Simplifying Angular project management with Angular CLI

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In the beginning...

```
1   <!doctype html>
2   <html ng-app>
3     <head>
4       <script src="libs/angularjs/angular.min.js"></script>
5     </head>
6     <body>
7       ...
8     </body>
9   </html>
```

...nowadays...

Angular 2 isn't one script include like Angular 1.x

Angular 2 is a set of npm packages...

...and a lot of processing:

- Transpiling (translating TypeScript or ES6 into ES5)
- Building (minimization, optimization, source mapping)
- Packaging (creating module bundles for dynamic loading)
- Running (live reloading, environment definition)
- Testing (unit testing, e2e testing)

A lot of tools...

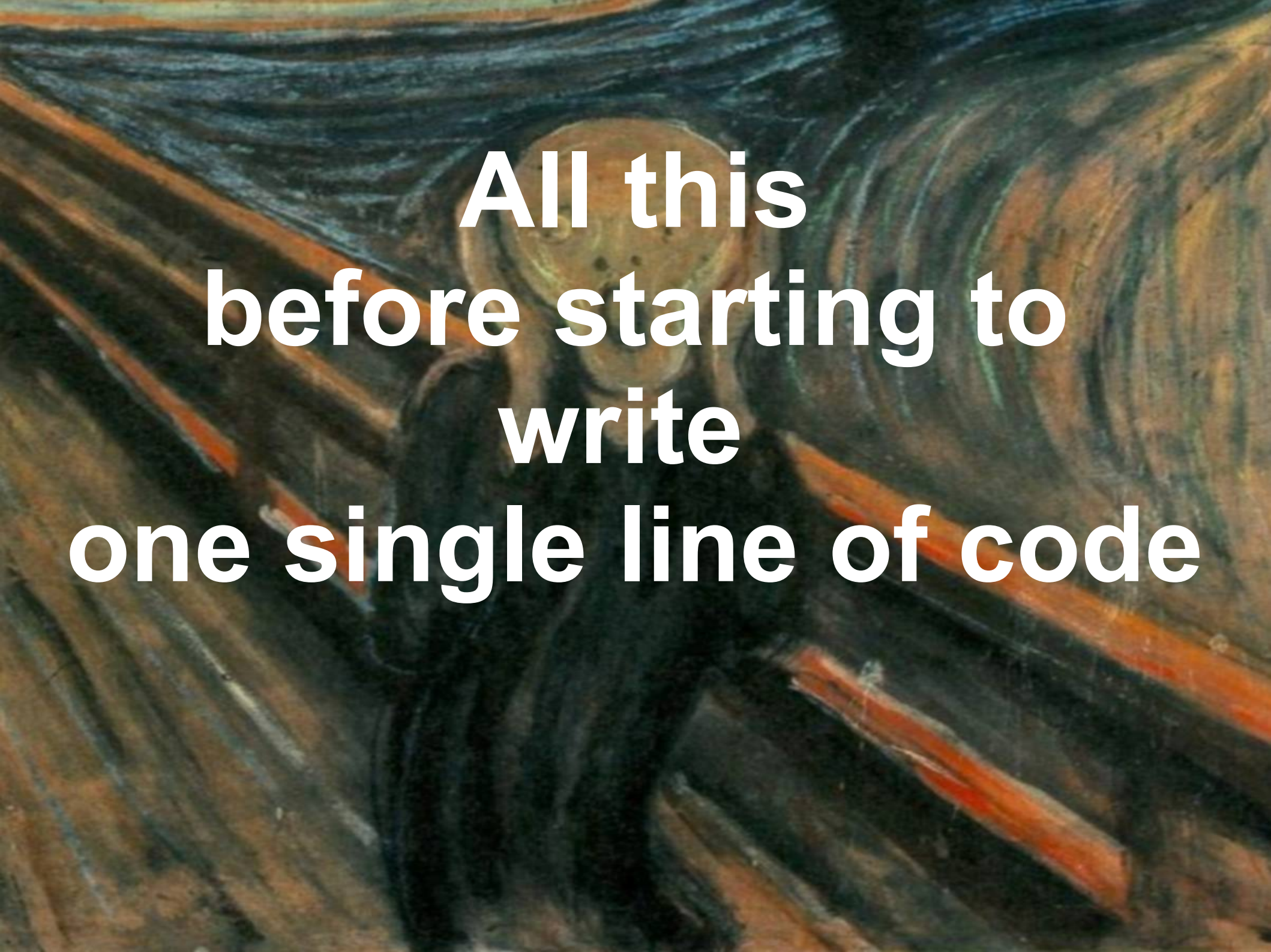
A lot of processing require a lot of tools:

- Package managers (npm)
- Transpilers (TypeScript, Babel)
- Module bundlers (Webpack, SystemJS)
- Task runners (Gulp, Grunt)
- Scaffolding tools (Yeoman)
- Test runners and frameworks (Karma, Jasmine)

...and a lot of configuration

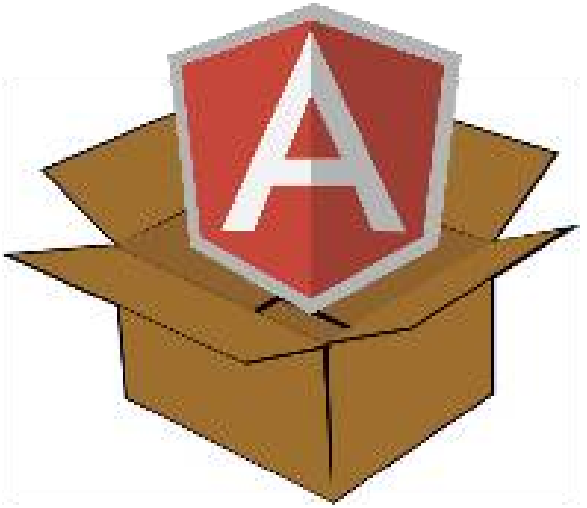
Setting up our development environment:

- package.json
- tsconfig.json
- typings.json
- systemjs.config.js or webpack.config.js
- tslint.json
- protractor.config.js
- karma.conf.js


All this
before starting to
write
one single line of code

Welcome Angular CLI

A Command Line Interface for managing Angular 2 projects



Welcome Angular CLI

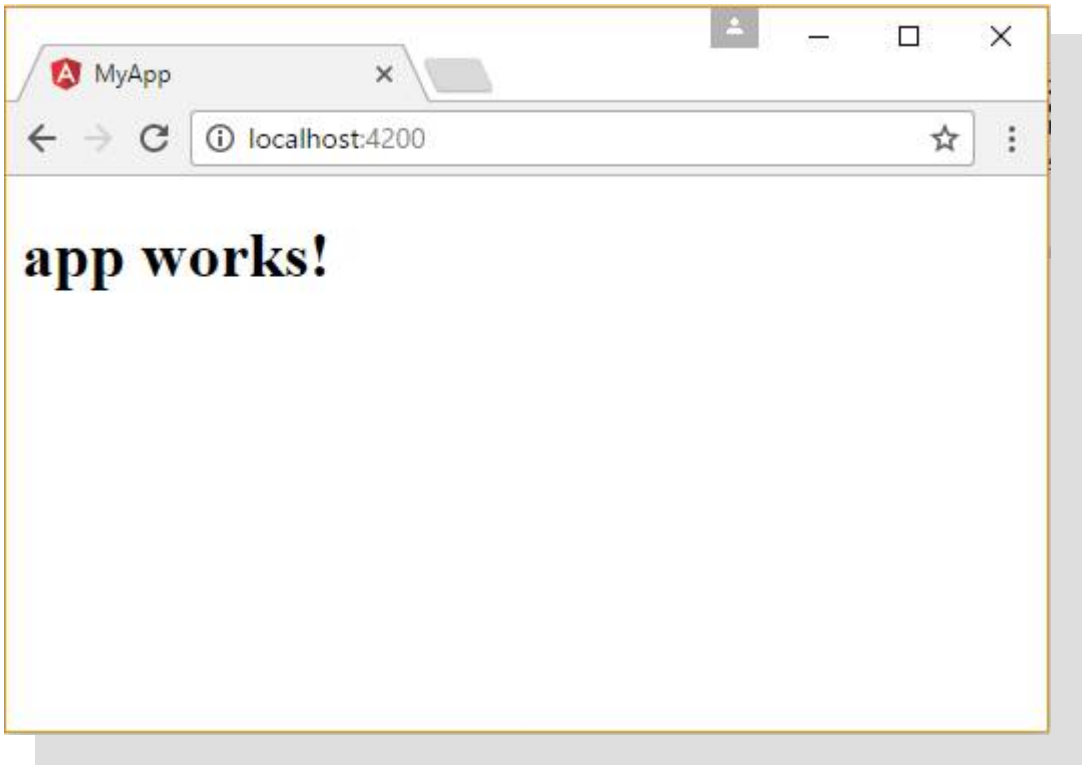
A Command Line Interface for managing Angular 2 projects

- Easy setup of a new Angular application
- It allows to scaffolding code
- It standardises an application structure following the community convention
- It builds applications for development and production environments
- It runs a development server and give us live reload
- It runs unit tests and e2e tests

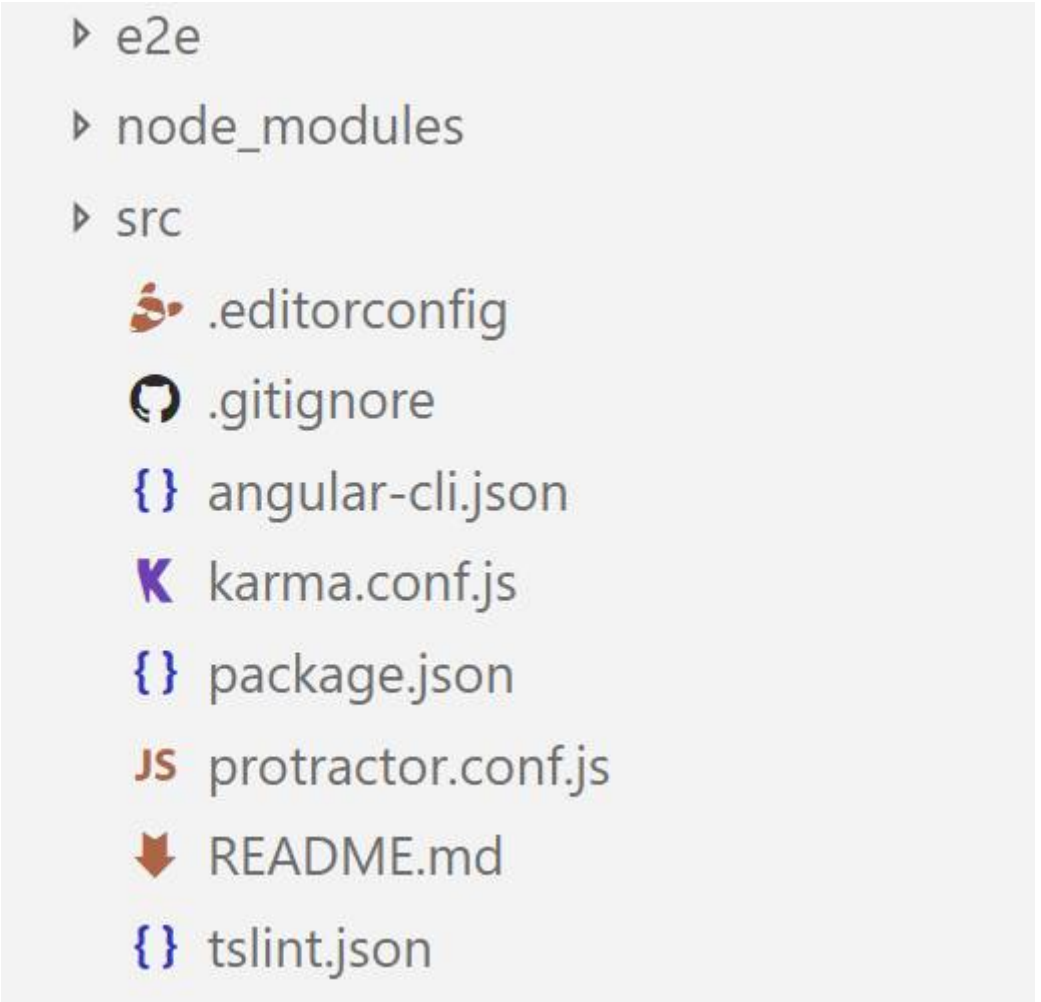
Very Quick Start

```
> npm install -g angular-cli

> ng new myApp

> cd myApp

> ng serve
```

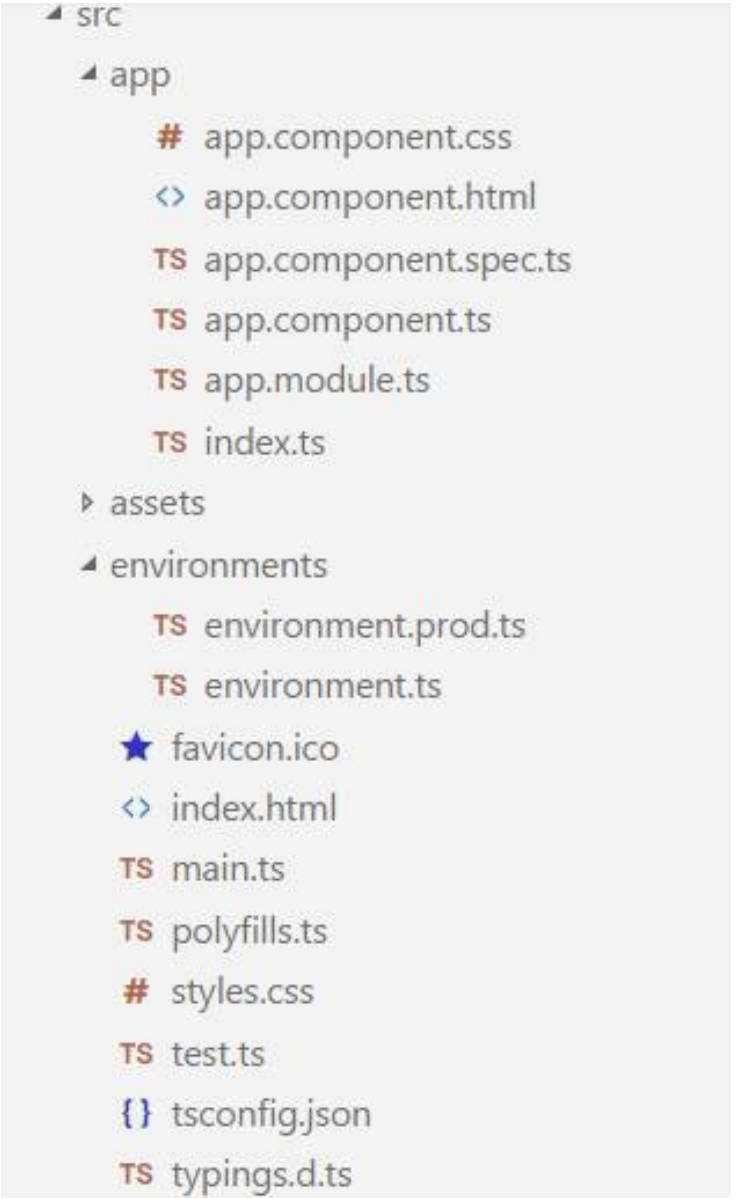
Hello Angular!



The project's structure

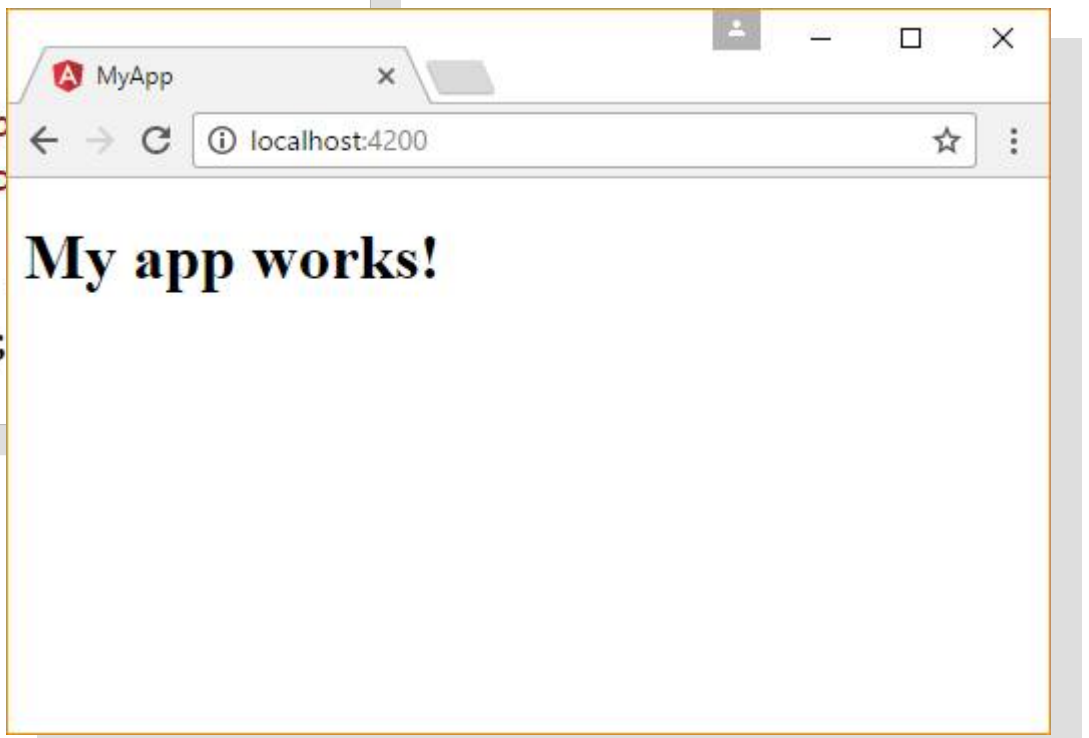


The project's structure



Live reloading

```
1   import { Component } from '@angular/core';
2
3   @Component({
4     selector: 'app-root',
5     templateUrl: './app.comp
6     styleUrls: ['./app.compo
7   })
8   export class AppComponent
9     title = 'My app works!';
10  }
```



Generating code

ng generate

Component	ng generate component myComponent
Directive	ng generate directive myDirective
Pipe	ng generate pipe myPipe
Service	ng generate service myService
Class	ng generate class myClass
Interface	ng generate interface myInterface
Enum	ng generate enum myEnum
Module	ng generate module myModule

Generating components

```
> ng generate component myComponent
```

Generating components

my-component.component.ts

```
1   import { Component, OnInit } from '@angular/core';
2
3   @Component({
4     selector: 'app-my-component',
5     templateUrl: './my-component.component.html',
6     styleUrls: ['./my-component.component.css']
7   })
8   export class MyComponentComponent implements OnInit {
9
10    constructor() { }
11
12    ngOnInit() {
13    }
14
15  }
```

Generating components

my-component.component.html

```
1    <p>
2      my-component works!
3    </p>
```

Generating components

my-component.component.spec.ts

```
1   /* tslint:disable:no-unused-variable */
2   import { async, ComponentFixture, TestBed } from '@angular/core/testing';
3   import { By } from '@angular/platform-browser';
4   import { DebugElement } from '@angular/core';
5
6   import { MyComponentComponent } from './my-component.component';
7
8   describe('MyComponentComponent', () => {
9     let component: MyComponentComponent;
10    let fixture: ComponentFixture<MyComponentComponent>;
11
12    beforeEach(async(() => {
13      TestBed.configureTestingModule({
14        declarations: [ MyComponentComponent ]
15      })
16      .compileComponents();
17    }));
18
19    beforeEach(() => {
20      fixture = TestBed.createComponent(MyComponentComponent);
21      component = fixture.componentInstance;
22      fixture.detectChanges();
23    });
24
25    it('should create', () => {
26      expect(component).toBeTruthy();
27    });
28  });
```

Do I have control?

Third Party Libraries

Angular 2 Modules

```
> npm install @ng-bootstrap/ng-boostrap
```

```
1   import {NgbModule} from '@ng-bootstrap/ng-boostrap';
2   import { AppComponent } from './app.component';
3
4   @NgModule({
5   declarations: [AppComponent, ...],
6   imports: [NgbModule.forRoot(), ...],
7   bootstrap: [AppComponent]
8   })
9   export class AppModule { }
```

Third Party Libraries

Standard npm packages

```
> npm install loadsh -save
> npm install @types/loadsh -save
```

```
1    import * as _ from 'loadsh';
```

Third Party Libraries

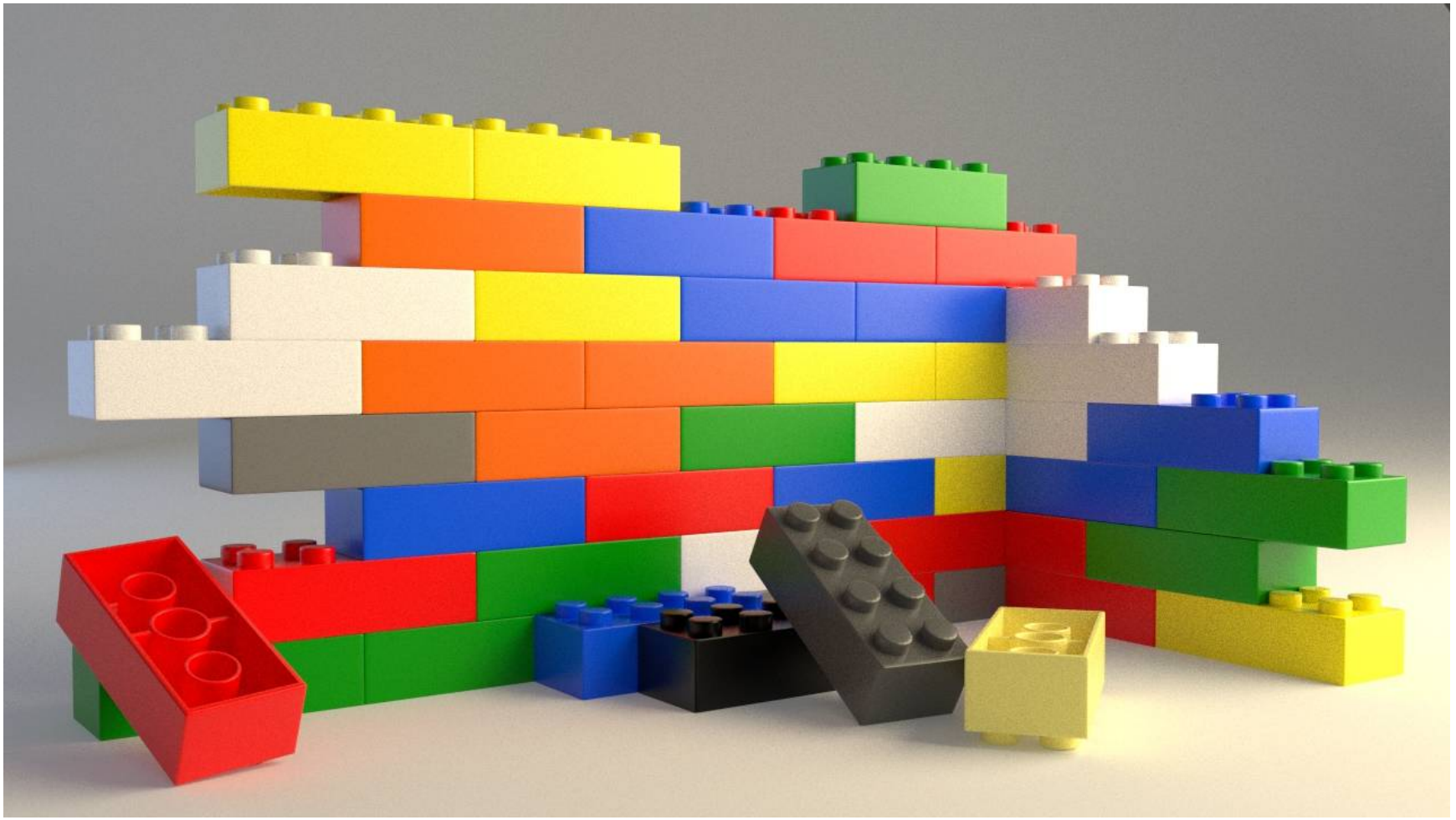
Global Library Installation

```
> npm install bootstrap@next
```

angular-cli.json

```
1   {...
2   "scripts": [
3     "../node_modules/bootstrap/dist/js/bootstrap.js"
4   ],
5   "styles": [
6     "../node_modules/bootstrap/dist/css/bootstrap.css",
7     "styles.css"
8   ],
9   ...}
```

Building



Building

Targets

Target	Processing
development	bundling, sourcemaps
production	bundling, minification, uglification, tree-shaking

The result of a build is stored in /dist folder

Building

Targets

Development	Production
ng build	
ng build --target=development	ng build --target=production
ng build --dev	ng build --prod

Building

Environments

angular-cli.json

```
1     {
2       ...
3           "environments": {
4           "source": "environments/environment.ts",
5           "dev": "environments/environment.ts",
6           "prod": "environments/environment.prod.ts"
7         }
8       ...
9     }
```

Building

Environments

environment.staging.ts

```
1    export const environment = {
2      production: false,
3      envName: 'staging'
4    };
```

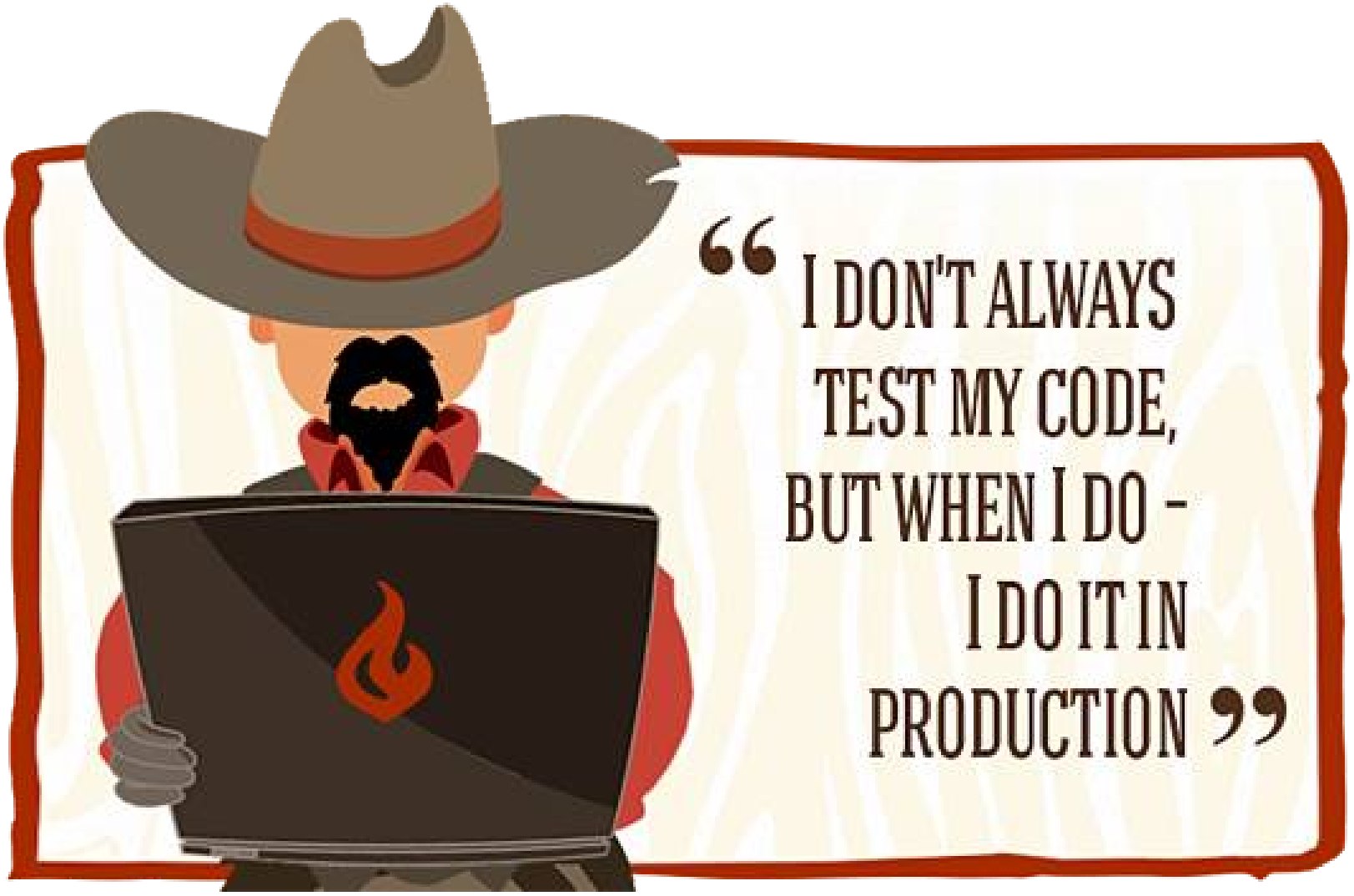
```
1    import { environment } from './environments/environment';
```

Building

Environments

```
> ng build --prod --environment=staging

> ng build --prod --env=staging

> ng build --prod -e=staging
```

Running tests



Running tests

Unit tests

```
> ng test
```

```
06 11 2016 15:45:50.285:WARN [karma]: No captured browser, open http://localhost:9876/
06 11 2016 15:45:50.326:INFO [karma]: Karma v1.2.0 server started at http://localhost:9876/
06 11 2016 15:45:50.329:INFO [launcher]: Launching browser Chrome with unlimited concurrency
06 11 2016 15:45:50.354:INFO [launcher]: Starting browser Chrome

06 11 2016 15:46:02.478:INFO [Chrome 54.0.2840 (Windows 10 0.0.0)]: Connected on socket /#Zn7y
oZt4q_rcfUeXAAAA with id 20716195
Chrome 54.0.2840 (Windows 10 0.0.0): Executed 4 of 4 SUCCESS (1.255 secs / 1.224 secs)
```

Running tests

End-to-end tests

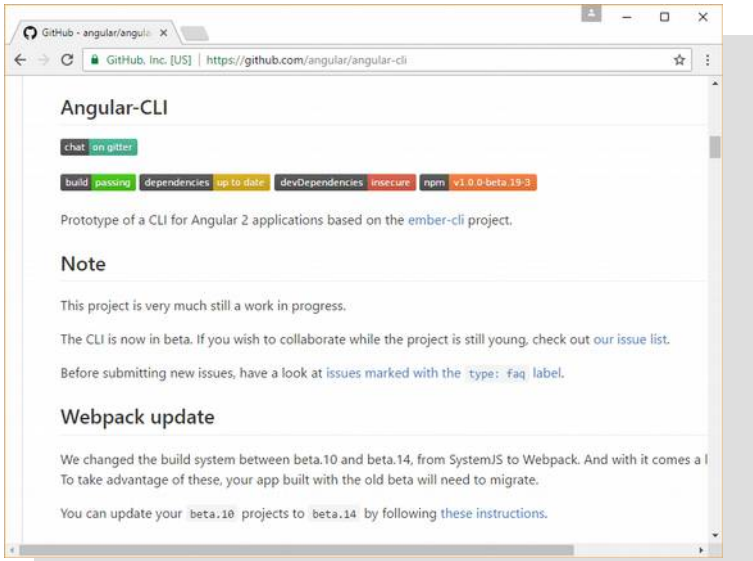
```
> ng e2e
```

```
[16:00:39] I/direct - Using ChromeDriver directly...
[16:00:39] I/launcher - Running 1 instances of WebDriver
Started
Spec started
.
  my-app App
    √ should display message saying app works



1 spec, 0 failures
Finished in 4.549 seconds

Executed 1 of 1 spec SUCCESS in 5 secs.
[16:00:59] I/launcher - 0 instance(s) of WebDriver still running
[16:00:59] I/launcher - chrome #01 passed

All end-to-end tests pass.
```

References

- https://cli.angular.io/

- https://github.com/angular/angular-cli




Thanks!