Building progressive web applications in **Angular 2** and **Zurb Foundation 6**

Michal Rafalski

Summary

- ✓ Technology stack
    - ✓ My choices and preferences
    - ✓ How all the layers fit together

- ✓ Application skeleton
    - ✓ How to use it to start something new
    - ✓ How to improve the result and make it a mobile app

Progressive applications

Assumptions

01 **Reliable**
Load instantly and never show the "downasaur", even in uncertain network conditions.

02 **Engaging**
Feel like a natural app on the device, with an immersive user experience.

03 **Fast**
Respond quickly to user interactions with silky smooth animations and no janky scrolling.

Source: https://developers.google.com/web/progressive-web-apps/

Progressive applications

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ANGULARJS

React

Typescript

Superset of JavaScript

01 Super JavaScript

Typescript gives possibility to use all JavaScript features including those from ES6 standard.

02 Extra features

Provides optional static typing, classes and interfaces.

03 Similar to...

Object-oriented languages like C# and Java.

```javascript
var Greeter = (function () {
    function Greeter(message) {
        this.greeting = message;
    }
    Greeter.prototype.greet = function () {
        return "Hello, " + this.greeting;
    };
    return Greeter;
})();
```

JS

TS

```typescript
class Greeter {
    greeting: string;
    constructor (message: string) {
        this.greeting = message;
    }

    greet() {
        return "Hello, " + this.greeting;
    }
}
```

Components

Angular 2 Component = Angular 1 Directive + Angular 1 Template

01 Shadow DOM

Allows us to hide DOM logic behind other elements. In addition to that, it enables us to apply scoped styles to elements without them bleeding out to the outer world.

02 No conflicts

Very often when you have a lot of elements on you website and you use many CSS files (your private or from some frameworks) you can have conflicts with styles and functionality.

03 Libraries

Angular Material 2
Fuel-UI
Kendo UI
ng-bootstrapng-lightning
ng2-bootstrap
Onsen UI
Prime Faces
Semantic UI
Vaadin

Search...

Usage

```
// RECOMMENDED (doesn't work with system.js)
import { DropdownModule } from 'ng2-bootstrap/dropdown';
// or
import { DropdownModule } from 'ng2-bootstrap';


@NgModule({
  imports: [DropdownModule.forRoot(),...]
})
export class AppModule(){}
```

Examples

Wrap the dropdown's toggle (your button or link) and the dropdown menu within `dropdown`. Dropdowns can be triggered from `<a>` or `<button>` elements to better fit your potential needs.

Single button dropdowns

Any single `.btn` can be turned into a dropdown toggle with some markup changes. Here's how you can put them to work with either `<button>` elements:

Button dropdown ▾

Action

Another action

Something else here

Separated link

```
   dropdown>
   button" type="button" class="btn btn-primary" dropdownToggle>
   pan class="caret"></span>
5.  <ul dropdownMenu role="menu" aria-labelledby="single-button">
6.      <li role="menuitem"><a class="dropdown-item" href="#">Action</a></li>
7.      <li role="menuitem"><a class="dropdown-item" href="#">Another action</a></li>
8.      <li role="menuitem"><a class="dropdown-item" href="#">Something else here</a></li>
9.      <li class="divider dropdown-divider"></li>
10.     <li role="menuitem"><a class="dropdown-item" href="#">Separated link</a></li>
11.  </ul>
12. </div>
```

And with `<a>` elements:

Click me for a dropdown, yo!

Zurb Foundation

Front-end framework for responsive website design

01 **Grid**
Responsive front-end
framework that makes it easy to
design beautiful websites.

02 **Cross browser**
Provides optional static typing,
classes and interfaces,

03 **Modern design**
Intuitive and readable.

Documentation: http://foundation.zurb.com/sites/docs/

```
        <a class="button">Two</a>
        <a class="button">Three</a>
</div>
```

| One | Two | Three |

Sizing

Button groups can be sized with the same classes as standard buttons: `.tiny`, `.small`, and `.large`.

```
<div class="small button-group">
   <a class="button">Small</a>
   <a class="button">Button</a>
   <a class="button">Group</a>
</div>
```

Copy

| Small | Button | Group |

Coloring

Buttons within a button group can be colored individually with the `.secondary`, `.success`, `.warning`, and `.alert` classes.

```
<div class="button-group">
   <a class="secondary button">View</a>
   <a class="success button">Edit</a>
   <a class="warning button">Share</a>
   <a class="alert button">Delete</a>
</div>
```

Copy

| View | Edit | Share | Delete |

The entire group can also be colored using the same classes.

```
<div class="secondary button-group">
   <a class="button">Harder</a>
   <a class="button">Better</a>
```

Copy

Coloring

Callouts can be colored using the `.secondary`, `.primary`, `.success`, `.warning`, or `.alert` classes. Links inside the callout will be tinted to match the color of the callout.

```
<div class="callout secondary">
  <h5>This is a secondary callout</h5>
  <p>It has an easy to override visual style, and is appropriately subdued.</p>
  <a href="#">It's dangerous to go alone, take this.</a>
</div>
```

Copy

This is a secondary callout

It has an easy to override visual style, and is appropriately subdued.

It's dangerous to go alone, take this.

This is a primary callout

It has an easy to override visual style, and is appropriately subdued.

It's dangerous to go alone, take this.

This is a success callout

It has an easy to override visual style, and is appropriately subdued.

It's dangerous to go alone, take this.

This is a warning callout

It has an easy to override visual style, and is appropriately subdued.

It's dangerous to go alone, take this.

This is an alert callout

It has an easy to override visual style, and is appropriately subdued.

It's dangerous to go alone, take this.

My favourite stack

For building web applications

Language

Main framework

Styles

Mobile

Bundle

Another person

Permission

Access points

Access point via tree

Location

Vehicles

View person's info

Rafalski, Michal Piotr

←

Contact

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E-mail michal.rafalski@cern.ch

Personnel

Personal ID		CERN ID	
Birthdate	18-MAY-1988		
Org unit	BE-ICS-AC	Class	
End date	01-MAR-2017 00:00		
Institute			

Access to CERN (O.C.2 Situation) — Allowed

Identi...

Card s...		Card end date	-
Card R...			
SALTO situation	Not_enabled	SALTO end	-
Dosimeter situation	Not_OK	Biometric ID situation	Not_OK
Dosimeter RFID	-		
E-locks situation	Not_enabled	E-locks end date	-

▼ Vehicles

License plate	Country	Manufacturer	Model	Car pool number
				false

▼ Obtained training ranks

Filter

Filter

Items per page

10

Code	Description	Start date	End date	Days left	Situation ▼	Acquired via	Training
90010	Computer Security	03-MAR-2015	03-MAR-2018	414	Passed	COURIT/SIR	Renew this training rank

Our project

https://github.com/Websitescity/ng2-f6-starter

Repository

Github

https://github.com/Websitescity/ng2-f6-starter
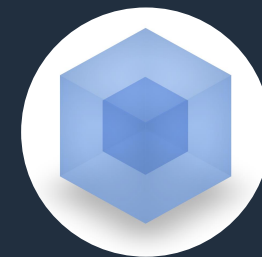
- ✓ git clone https://github.com/Websitescity/ng2-f6-starter

- ✓ cd ng2-f6-starter

- ✓ # install the repo with npm
- ✓ npm install

- ✓ # start the server
- ✓ npm start

Welcome!

WebPack Angular 2 Starter by @AngularClass

Components

How a basic component looks like

```
import { Component } from '@angular/core';
@Component({

    selector: 'app',                        <————————————>    <app></app>
    templateUrl: './app.component.html',
    styleUrls: ['./app.component.css']
})
export class AppComponent {
    title = 'app works!';
}
```

Zurb Foundation

Front-end framework for design beautiful responsive websites

```
import { Component } from '@angular/core';
@Component({

    selector: 'app',
    templateUrl: './app.component.html',
    styleUrls: ['./app.component.css',
    '../../node_modules/foundation-sites/dist/css/foundation.css']
})
```

Branch: master ▾   New pull request   Create new file   Upload files   Find file   Clone or download ▾

mrafalsk added pipes   Latest commit f05dd77 21 days ago

📁 .github	webpack	29 days ago
📁 .vscode	webpack	29 days ago
📁 config	add components: charts, navigation	27 days ago
📁 src	added pipes	21 days ago
📄 .editorconfig	webpack	29 days ago
📄 .gitattributes	webpack	29 days ago
📄 .gitignore	webpack	29 days ago
📄 .nvmrc	webpack	29 days ago
📄 .travis.yml	webpack	29 days ago
📄 Dockerfile	webpack	29 days ago
📄 LICENSE	webpack	29 days ago
📄 README.md	webpack	29 days ago
📄 firebase.json	webpack	29 days ago
📄 karma.conf.js	webpack	29 days ago
📄 netlify.toml	webpack	29 days ago
📄 package.json	add components: charts, navigation	27 days ago
📄 protractor.conf.js	webpack	29 days ago
📄 tsconfig.json	webpack	29 days ago
📄 tsconfig.webpack.json	webpack	29 days ago
📄 tslint.json	webpack	29 days ago
📄 typedoc.json	webpack	29 days ago
📄 webpack.config.js	webpack	29 days ago

Websitescity / ng2-f6-starter

Unwatch ▾ 1   ★ Star 1   Fork 0

<> Code   ⊘ Issues 5   ⑂ Pull requests 0   ▦ Projects 0   ▤ Wiki   ⚡ Pulse   ▥ Graphs   ⚙ Settings

Branch: master ▾   **ng2-f6-starter** / **src** /   Create new file   Upload files   Find file   History
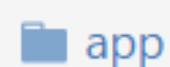
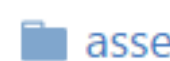mrafalsk added pipes   Latest commit f05dd77 21 days ago

..

📁 app	added pipes	21 days ago
📁 assets	webpack	29 days ago
📁 meta	webpack	29 days ago
📁 styles	added header component, fixed footer	21 days ago
📄 custom-typings.d.ts	webpack	29 days ago
📄 index.html	added font-awesome	25 days ago
📄 main.browser.aot.ts	webpack	29 days ago
📄 main.browser.ts	webpack	29 days ago
📄 polyfills.browser.ts	add components: charts, navigation	27 days ago

```
12    <% if (webpackConfig.htmlElements.headTags) { %>
13      <!-- Configured Head Tags  -->
14      <%= webpackConfig.htmlElements.headTags %>
15      <% } %>

16

17      <!-- external CSS files -->
18      <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" rel="stylesheet">
19      <!-- base url -->
20      <base href="<%= htmlWebpackPlugin.options.metadata.baseUrl %>">
21    </head>

22

23    <body>

24

25      <app>
26        Loading...
27      </app>

28

29      <% if (htmlWebpackPlugin.options.metadata.isDevServer && htmlWebpackPlugin.options.metadata.HMR !== true) { %>
30      <!-- Webpack Dev Server reload -->
31      <script src="/webpack-dev-server.js"></script>
32      <% } %>

33

34

35    </body>
36    </html>
```

ng2-f6-starter/src/index.html

```
 4   import {
 5     Component,
 6     OnInit,
 7     ViewEncapsulation
 8   } from '@angular/core';
 9   import { AppState } from './app.service';
10
11   /*
12    * App Component
13    * Top Level Component
14    */
15   @Component({
16     selector: 'app',
17     encapsulation: ViewEncapsulation.None,
18     styleUrls: [
19       './app.component.css',
20       '../../node_modules/foundation-sites/dist/css/foundation.css'
21     ],
22     template: `
23   <navigation></navigation>
24   <main>
25     <router-outlet></router-outlet>
26   </main>
27
28   <footer class="row"><span>WebPack Angular 2 Starter by <a [href]="url">@AngularClass</a></span></footer>
29     `
```

```
 4   import {
 5     Component,
 6     OnInit,
 7     ViewEncapsulation
 8   } from '@angular/core';
 9   import { AppState } from './app.service';
10
11   /*
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20       '../../node_modules/foundation-sites/dist/css/foundation.css'
21     ],
22     template: `
23   <navigation></navigation>
24   <main>
25     <router-outlet></router-outlet>
26   </main>
27
28   <footer class="row"><span>WebPack Angular 2 Starter by <a [href]="url">@AngularClass</a></span></footer>
29     `
```

```typescript
import {
  Component,
  OnInit,
  ViewEncapsulation
} from '@angular/core';
import { AppState } from './app.service';


/*
 * App Component
 * Top Level Component
 */
@Component({
  selector: 'app',
  encapsulation: ViewEncapsulation.None,
  styleUrls: [
    './app.component.css',
    '../../node_modules/foundation-sites/dist/css/foundation.css'
  ],
  template: `
<navigation></navigation>
<main>
    <router-outlet></router-outlet>
</main>

<footer class="row"><span>WebPack Angular 2 Starter by <a [href]="url">@AngularClass</a></span></footer>

  `
```

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<> Code   ⊘ Issues 5   ⋔ Pull requests 0   ▦ Projects 0   ▤ Wiki   ⟋ Pulse   ▥ Graphs   ⚙ Settings

Branch: master ▾   **ng2-f6-starter** / **src** / **app** /

Create new file   Upload files   Find file   History

mrafalsk added pipes   Latest commit f05dd77 21 days ago

..

📁 +barrel	webpack	29 days ago
📁 +detail	webpack	29 days ago
📁 about	webpack	29 days ago
📁 charts	updated charts in zf6	21 days ago
📁 components	added pipes	21 days ago
📁 home	added header component, fixed footer	21 days ago
📁 no-content	webpack	29 days ago
📁 pipes	added pipes	21 days ago
📁 services	added data service	25 days ago
📄 app.component.css	webpack	29 days ago
📄 app.component.spec.ts	webpack	29 days ago
📄 app.component.ts	added header component, fixed footer	21 days ago
📄 app.e2e.ts	webpack	29 days ago
📄 app.module.ts	updated charts in zf6	21 days ago
📄 app.resolver.ts	webpack	29 days ago
📄 app.routes.ts	add components: charts, navigation	27 days ago
📄 app.service.ts	webpack	29 days ago
📄 environment.ts	webpack	29 days ago
📄 index.ts	webpack	29 days ago

```
25  import { APP_RESOLVER_PROVIDERS } from './app.resolver';
26  import { AppState, InternalStateType } from './app.service;
27  import { HomeComponent } from './home';
28  import { AboutComponent } from './about';
29  import { NoContentComponent } from './no-content';
30  import { XLargeDirective } from './home/x-large';
31
32  import '../styles/styles.scss';
33  import '../styles/headings.css';
34  import {ChartsComponent} from "./charts/charts.component";
35  import {LineChartDemoComponent} from "./components/ng2-charts/line-chart-demo";
36  import {ChartsModule} from "ng2-charts";
37  import {NavigationComponent} from "./components/navigation/navigation";
38  import {DataService} from "./services/data.service";
39  import {HeaderComponent} from "./components/header/header";
40  import {BarChartDemoComponent} from "./components/ng2-charts/bar-chart-demo";
41
42  // Application wide providers
43  const APP_PROVIDERS = [
44    ...APP_RESOLVER_PROVIDERS,
45    AppState
46  ];
47
48  type StoreType = {
49    state: InternalStateType,
50    restoreInputValues: () => void,
51    disposeOldHosts: () => void
52  };
53
54  /**
```

ng2-f6-starter/src/app/**app.module.ts**

```
1   import { Routes, RouterModule } from '@angular/router';
2   import { HomeComponent } from './home';
3   import { AboutComponent } from './about';
4   import { NoContentComponent } from './no-content';
5
6   import { DataResolver } from './app.resolver';
7   import {ChartsComponent} from "./charts/charts.component";
8
9   export const ROUTES: Routes = [
10    { path: '',       component: HomeComponent },
11    { path: 'home',   component: HomeComponent },
12    { path: 'about',  component: AboutComponent },
13    { path: 'charts', component: ChartsComponent },
14    { path: 'detail', loadChildren: './+detail#DetailModule'},
15    { path: 'barrel', loadChildren: './+barrel#BarrelModule'},
16    { path: '**',     component: NoContentComponent },
17  ];
```

ng2-f6-starter/src/app/app.routes.ts

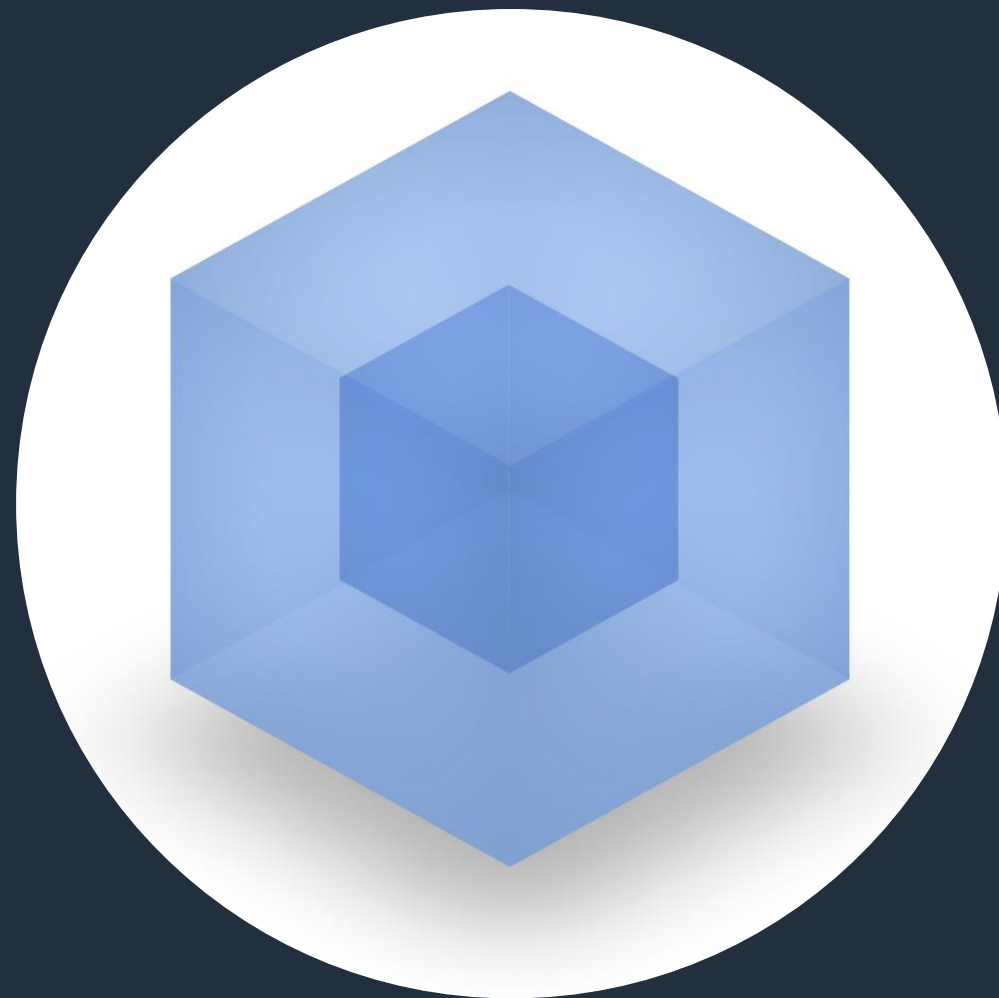http://localhost:3000/#/charts

Other tools

Do not reinvent the wheel

01 Webpack

SASS -> CSS
Typescript -> JavaScript
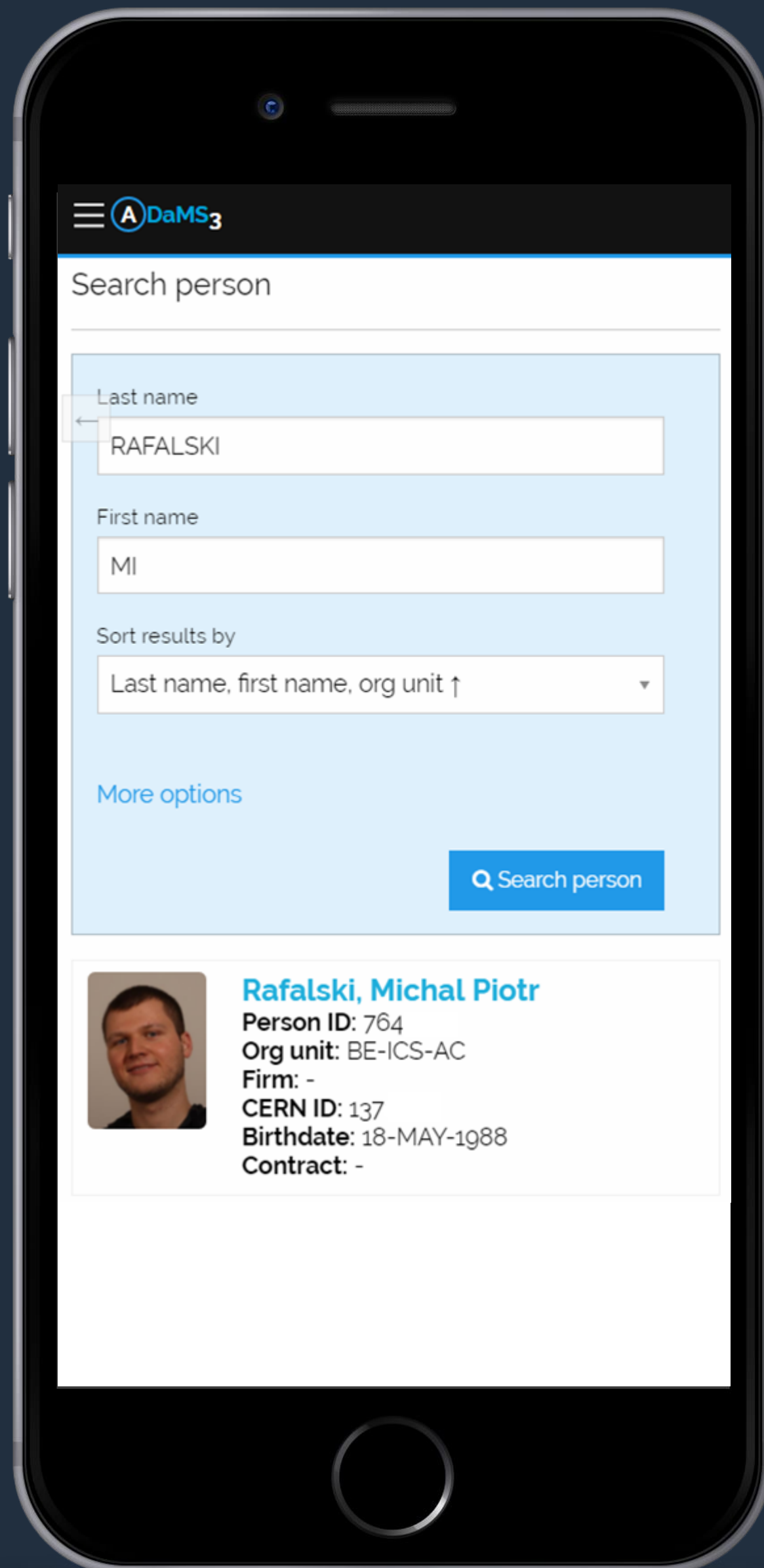Tests, gulp, production version

02 IntelliJ

Editor

03 Docker

Automates the deployment of applications inside software containers

Ionic 2
Web app to mobile

01 Cross platform app
For Android and iOS

02 Angular 2
80% of the project

03 Easy to maintain

It is simpler than maintain 2 applications
in Java and Objective C

Thank you for your attention
Questions?