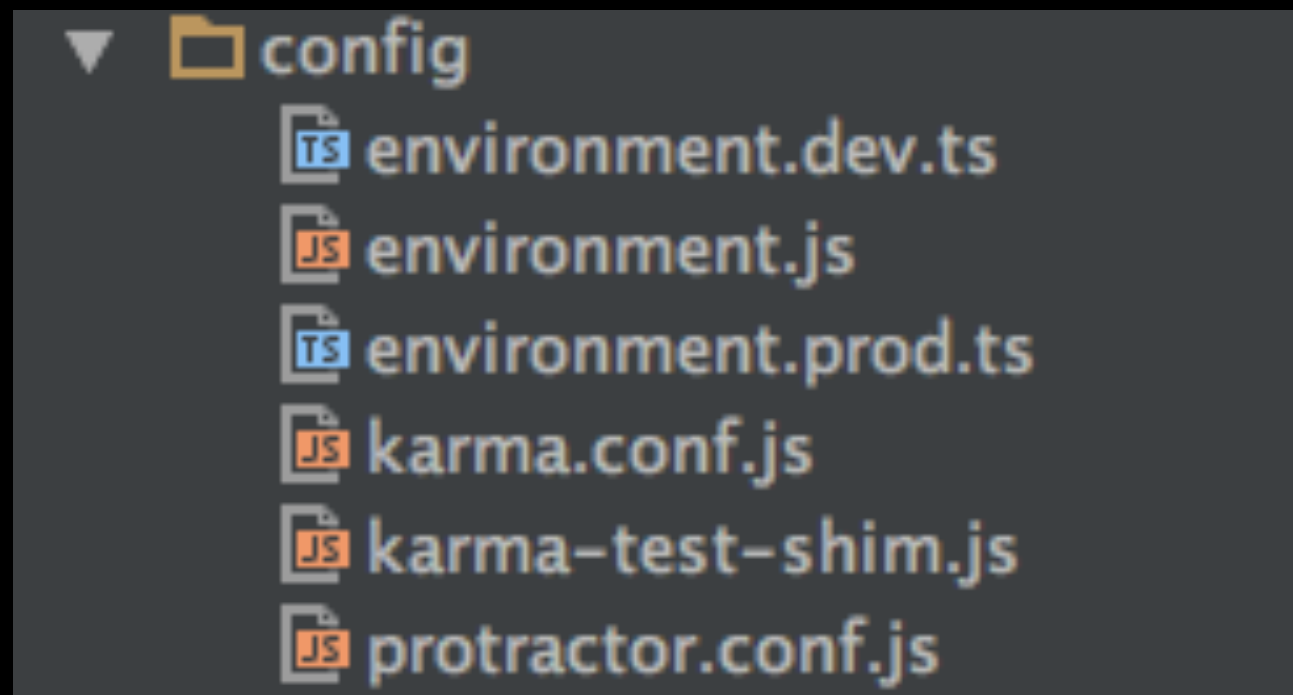
A Closer Look

a What Was Created

# Config

Environment files for setting *production* boolean environment variable.

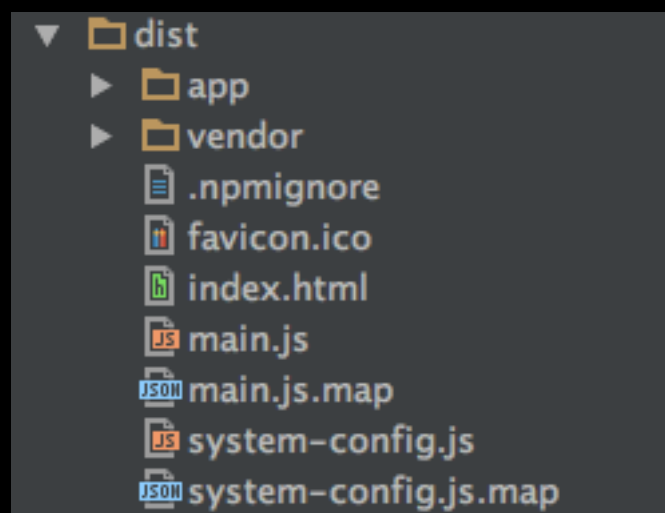
Configuration files for automated test runners.



# Dist

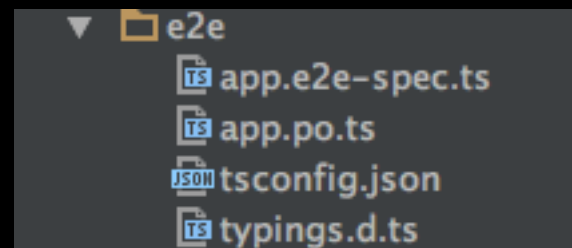
Folder that gets written to by build task

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



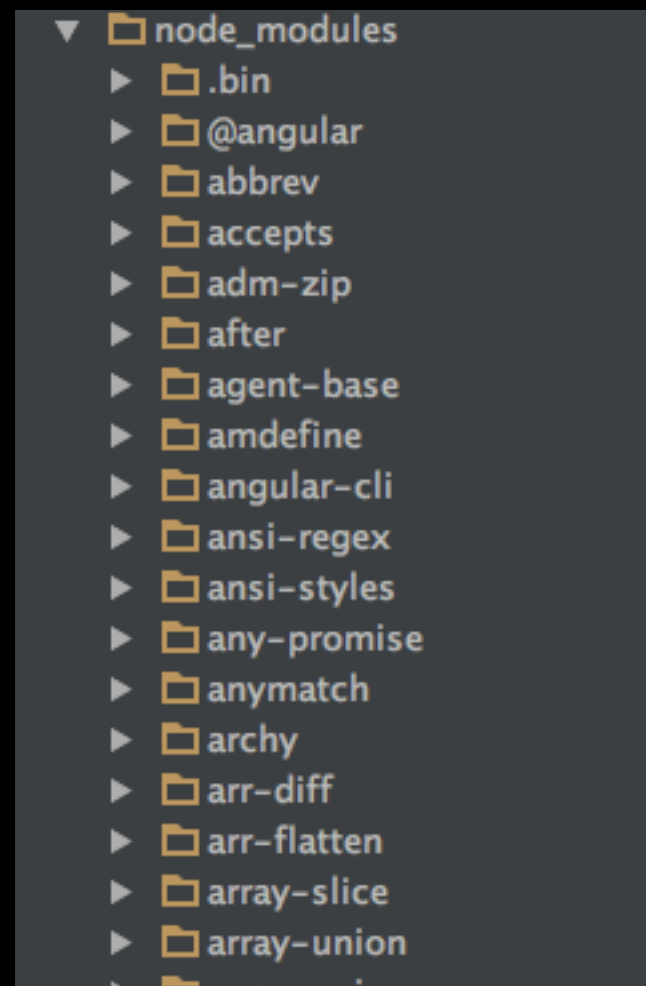
# e2e

Contains files for e2e and integration tests run by Protractor.



# node\_modules

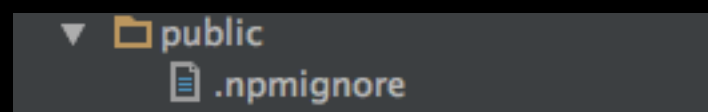
Contains all the npm libraries that are dependencies for your application.





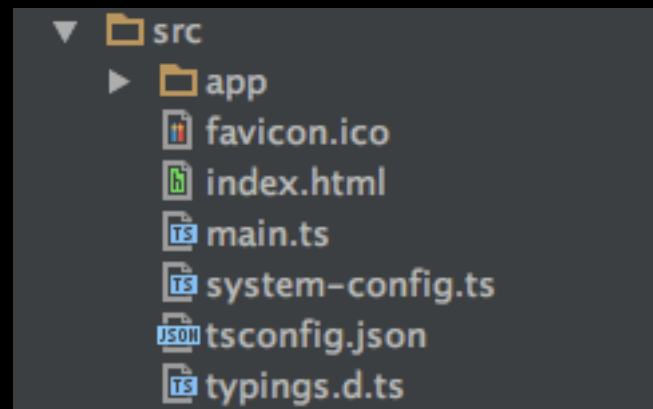
# public

Contains the .gitignore file.



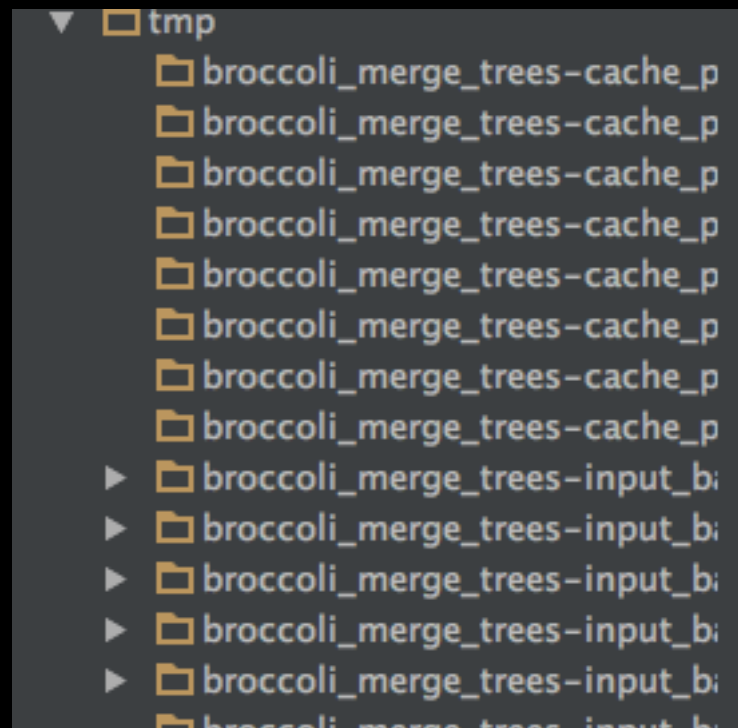
# src

Contains all of your source code!



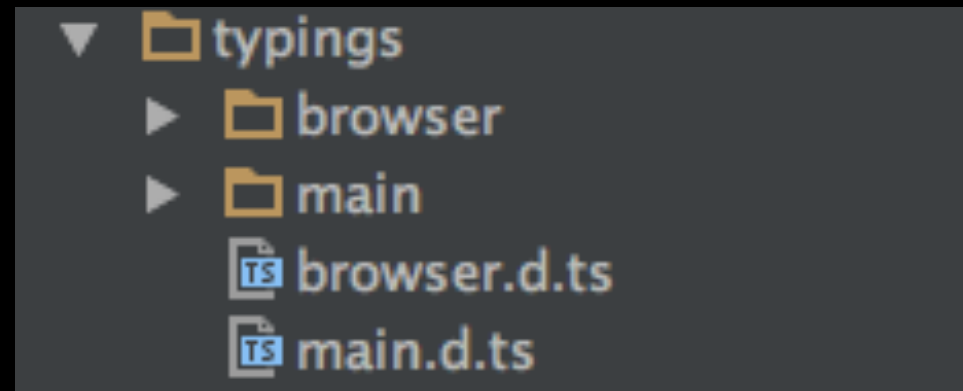
# tmp

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



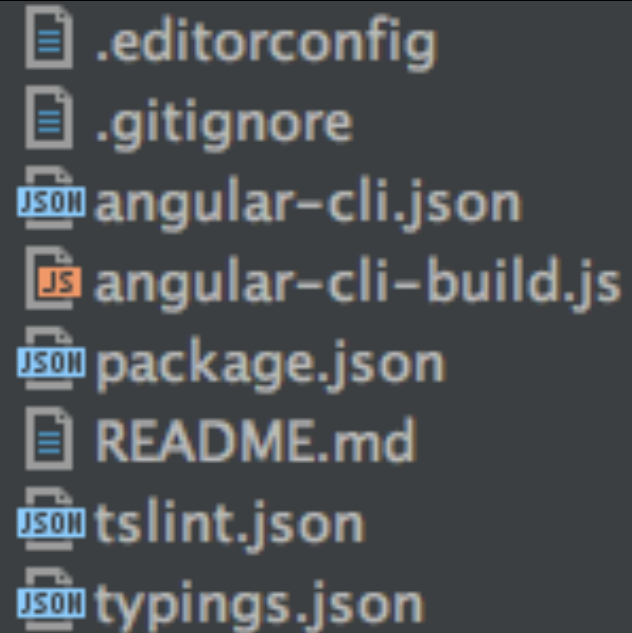
# typings

Contains some TypeScript 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

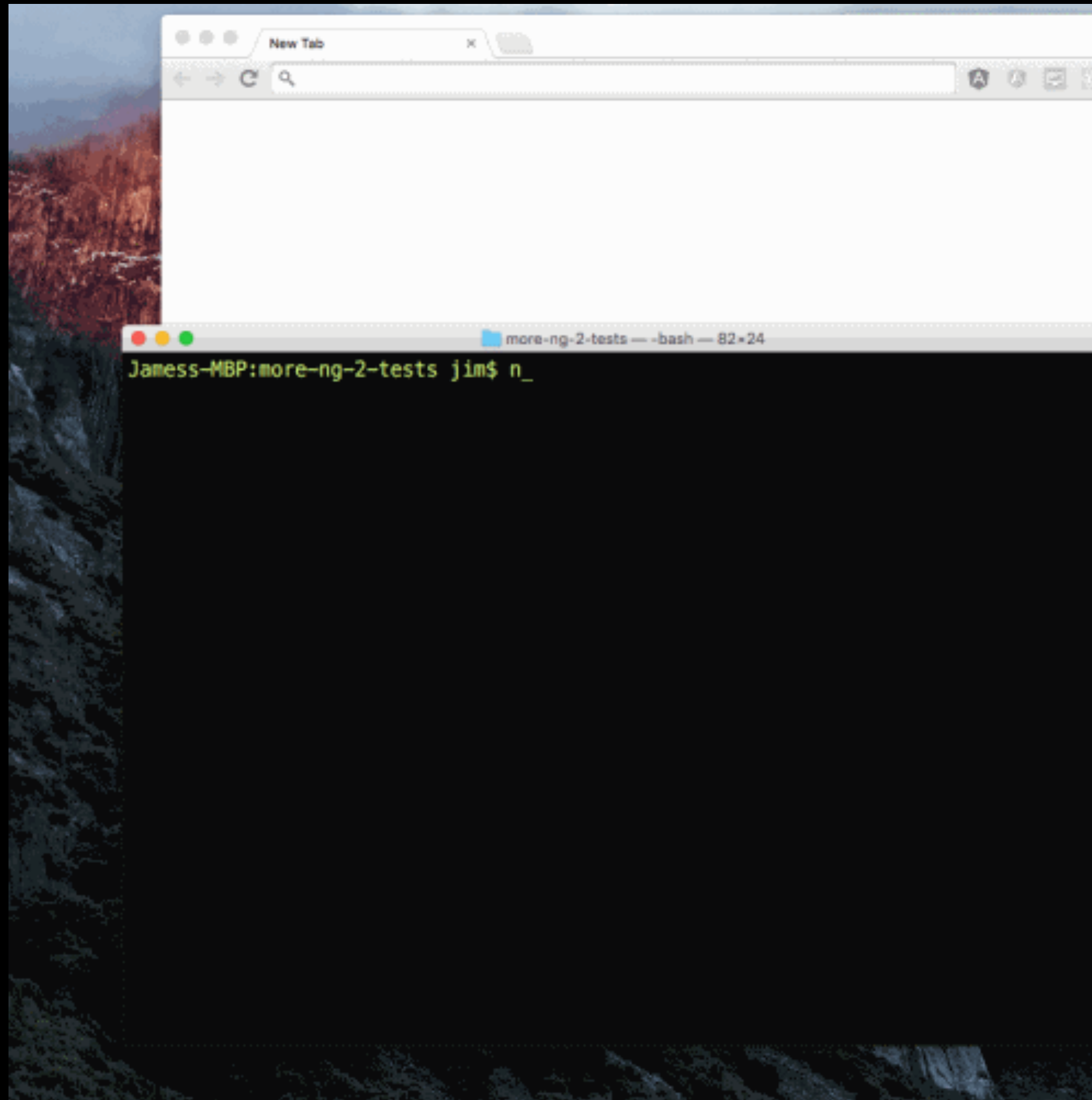
- ng serve

- ng test

- ng e2e

- ng build

# ng serve





# ng test

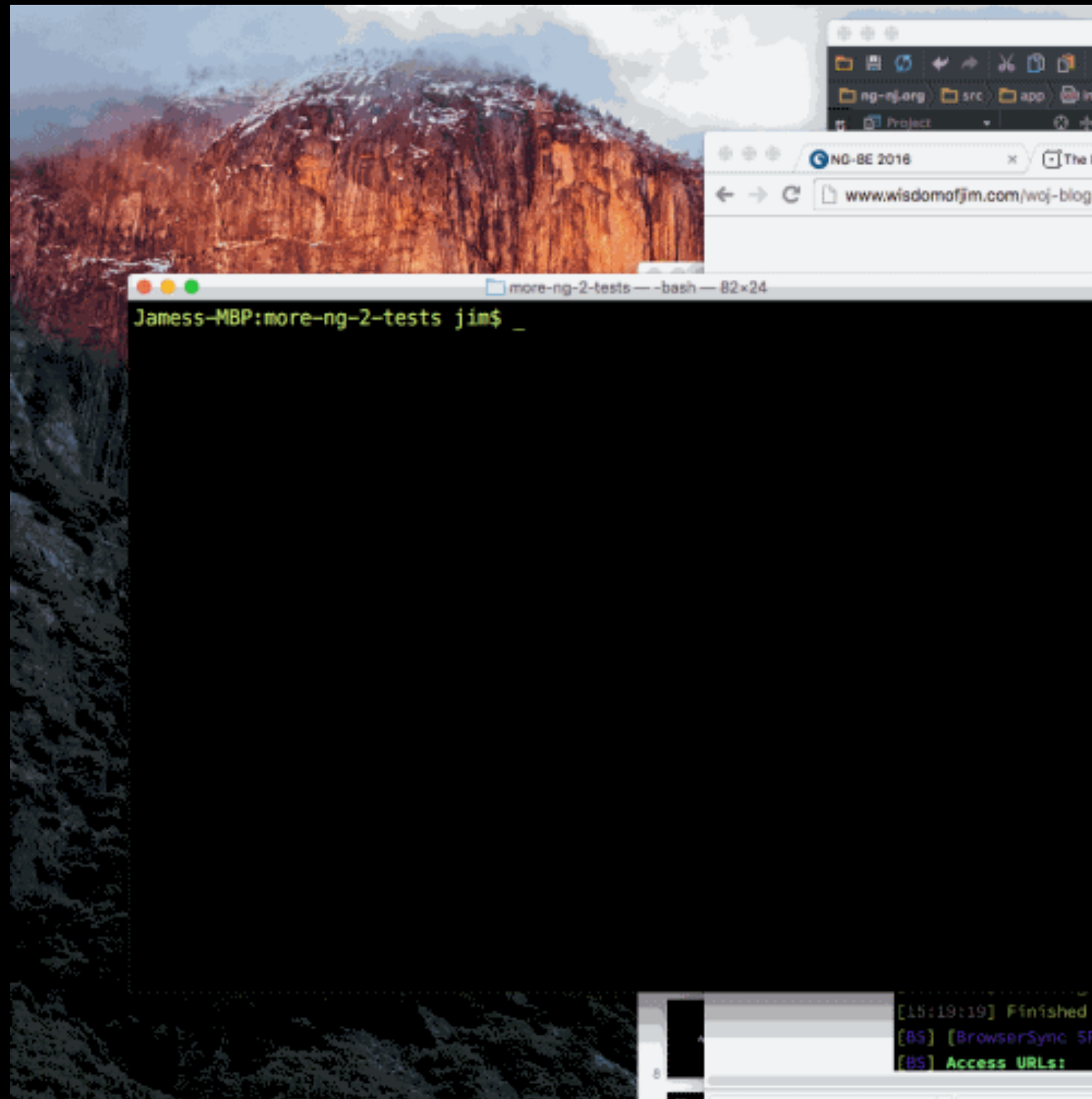
```
more-ng-2-tests — Google Chrome Helper • angular-cli TERM_PROGRAM=Apple_Terminal TERM=xterm-256color — 102x22

Slowest Trees                                     | Total
-----+-----
BroccoliTypeScriptCompiler                       | 6022ms
vendor                                             | 5430ms
BroccoliMergeTrees                               | 2349ms
HandlebarReplace                                 | 763ms

Slowest Trees (cumulative)                       | Total (avg)
-----+-----
BroccoliTypeScriptCompiler (1)                   | 6022ms
vendor (1)                                        | 5430ms
BroccoliMergeTrees (2)                           | 2381ms (1190 ms)
HandlebarReplace (1)                             | 763ms

17 07 2016 12:08:40.568:WARN [karma]: No captured browser, open http://localhost:9876/
17 07 2016 12:08:40.609:INFO [karma]: Karma v0.13.22 server started at http://localhost:9876/
17 07 2016 12:08:40.674:INFO [launcher]: Starting browser Chrome
17 07 2016 12:08:52.821:INFO [Chrome 51.0.2704 (Mac OS X 10.11.4)]: Connected on socket /#6j_U-WjCA0cx
gJ-0AAAA with id 14526776
Chrome 51.0.2704 (Mac OS X 10.11.4): Executed 2 of 2 SUCCESS (0.089 secs / 0.075 secs)
█
```

# 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!' (highlighted with a red arrow and a red '2'). Below this is a table of existing tokens. The first token is a green bar containing a long alphanumeric string followed by 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 row has 'Edit' and 'Delete' buttons. A red arrow points from the 'Personal access tokens' sidebar link to the 'Generate new token' button.

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

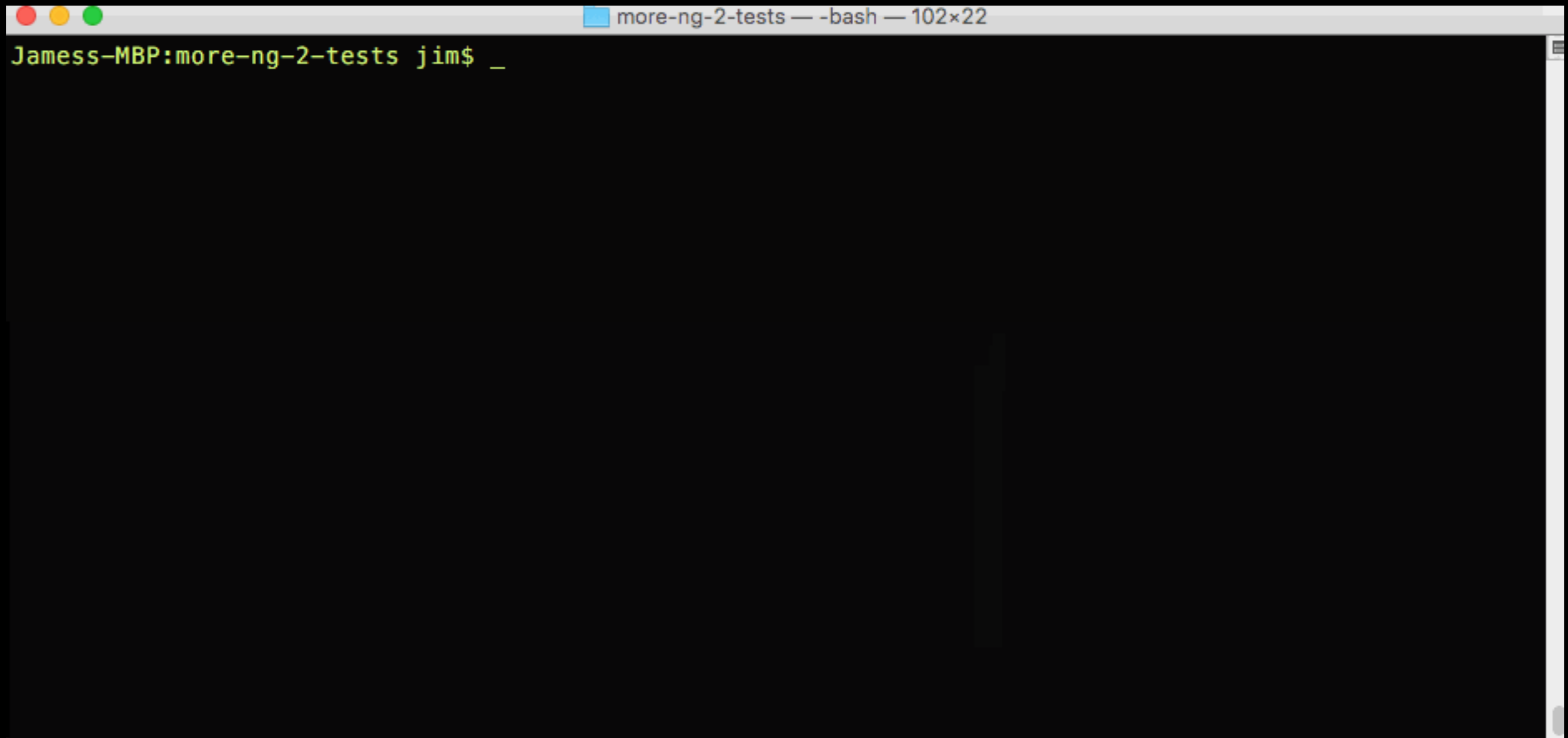
# ng g route

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

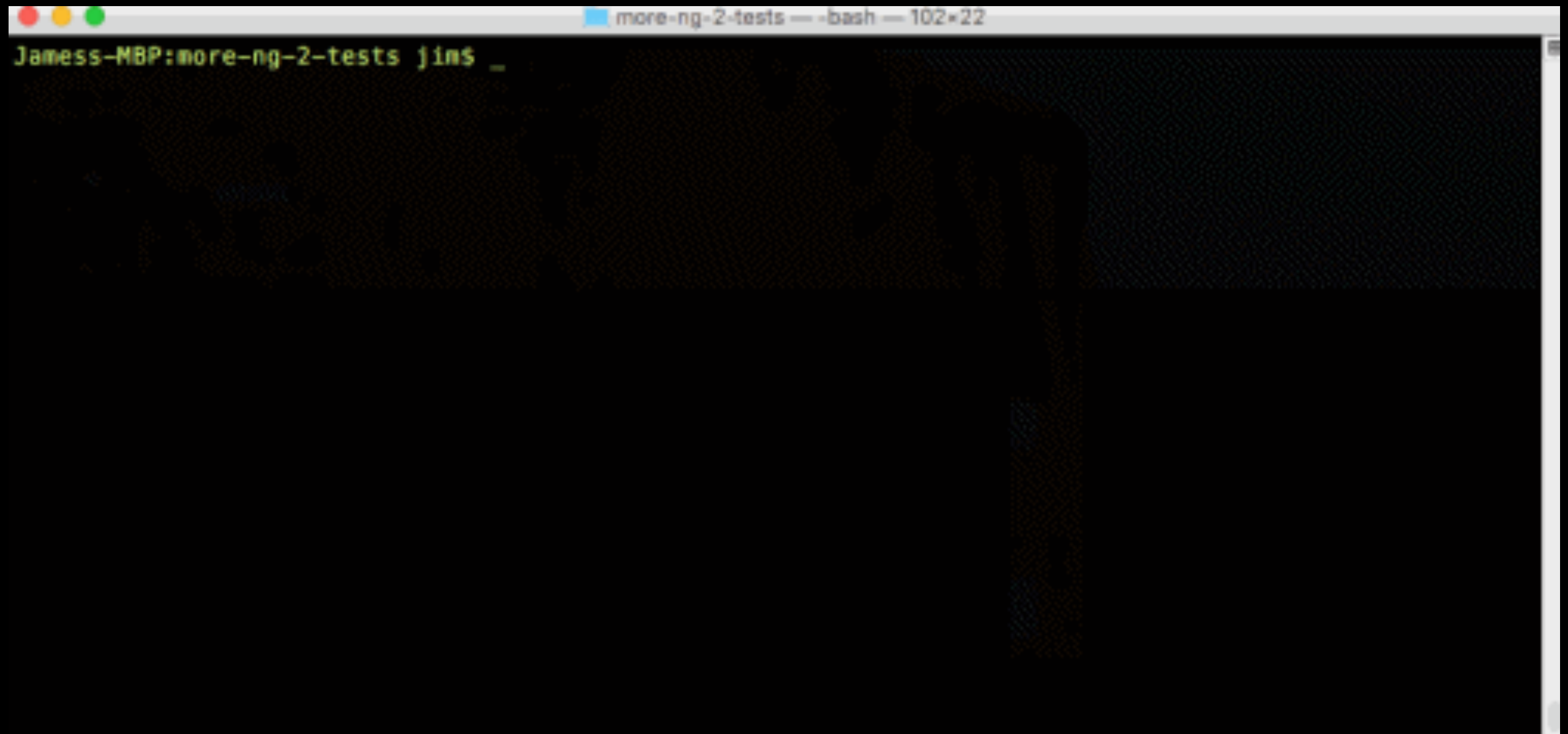


# CLI Bonus Commands!

# 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 an application.
e2e      Run end-to-end tests using Protractor.
extract-i18n Extract internationalization data from an application.
help     Display this help message.
lint     Run linting on the source code.
new      Create a new Angular project.
serve    Run the application in development mode.
test     Run unit tests.
update   Update an application to the latest version of Angular.
version  Display the version of Angular CLI.
```

# ng doc <keyword>



A terminal window on a Mac. The title bar reads 'James-MacBook-Pro:~ jin\$'. The prompt is 'jin\$'. The user has entered 'ng doc' and the output is a Google search result for 'ng doc', showing the 'AngularJS' website as the top result.

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

Google



# ng version

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



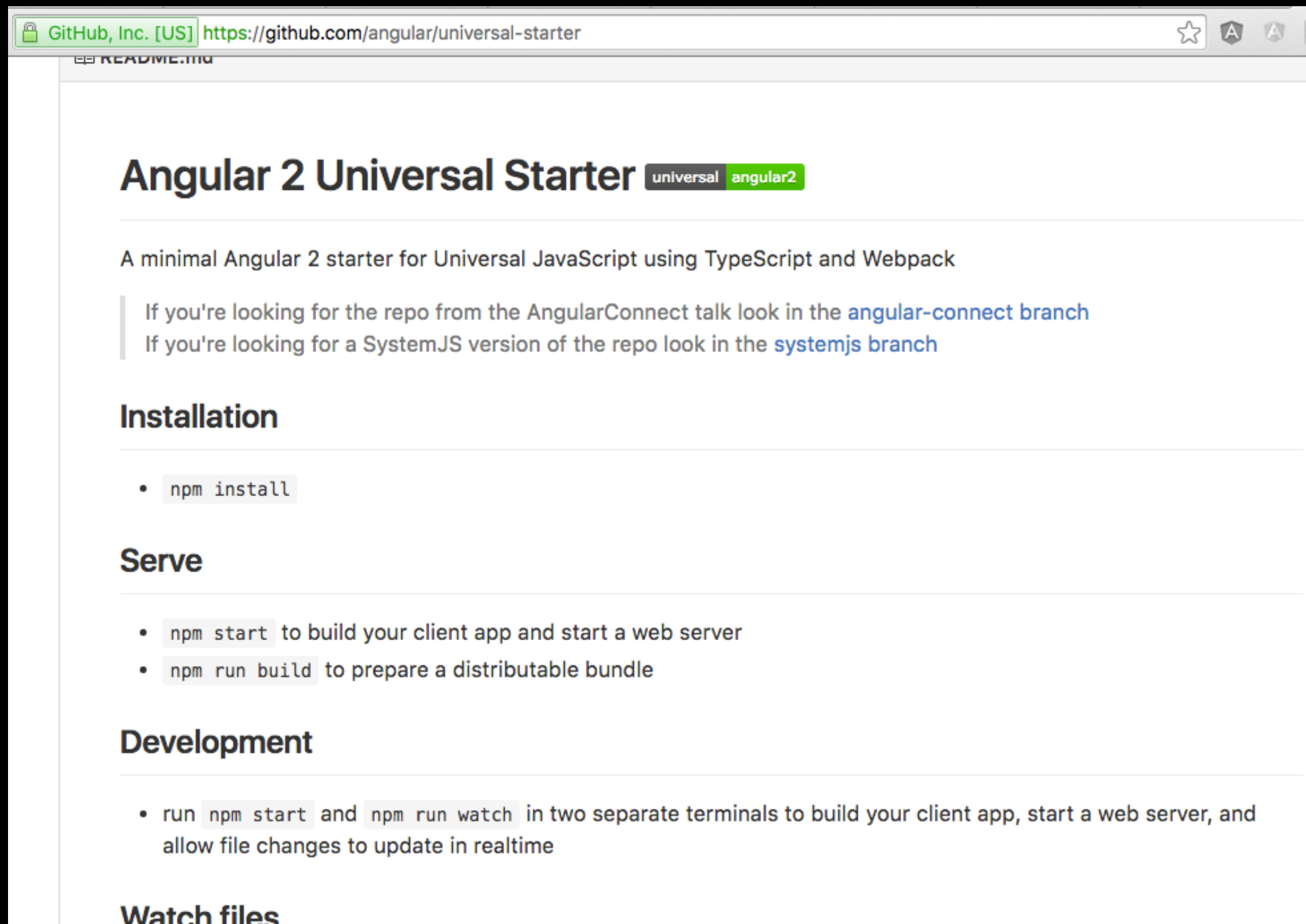
# Things You Might Consider Adding to An Angular 2 Project

- 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:

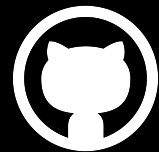
- Framework: React, Angular 2, Angular 1
- Modules management: Webpack, SystemJS, none
- JS preprocessor: Babel, TypeScript, none
- CSS preprocessor: Sass, Stylus, Less, none

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](https://twitter.com/webWhizJim)



[github.com/JimTheMan](https://github.com/JimTheMan)



[jim@ng-nj.com](mailto:jim@ng-nj.com)



[www.wisdomofjim.com](http://www.wisdomofjim.com)

Slides available here:

[http://www.slideshare.net/  
JimLynch22/describes-full-of-its](http://www.slideshare.net/JimLynch22/describes-full-of-its)

Thanks!