

# Migrer ses applications AngularJs vers Angular en dou(c|l)eur avec l'approche Hybride

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THIBAUD DESTOUCHES  
JULES DELARUE



Version de travail

The world is how we shape it\*

sopra  steria

\* Le monde est tel que nous le façonnons.

# Qui sommes –nous ?



**DESTOUCHES Thibaud**



**DELARUE Jules**

# Sopra Steria, un des leaders européens de la Tech

Un Groupe européen de conseil, de services numériques & d'édition de solutions

**47 000**  
collaborateurs

**4,7 Md€**  
CA 2021

**Top 5**  
des acteurs européens

**~30**  
pays



## Un modèle indépendant

Reposant sur une vision long terme et la performance économique



## Une culture d'entrepreneur

Agilité, autonomie de décision des managers, sens du collectif et respect de l'autre



## Un groupe centré sur l'humain

Politique RH basée sur la responsabilité, la confiance et le développement des compétences



## Le partenaire de confiance

Posture d'écoute, de convictions et de proximité avec nos clients et partenaires

# Le centre de services APS

Des communautés d'experts au service des projets

## SQUAD Architecture & Expertise (ETAPS)

**36** Nombre de personnes (20 Architectes et 16 experts techniques) **dédiées** au monde de **l'Assurance et de la Protection Sociale**



La participation à des **conférences réputées** et la restitution des informations les plus marquantes / utiles auprès des équipes



Une **animation trimestrielle** (plénière) de présentation de nouvelles solutions, de partage de bonnes pratiques, de retour d'expérience.



## Communauté Sécurité



Mise en place de différents systèmes dont des modules e-learning pour faire partager les bonnes pratiques en terme de **sécurité et d'anti-piratage** et l'obtention d'une certification **ISO-27001**

## Communauté Industrialisation



Cellule autour de **l'industrialisation** de l'ensemble des activités, notamment au travers de la DEP (Digitale Enable Platform), basée sur la solution Cloud Microsoft AZURE

## Communauté BA / Testing

**21**

Nombre de personnes au sein de la Communauté des Business Analyst **dédiées** au monde de **l'Assurance et de la Protection Sociale**



Formations fondamentales métiers, **Spécification** (capture et formalisation des exigences) et **Acceptance** (élaboration, déroulement et analyse de la stratégie de Test)

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# De quoi qu'on parle ?

- 01 Un zeste de contexte, avec un soupçon d'enjeu
- 02 Démontrer la faisabilité – les prérequis
- 03 *Live coding partie 1* - hybridation de l'application PhoneCat (cohabitation simple)
- 04 Démontrer la faisabilité – en vrai (on ne part pas d'une appli clean)
- 05 Etat du projet à ce jour
- 06 Les next steps (avec encore du livecoding ?! )

# 01

## Contexte

# Contexte et Enjeux

- **Google a abandonné le support d'AngularJS (version 1.8.x) depuis le 31/12/2021. Ce qui implique qu'il n'y aura plus de correctifs ou d'évolutions pour le framework même en cas de vulnérabilités critiques de sécurité. Pour ces raisons, il est recommandé de migrer vers le framework Angular (version 2+).**
  
- **A noter qu'en complément, le framework Angular permet :**
  - └ D'accéder à de nouvelles fonctionnalités/modules qui permettront aux applications de continuer à être alignée avec le marché.
  - └ De réaliser les prochaines montée de version de façon simple car Google a mis en place dans les version 2+ un outil de migration « simplifiée » indiquant les principales évolutions (<https://update.angular.io/>)
  
- **Une montée de version vers Angular est donc préconisée pour des raisons de :**
  - └ Sécurité
  - └ Performance
  - └ Compatibilité

# Genèse

Pourquoi un framework hybride ?

- **Sopra Steria développe pour 2015 le système de gestion d'un client du monde de la protection sociale en AngularJS**
  - └ 350+ écrans développés
- **Impossibilité de faire une migration en « one shot » d'un périmètre aussi grand**
- **Choix de procéder à une migration de l'exhaustivité du périmètre de manière itérative sur 18 mois et 13 lots**
  - └ Pas de rupture de service
  - └ Pas de gel fonctionnel de l'ensemble du périmètre
  - └ Des mises en production successives à chaque fin de lot



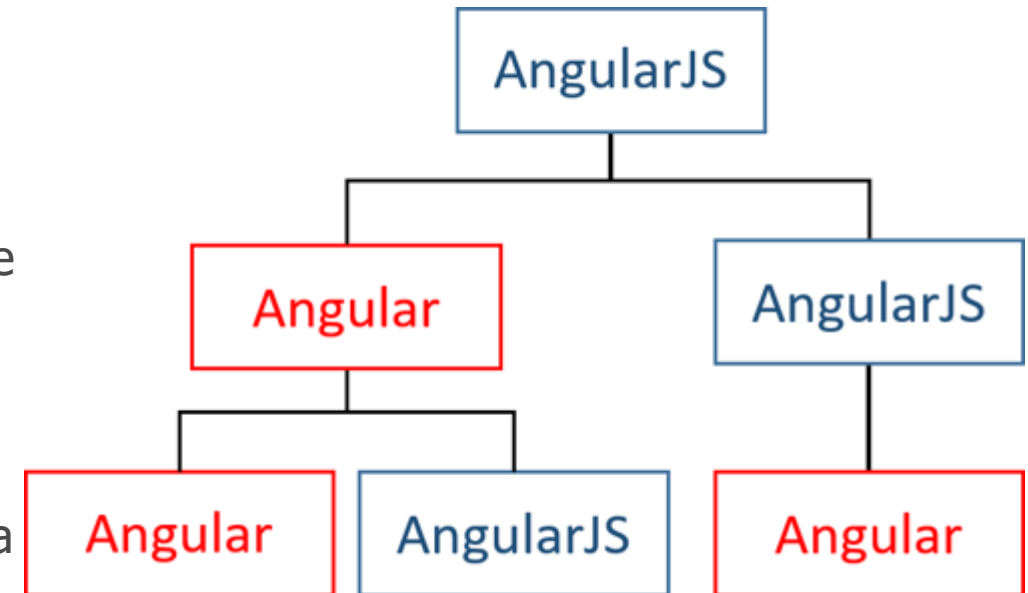
# 02

## Faisabilité

LES PRÉREQUIS

# Principe de base

- **On souhaite pouvoir faire cohabiter les écrans AngularJS et Angular**
  - └ Transparent pour l'utilisateur
  - └ Sans produire une usine à gaz
  - └ Permettant de migrer les écrans de manière itérative
- **On souhaite se placer dans l'état de l'art d'Angular sans casser le legacy**
  - └ Du code Angular propre et maintenable à la fin de la migration
  - └ En utilisant les bonnes pratiques
- **On éprouve nos hypothèse avec un PoC**



# Proof of Concept

1

Carte Blanche Partenaires  
Recherche équipement

Verres Lentilles Monture Audioprothèses

Critères de recherche

Fabricant Fournisseur

Tous Tous

Recherche textuelle libellé verre Recherche textuelle code EDI verre

Est un verre de marque distributeur Type d'équipement

Indifférent Réseau CBP

Classe

Indifférent

- La nouvelle version d'Angular se charge d'assurer la rétrocompatibilité 1
- Le menu et l'entête sont toujours sur la version historique 2 3
- Le contenu de la page est sur la nouvelle version 4 mais ça ne l'empêche pas de réutiliser des éléments de la version actuelle 5

- Nouveau composant (Angular)
- Composant de la version actuelle (AngularJS)

# 03

## Livecoding

# L'application à migrer

<https://github.com/angular/angular-phonecat/commits/1.5-snapshot>

- **Tour de l'appli**
- **Init nouveau projet angular 13**
- **Recopier les sources AngularJs**
- **Bootstrap IT**
- **Voilà c'est hybride**

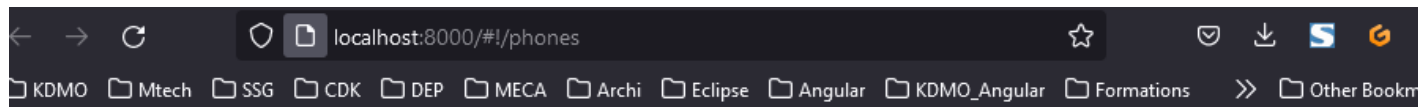
Livcoding

# Le legacy

The screenshot displays a code editor interface with a project explorer on the left and two open files on the right. The project explorer shows a directory structure for 'tnt-2023-framework-hybride' with subdirectories like 'app', 'core', 'img', and 'phone-detail'. The 'package.json' file is open in the center, showing metadata and dependencies. The 'bower.json' file is open on the right, showing component dependencies.

```
"version": "0.0.0",
"description": "A tutorial application for AngularJS",
"repository": "https://github.com/angular/angular-phonecat",
"license": "MIT",
"devDependencies": {
  "bower": "^1.7.7",
  "http-server": "^0.9.0",
  "jasmine-core": "^2.4.1",
  "karma": "^0.13.22",
  "karma-chrome-launcher": "^0.2.3",
  "karma-firefox-launcher": "^0.1.7",
  "karma-jasmine": "^0.3.8",
  "protractor": "^4.0.9"
},
"scripts": {
  "postinstall": "bower install",
  "prestart": "npm install",
  "start": "http-server ./app -a localhost -p 8000 -c-1",
  "pretest": "npm install",
  "test": "karma start karma.conf.js",
  "test-single-run": "karma start karma.conf.js --single-run",
  "preupdate-webdriver": "npm install",
  "update-webdriver": "webdriver-manager update",
  "preprotractor": "npm run update-webdriver",
  "protractor": "protractor e2e-tests/protractor.conf.js",
  "update-index-async": "node -e \"var fs=require('fs'),indexFile='app/index-async.html\""
}
```

```
{
  "name": "angular-phonecat",
  "description": "A starter project for AngularJS",
  "version": "0.0.0",
  "homepage": "https://github.com/angular/angular-phonecat",
  "license": "MIT",
  "private": true,
  "dependencies": {
    "angular": "1.5.x",
    "angular-animate": "1.5.x",
    "angular-mocks": "1.5.x",
    "angular-resource": "1.5.x",
    "angular-route": "1.5.x",
    "bootstrap": "3.3.x",
    "jquery": "2.2.x"
  }
}
```



Search:

Sort by: Newest ▼



#### Motorola XOOM™ with Wi-Fi

The Next, Next Generation Experience the future with Motorola XOOM with Wi-Fi, the world's first tablet powered by Android 3.0 (Honeycomb).



#### MOTOROLA XOOM™

The Next, Next Generation Experience the future with MOTOROLA XOOM, the world's first tablet powered by Android 3.0 (Honeycomb).



#### MOTOROLA ATRIX™ 4G

MOTOROLA ATRIX 4G the world's most powerful smartphone.



#### Dell Streak 7

Introducing Dell™ Streak 7. Share photos, videos and movies together. It's small enough to carry around, big enough to gather around.



## Motorola XOOM™ with Wi-Fi

Motorola XOOM with Wi-Fi has a super-powerful dual-core processor and Android™ 3.0 (Honeycomb) — the Android platform designed specifically for tablets. With its 10.1-inch HD widescreen display, you enjoy HD video in a thin, light, powerful and upgradeable tablet.



### Availability and Networks

Availability

**Battery**  
**Type**  
Other ( mAh)  
**Talk Time**  
24 hours  
**Standby time (max)**  
336 hours

**Storage and Memory**  
**RAM**  
1000MB  
**Internal Storage**  
32000MB

**Connectivity**  
**Network Support**  
**WiFi**  
802.11 b/g/n  
**Bluetooth**  
Bluetooth 2.1  
**Infrared**  
X  
**GPS**  
✓

**Android**  
**OS Version**  
Android 3.0  
**UI**

**Size and Weight**  
**Dimensions**  
249.1 mm (w)  
167.8 mm (h)

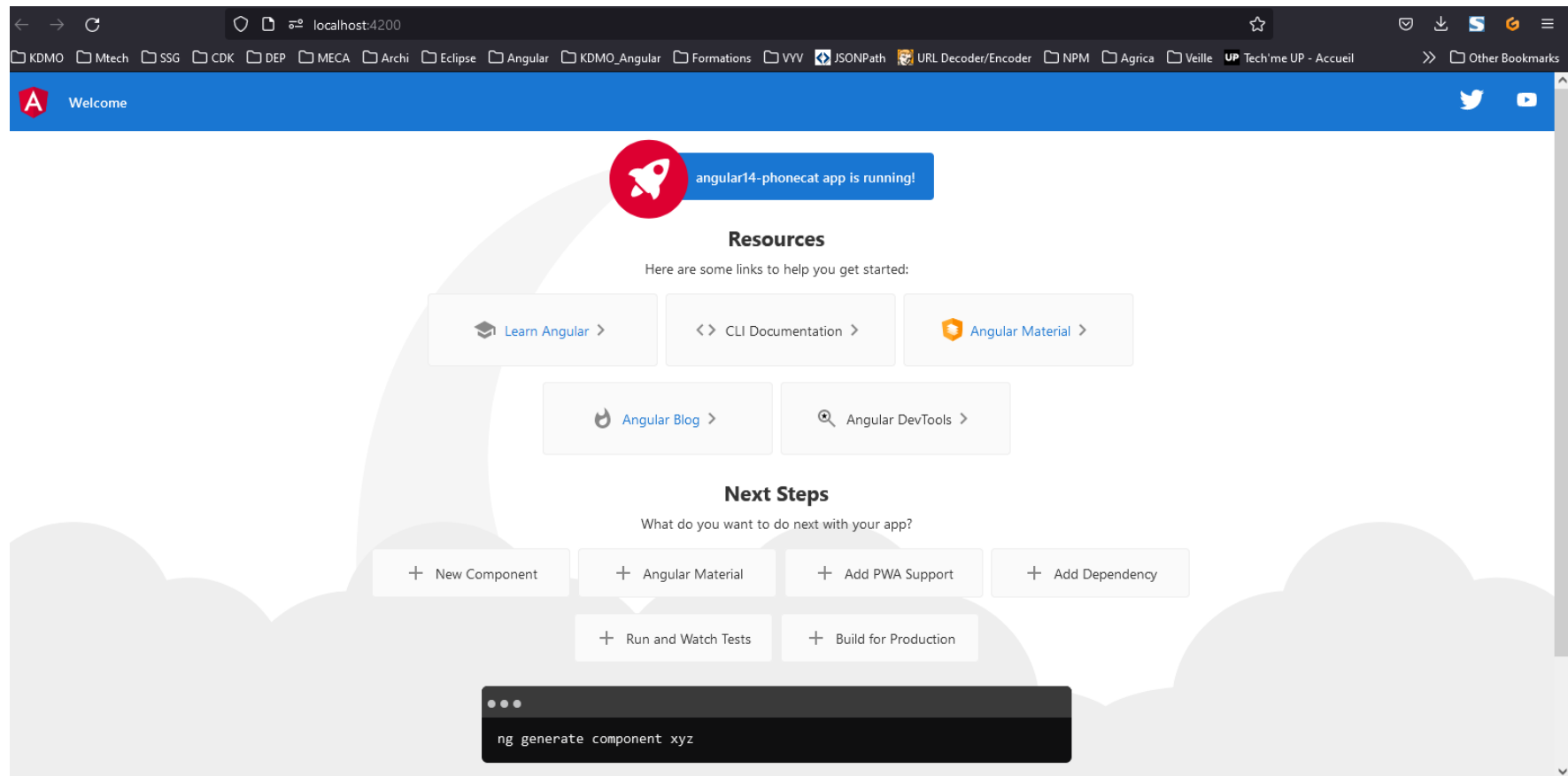
**Display**  
**Screen size**  
10.1 inches  
**Screen resolution**

**Hardware**  
**CPU**  
1 GHz Dual Core Tegra 2  
**USB**



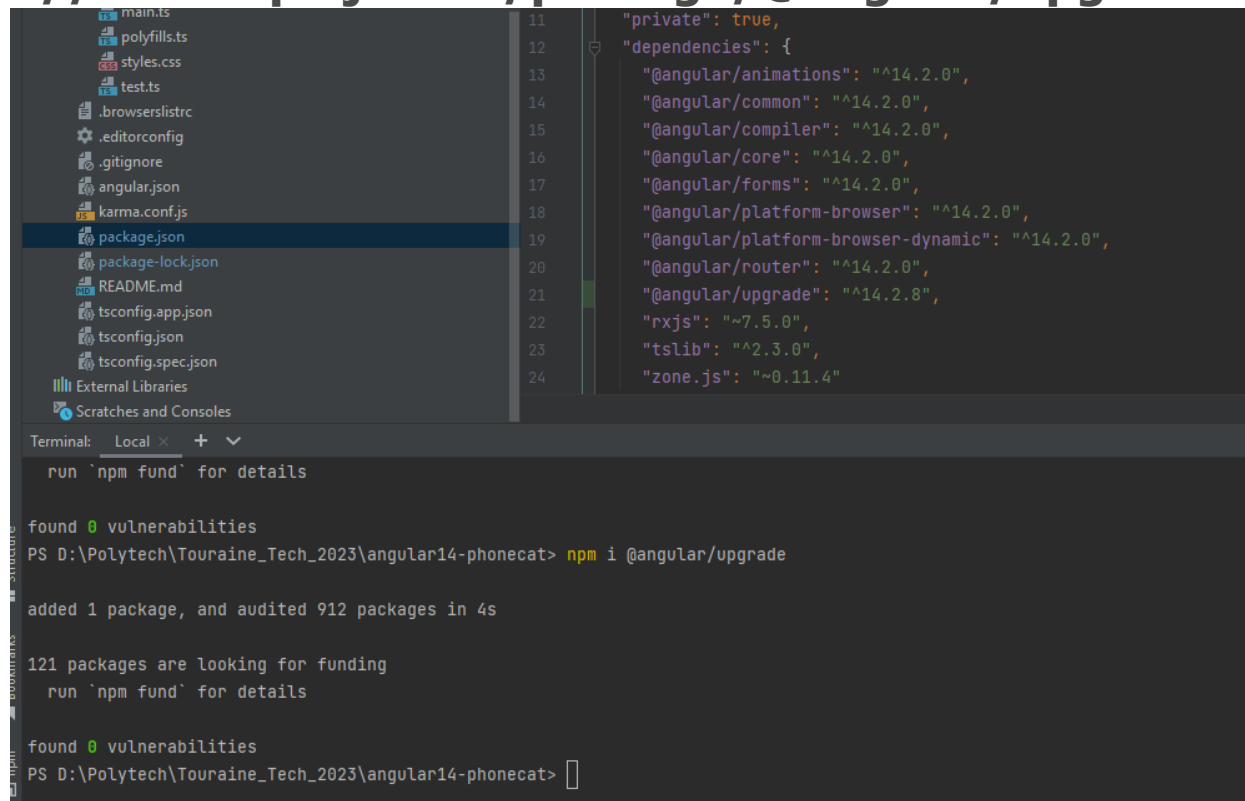
# Init projet tout propre

```
jdelarue@ITEM-S95818 MINGW64 /d/Polytech/Touraine_Tech_2023
$ ng new angular14-phonecat
CREATE angular14-phonecat/angular.json (2982 bytes)
CREATE angular14-phonecat/package.json (1049 bytes)
CREATE angular14-phonecat/README.md (1071 bytes)
CREATE angular14-phonecat/tsconfig.json (863 bytes)
CREATE angular14-phonecat/.editorconfig (274 bytes)
CREATE angular14-phonecat/.gitignore (548 bytes)
CREATE angular14-phonecat/.browserslistrc (600 bytes)
CREATE angular14-phonecat/karma.conf.js (1435 bytes)
CREATE angular14-phonecat/tsconfig.app.json (287 bytes)
CREATE angular14-phonecat/tsconfig.spec.json (333 bytes)
CREATE angular14-phonecat/.vscode/extensions.json (130 bytes)
CREATE angular14-phonecat/.vscode/launch.json (474 bytes)
CREATE angular14-phonecat/.vscode/tasks.json (938 bytes)
CREATE angular14-phonecat/src/favicon.ico (948 bytes)
CREATE angular14-phonecat/src/index.html (303 bytes)
CREATE angular14-phonecat/src/main.ts (372 bytes)
CREATE angular14-phonecat/src/polyfills.ts (2338 bytes)
CREATE angular14-phonecat/src/styles.css (80 bytes)
CREATE angular14-phonecat/src/test.ts (749 bytes)
CREATE angular14-phonecat/src/assets/.gitkeep (0 bytes)
CREATE angular14-phonecat/src/environments/environment.prod.ts (51 bytes)
CREATE angular14-phonecat/src/environments/environment.ts (658 bytes)
CREATE angular14-phonecat/src/app/app.module.ts (314 bytes)
CREATE angular14-phonecat/src/app/app.component.html (23083 bytes)
CREATE angular14-phonecat/src/app/app.component.spec.ts (992 bytes)
CREATE angular14-phonecat/src/app/app.component.ts (222 bytes)
CREATE angular14-phonecat/src/app/app.component.css (0 bytes)
- Installing packages (npm)...
```



# Merge nouvelle app avec le legacy

- Copier src du legacy dans un dossier legacy
- Installer <https://www.npmjs.com/package/@angular/upgrade>



```
11  "private": true,  
12  "dependencies": {  
13    "@angular/animations": "^14.2.0",  
14    "@angular/common": "^14.2.0",  
15    "@angular/compiler": "^14.2.0",  
16    "@angular/core": "^14.2.0",  
17    "@angular/forms": "^14.2.0",  
18    "@angular/platform-browser": "^14.2.0",  
19    "@angular/platform-browser-dynamic": "^14.2.0",  
20    "@angular/router": "^14.2.0",  
21    "@angular/upgrade": "^14.2.8",  
22    "rxjs": "~7.5.0",  
23    "tslib": "^2.3.0",  
24    "zone.js": "~0.11.4"
```

```
Terminal: Local x + v  
run `npm fund` for details  
  
found 0 vulnerabilities  
PS D:\Polytech\Touraine_Tech_2023\angular14-phonecat> npm i @angular/upgrade  
  
added 1 package, and audited 912 packages in 4s  
  
121 packages are looking for funding  
  run `npm fund` for details  
  
found 0 vulnerabilities  
PS D:\Polytech\Touraine_Tech_2023\angular14-phonecat>
```

# Bower et dev dependencies ?

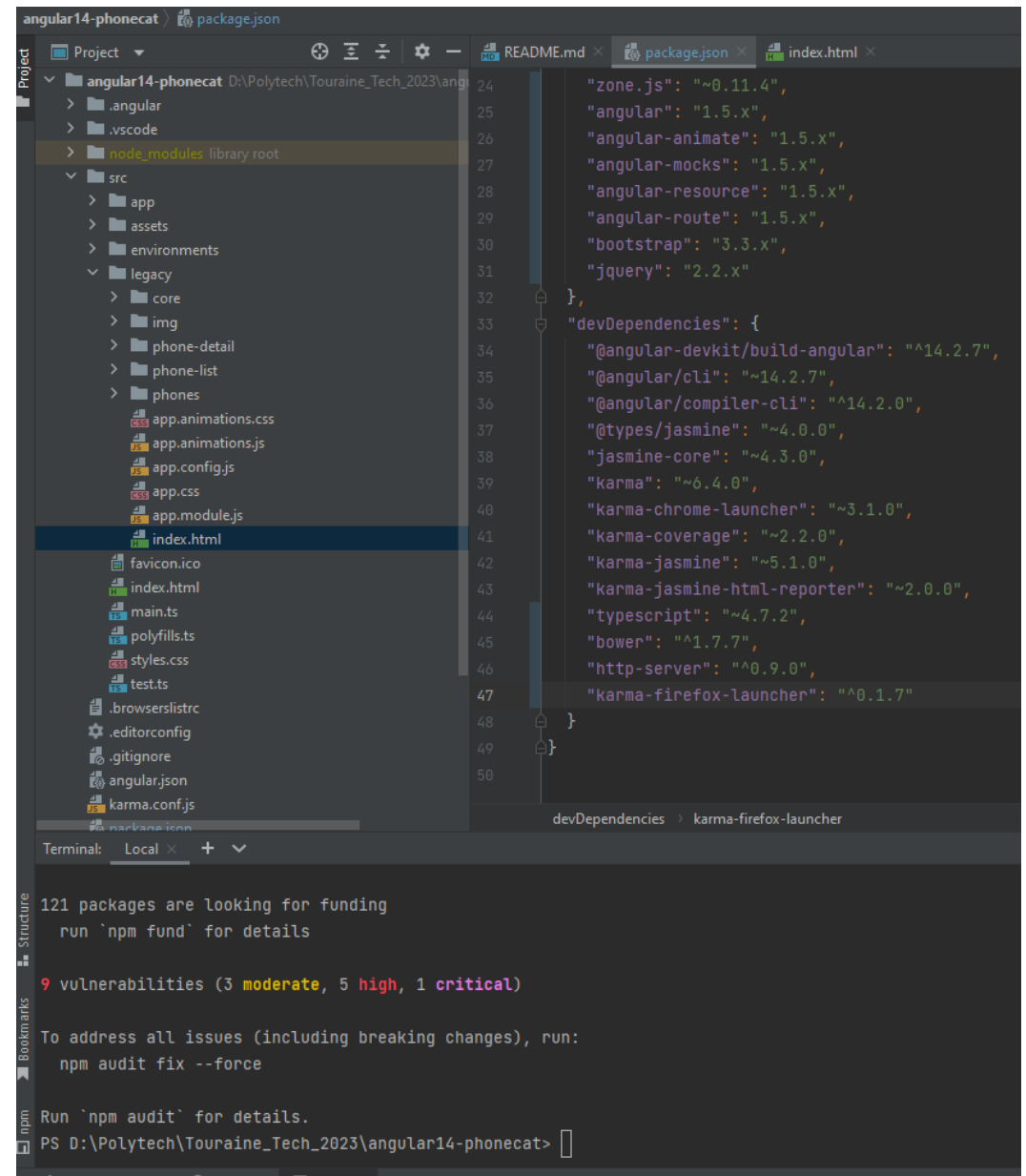
- Zou on déplace tout dans le package.json
- Que faire des doublons ?
  - └ On garde la dernière version (discutable)
  - └ On identifie les conflits

```
ERR! ERESOLVE could not resolve
ERR!
ERR! While resolving: @angular-devkit/build-angular@14.2.7
ERR! Found: protractor@4.0.14
ERR! node_modules/protractor
ERR!   dev protractor@"^4.0.9" from the root project
ERR!
ERR! Could not resolve dependency:
ERR! peerOptional protractor@"^7.0.0" from @angular-devkit/build-angular@14.2.7
ERR! node_modules/@angular-devkit/build-angular
ERR!   dev @angular-devkit/build-angular@"^14.2.7" from the root project
ERR! to accept an incorrect (and potentially broken) dependency resolution.
ERR!
ERR! See C:\Users\jdelarue\AppData\Local\npm-cache\eresolve-report.txt for a full report.
```

```
README.md x package.json x index.html x
{
  "rxjs": "~7.5.0",
  "tslib": "^2.3.0",
  "zone.js": "~0.11.4",
  "angular": "1.5.x",
  "angular-animate": "1.5.x",
  "angular-mocks": "1.5.x",
  "angular-resource": "1.5.x",
  "angular-route": "1.5.x",
  "bootstrap": "3.3.x",
  "jquery": "2.2.x"
},
  "devDependencies": {
    "@angular-devkit/build-angular": "^14.2.7",
    "@angular/cli": "~14.2.7",
    "@angular/compiler-cli": "^14.2.0",
    "@types/jasmine": "~4.0.0",
    "jasmine-core": "~4.3.0",
    "karma": "~6.4.0",
    "karma-chrome-launcher": "~3.1.0",
    "karma-coverage": "~2.2.0",
    "karma-jasmine": "~5.1.0",
    "karma-jasmine-html-reporter": "~2.0.0",
    "typescript": "~4.7.2",
    "bower": "1.7.7",
    "http-server": "0.9.0",
    "jasmine-core": "2.4.1",
    "karma": "0.13.22",
    "karma-chrome-launcher": "0.2.3",
    "karma-firefox-launcher": "0.1.7",
    "karma-jasmine": "0.3.8",
    "protractor": "4.0.9"
  }
}
```

## — Est-ce vraiment utile de garder bower et http server ?

- Probablement pas, mais dans le doute on garde



```
angular14-phonecat > package.json
24
25
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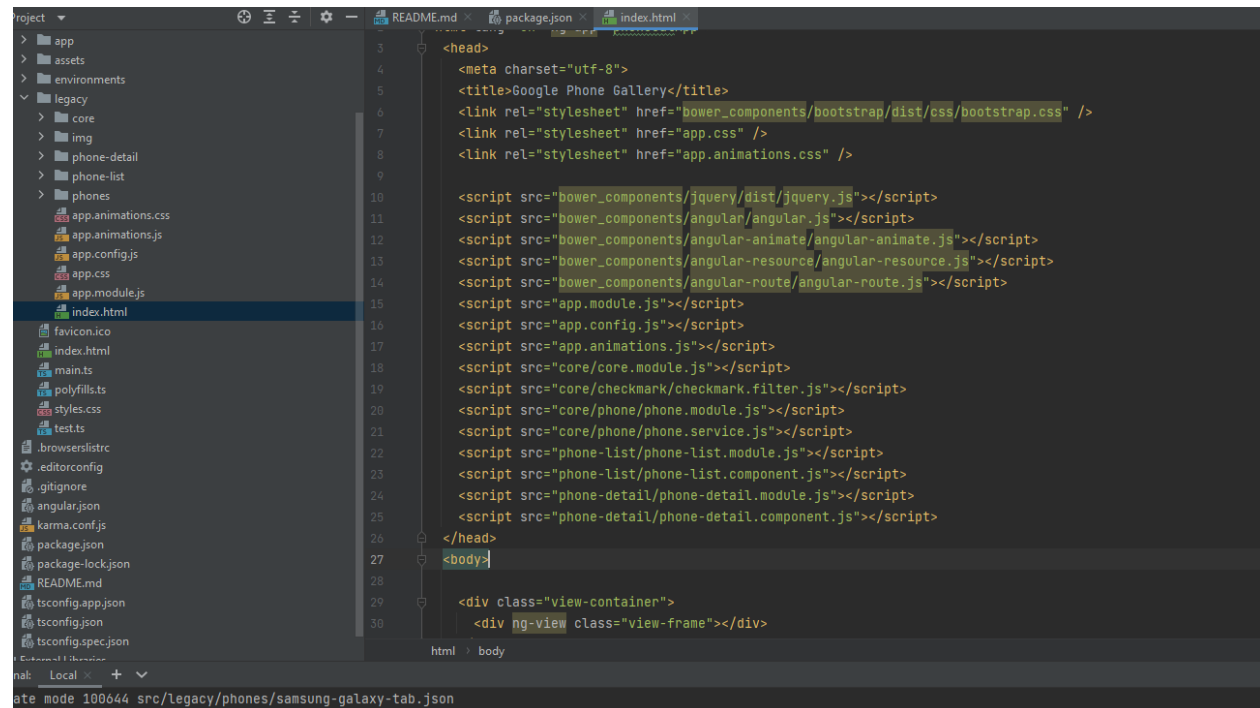
"zone.js": "~0.11.4",
"angular": "1.5.x",
"angular-animate": "1.5.x",
"angular-mocks": "1.5.x",
"angular-resource": "1.5.x",
"angular-route": "1.5.x",
"bootstrap": "3.3.x",
"jquery": "2.2.x"
},
"devDependencies": {
  "@angular-devkit/build-angular": "^14.2.7",
  "@angular/cli": "~14.2.7",
  "@angular/compiler-cli": "^14.2.0",
  "@types/jasmine": "~4.0.0",
  "jasmine-core": "~4.3.0",
  "karma": "~6.4.0",
  "karma-chrome-launcher": "~3.1.0",
  "karma-coverage": "~2.2.0",
  "karma-jasmine": "~5.1.0",
  "karma-jasmine-html-reporter": "~2.0.0",
  "typescript": "~4.7.2",
  "bower": "^1.7.7",
  "http-server": "^0.9.0",
  "karma-firefox-launcher": "^0.1.7"
}
}

Terminal: Local x + v
121 packages are looking for funding
run `npm fund` for details
9 vulnerabilities (3 moderate, 5 high, 1 critical)
To address all issues (including breaking changes), run:
npm audit fix --force
Run `npm audit` for details.
PS D:\Polytech\Touraine_Tech_2023\angular14-phonecat>
```

# On a tout pour faire fonctionner le legacy

# Que faire des scripts ? Et des css ?

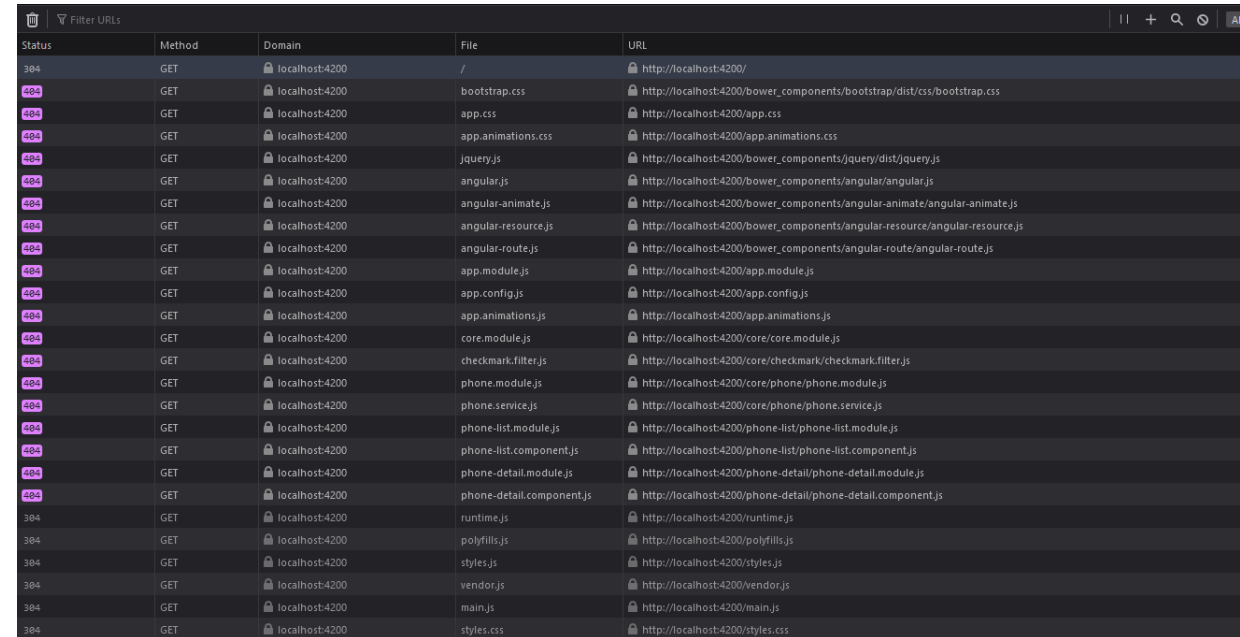
- Soit dans le index.html angular 14 (beurk ?)
- Soit dans le angular.json (better ?)
- Soit un barrel ?



```
3 <head>
4   <meta charset="utf-8">
5   <title>Google Phone Gallery</title>
6   <link rel="stylesheet" href="bower_components/bootstrap/dist/css/bootstrap.css" />
7   <link rel="stylesheet" href="app.css" />
8   <link rel="stylesheet" href="app.animations.css" />
9
10  <script src="bower_components/jquery/dist/jquery.js"></script>
11  <script src="bower_components/angular/angular.js"></script>
12  <script src="bower_components/angular-animate/angular-animate.js"></script>
13  <script src="bower_components/angular-resource/angular-resource.js"></script>
14  <script src="bower_components/angular-route/angular-route.js"></script>
15  <script src="app.module.js"></script>
16  <script src="app.config.js"></script>
17  <script src="app.animations.js"></script>
18  <script src="core/core.module.js"></script>
19  <script src="core/checkmark/checkmark.filter.js"></script>
20  <script src="core/phone/phone.module.js"></script>
21  <script src="core/phone/phone.service.js"></script>
22  <script src="phone-list/phone-list.module.js"></script>
23  <script src="phone-list/phone-list.component.js"></script>
24  <script src="phone-detail/phone-detail.module.js"></script>
25  <script src="phone-detail/phone-detail.component.js"></script>
26 </head>
27 <body>
28
29   <div class="view-container">
30     <div ng-view class="view-frame"></div>
31   </div>
32 </body>
```

# Au plus simple -> copier coller des scripts

- Que se passe il ?
- Ah c'est pas trouvé !
- Bon les scripts bower, vu que y'a plus bower c'est normal, c'est dans le node modules



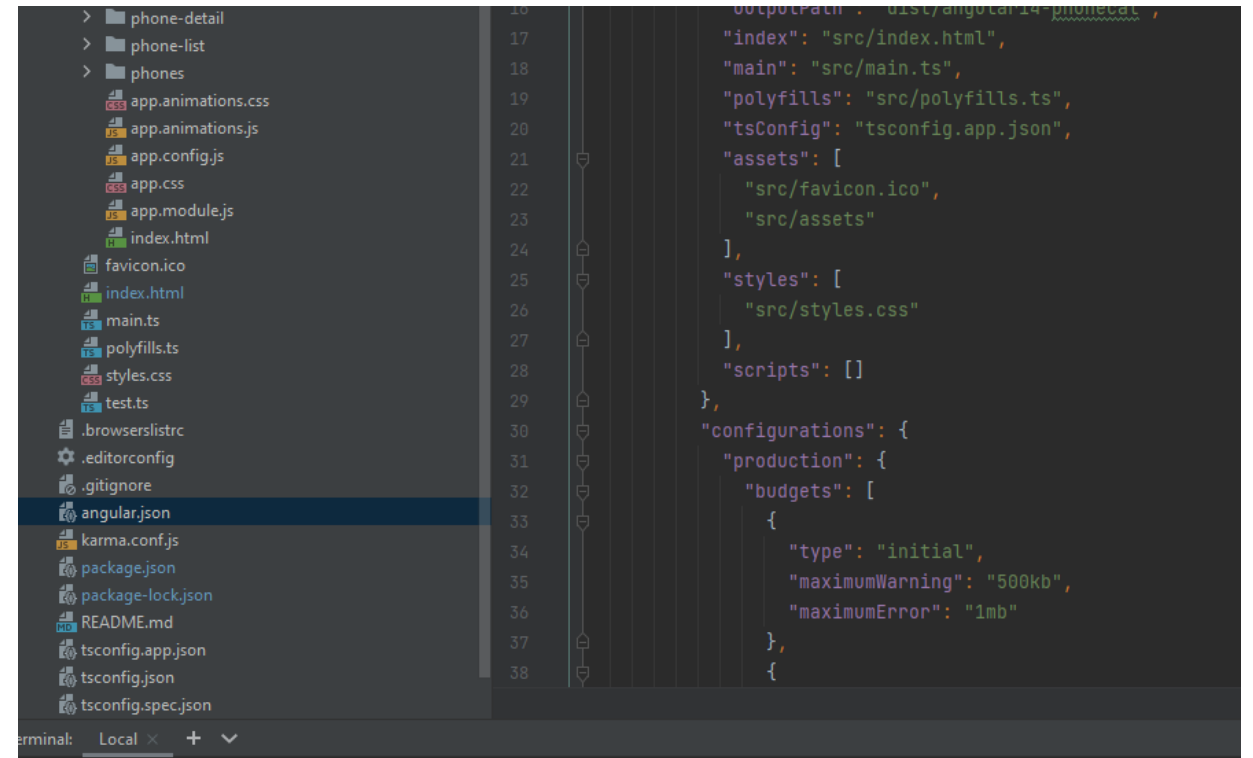
The screenshot shows a web browser's developer console with a list of 404 errors. The table has five columns: Status, Method, Domain, File, and URL. The errors are for various files and scripts, including bootstrap.css, app.css, app.animations.css, jquery.js, angular.js, angular-animate.js, angular-resource.js, angular-route.js, app.module.js, app.config.js, app.animations.js, core.module.js, checkmark.filter.js, phone.module.js, phone.service.js, phone-list.module.js, phone-list.component.js, phone-detail.module.js, phone-detail.component.js, runtime.js, polyfills.js, styles.js, vendor.js, main.js, and styles.css. The status for all errors is 404, and the method is GET. The domain is localhost:4200. The file column shows the relative path to the file, and the URL column shows the full URL.

Status	Method	Domain	File	URL
304	GET	localhost:4200	/	http://localhost:4200/
404	GET	localhost:4200	bootstrap.css	http://localhost:4200/bower_components/bootstrap/dist/css/bootstrap.css
404	GET	localhost:4200	app.css	http://localhost:4200/app.css
404	GET	localhost:4200	app.animations.css	http://localhost:4200/app.animations.css
404	GET	localhost:4200	jquery.js	http://localhost:4200/bower_components/jquery/dist/jquery.js
404	GET	localhost:4200	angular.js	http://localhost:4200/bower_components/angular/angular.js
404	GET	localhost:4200	angular-animate.js	http://localhost:4200/bower_components/angular-animate/angular-animate.js
404	GET	localhost:4200	angular-resource.js	http://localhost:4200/bower_components/angular-resource/angular-resource.js
404	GET	localhost:4200	angular-route.js	http://localhost:4200/bower_components/angular-route/angular-route.js
404	GET	localhost:4200	app.module.js	http://localhost:4200/app.module.js
404	GET	localhost:4200	app.config.js	http://localhost:4200/app.config.js
404	GET	localhost:4200	app.animations.js	http://localhost:4200/app.animations.js
404	GET	localhost:4200	core.module.js	http://localhost:4200/core/core.module.js
404	GET	localhost:4200	checkmark.filter.js	http://localhost:4200/core/checkmark/checkmark.filter.js
404	GET	localhost:4200	phone.module.js	http://localhost:4200/core/phone/phone.module.js
404	GET	localhost:4200	phone.service.js	http://localhost:4200/core/phone/phone.service.js
404	GET	localhost:4200	phone-list.module.js	http://localhost:4200/phone-list/phone-list.module.js
404	GET	localhost:4200	phone-list.component.js	http://localhost:4200/phone-list/phone-list.component.js
404	GET	localhost:4200	phone-detail.module.js	http://localhost:4200/phone-detail/phone-detail.module.js
404	GET	localhost:4200	phone-detail.component.js	http://localhost:4200/phone-detail/phone-detail.component.js
304	GET	localhost:4200	runtime.js	http://localhost:4200/runtime.js
304	GET	localhost:4200	polyfills.js	http://localhost:4200/polyfills.js
304	GET	localhost:4200	styles.js	http://localhost:4200/styles.js
304	GET	localhost:4200	vendor.js	http://localhost:4200/vendor.js
304	GET	localhost:4200	main.js	http://localhost:4200/main.js
304	GET	localhost:4200	styles.css	http://localhost:4200/styles.css



# Oui mais

- On ne charge pas comme un sale les librairies de ton projet par du script en angular 14
- On les mets au propres dans scripts



The screenshot shows an IDE with a file explorer on the left and a code editor on the right. The file explorer lists the following files and folders:

- phone-detail
- phone-list
- phones
  - app.animations.css
  - app.animations.js
  - app.config.js
  - app.css
  - app.module.js
  - index.html
- favicon.ico
- index.html
- main.ts
- polyfills.ts
- styles.css
- test.ts
- .browserslistrc
- .editorconfig
- .gitignore
- angular.json
- karma.conf.js
- package.json
- package-lock.json
- README.md
- tsconfig.app.json
- tsconfig.json
- tsconfig.spec.json

The code editor displays the content of the `angular.json` file:

```
16 "outputPath": "dist/angular14-phonetecat",
17 "index": "src/index.html",
18 "main": "src/main.ts",
19 "polyfills": "src/polyfills.ts",
20 "tsConfig": "tsconfig.app.json",
21 "assets": [
22   "src/favicon.ico",
23   "src/assets"
24 ],
25 "styles": [
26   "src/styles.css"
27 ],
28 "scripts": []
29 },
30 "configurations": {
31   "production": {
32     "budgets": [
33       {
34         "type": "initial",
35         "maximumWarning": "500kb",
36         "maximumError": "1mb"
37       },
38       {
```

# A mi chemin...

- On a pas fait les liens bower, mais testons déjà ça
- RIP ☹️

```
25     "styles": [  
26         "src/styles.css",  
27         "bower_components/bootstrap/dist/css/bootstrap.css",  
28         "src/legacy/app.css",  
29         "src/legacy/app.animations.css"  
30     ],  
31     "scripts": [  
32         "bower_components/jquery/dist/jquery.js",  
33         "bower_components/angular/angular.js",  
34         "bower_components/angular-animate/angular-animate.js",  
35         "bower_components/angular-resource/angular-resource.js",  
36         "bower_components/angular-route/angular-route.js",  
37         "src/legacy/app.module.js",  
38         "src/legacy/app.config.js",  
39         "src/legacy/app.animations.js",  
40         "src/legacy/core/core.module.js",  
41         "src/legacy/core/checkmark/checkmark.filter.js",  
42         "src/legacy/core/phone/phone.module.js",  
43         "src/legacy/core/phone/phone.service.js",  
44         "src/legacy/phone-list/phone-list.module.js",  
45         "src/legacy/phone-list/phone-list.component.js",  
46         "src/legacy/phone-detail/phone-detail.module.js",  
47         "src/legacy/phone-detail/phone-detail.component.js"  
48     ]
```

```
Error: Script file bower_components/jquery/dist/jquery.js does not exist.  
  at D:\Polytech\Touraine_Tech_2023\angular14-phonecat\node_modules\@angular-devkit\build-angular\src\webpack\utils\helpers.js:177:23  
  at Array.reduce (<anonymous>)  
  at globalScriptsByBundleName (D:\Polytech\Touraine_Tech_2023\angular14-phonecat\node_modules\@angular-devkit\build-angular\src\webpack\utils\helper  
  at getCommonConfig (D:\Polytech\Touraine_Tech_2023\angular14-phonecat\node_modules\@angular-devkit\build-angular\src\webpack\configs\common.js:100:  
PS D:\Polytech\Touraine_Tech_2023\angular14-phonecat>
```

```

<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Angular14Phonecat</title>
  <base href="/">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="icon" type="image/x-icon" href="favicon.ico">
</head>
<body>
  <app-root></app-root>
</body>
</html>

```

Project

node\_modules library root

src

app

assets

environments

legacy

core

img

phone-detail

phone-list

phones

app.animations.css

app.animations.js

app.config.js

app.css

app.module.js

index.html

favicon.ico

index.html

main.ts

polyfills.ts

styles.css

test.ts

.browserslistrc

README.md

package.json

legacy\index.html

src\index.html

angular.json

23

24

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36

37

38

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48

"src/assets"

],

"styles": [

"src/styles.css",

"node\_modules/bootstrap/dist/css/bootstrap.css",

"src/legacy/app.css",

"src/legacy/app.animations.css"

],

"scripts": [

"node\_modules/jquery/dist/jquery.js",

"node\_modules/angular/angular.js",

"node\_modules/angular-animate/angular-animate.js",

"node\_modules/angular-resource/angular-resource.js",

"node\_modules/angular-route/angular-route.js",

"src/legacy/app.module.js",

"src/legacy/app.config.js",

"src/legacy/app.animations.js",

"src/legacy/core/core.module.js",

"src/legacy/core/checkmark/checkmark.filter.js",

"src/legacy/core/phone/phone.module.js",

"src/legacy/core/phone/phone.service.js",

"src/legacy/phone-list/phone-list.module.js",

"src/legacy/phone-list/phone-list.component.js",

"src/legacy/phone-detail/phone-detail.module.js",

"src/legacy/phone-detail/phone-detail.component.js"

]

projects > angular14-phonecat > architect > build > options > scripts > 4

Terminal: Local

+ -

✓ Browser application bundle generation complete.

Initial Chunk Files | Names | Raw Size

vendor.js | vendor | 1.77 MB |

scripts.js | scripts | 1.63 MB |

styles.css, styles.js | styles | 351.00 kB |

polyfills.js | polyfills | 318.07 kB |

main.js | main | 48.07 kB |

runtime.js | runtime | 6.53 kB |

| Initial Total | 4.11 MB

Build at: 2022-10-27T15:13:59.676Z - Hash: 06745773abc0e012 - Time: 12051ms

- Avant / Après
- C'est dans scripts.js

Initial Chunk Files	Names	Raw Size
vendor.js	vendor	1.77 MB
polyfills.js	polyfills	318.07 kB
styles.css, styles.js	styles	210.10 kB
main.js	main	48.07 kB
runtime.js	runtime	6.53 kB

# Youhou on a packagé notre legacy...coucou JQuery !

The screenshot shows a web browser's developer tools with the 'Network' tab selected. A list of network requests is displayed on the left, with 'scripts.js' highlighted. The right pane shows the 'Response' tab for this request, displaying the jQuery library code. The response is truncated at the top, and the full payload is visible below.

Status	Method	Domain	File	URL	Initiator	Type	Transferred	Size
200	GET	localhost:4200	/	http://localhost:4200/	document	html	898 B	614 B
204	GET	localhost:4200	styles.css	http://localhost:4200/styles.css	stylesheet	css	cached	143.9...
204	GET	localhost:4200	runtime.js	http://localhost:4200/runtime.js	script	js	cached	6.69 kB
204	GET	localhost:4200	polyfills.js	http://localhost:4200/polyfills.js	script	js	cached	325.7...
204	GET	localhost:4200	styles.js	http://localhost:4200/styles.js	script	js	cached	215.5...
204	GET	localhost:4200	scripts.js	http://localhost:4200/scripts.js	script	js	cached	1.71 ...
204	GET	localhost:4200	vendor.js	http://localhost:4200/vendor.js	script	js	cached	1.86 ...
204	GET	localhost:4200	main.js	http://localhost:4200/main.js	script	js	cached	49.22...
201	GET	localhost:4200	ng-cli-ws	ws://localhost:4200/ng-cli-ws	polyfills.js:5503 (...)	websocket	129 B	0 B
200	GET	localhost:4200	favicon.ico	http://localhost:4200/favicon.ico	FaviconLoader.js...	image	cached	948 B

Response has been truncated

Response Payload

```
1  /*!
2   * jQuery JavaScript Library v2.2.4
3   * http://jquery.com/
4   *
5   * Includes Sizzle.js
6   * http://sizzlejs.com/
7   *
8   * Copyright jQuery Foundation and other contributors
9   * Released under the MIT license
10  * http://jquery.org/license
11  *
12  * Date: 2016-05-20T17:23Z
13  */
14
15  (function( global, factory ) {
16
17    if ( typeof module === "object" && typeof module.exports === "object" ) {
18      // For CommonJS and CommonJS-like environments where a proper `window`
19      // is present, execute the factory and get jQuery.
20      // For environments that do not have a `window` with a `document`
21      // (such as Node.js), expose a factory as module.exports.
22      // This accentuates the need for the creation of a real `window`.
23      // e.g. var jQuery = require("jquery")(window);
24      // See ticket #14549 for more info.
25      module.exports = global.document ?
26        factory( global, true ) :
27        function( w ) {
28          if ( !w.document ) {
29            throw new Error( "jQuery requires a window with a document" );
30          }
31          return factory( w );
32        };
33    } else {
34      factory( global );
35    }
36
37    // Pass this if window is not defined yet
38  }(typeof window !== "undefined" ? window : this, function( window, noGlobal ) {
39
40    // Support: Firefox 18+
41    // Can't be in strict mode, several libs including ASP.NET trace
42    // the stack via arguments.caller.caller and Firefox dies if
43    // you try to trace through "use strict" call chains. (#13335)
```

# On est bien avancé, c'est quoi la suite ?

- Là on a notre app angular 14, qui contient (au sens fichier) notre app legacy
- Là On bootstrap angular 14 (App component)

```
</head>
<body>
  <app-root></app-root>
</body>
</html>
```

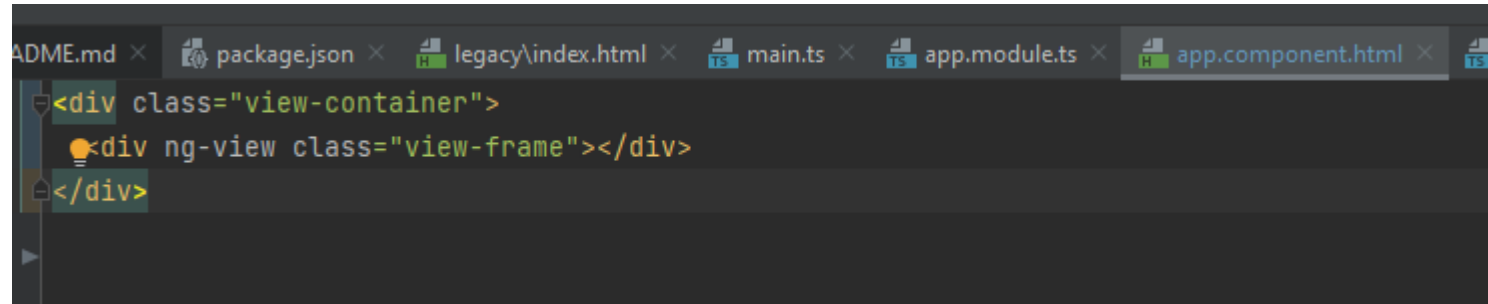
```
if (environment.production) {
  enableProdMode();
}

platformBrowserDynamic().bootstrapModule(AppModule)
  .catch(err => console.error(err));
```

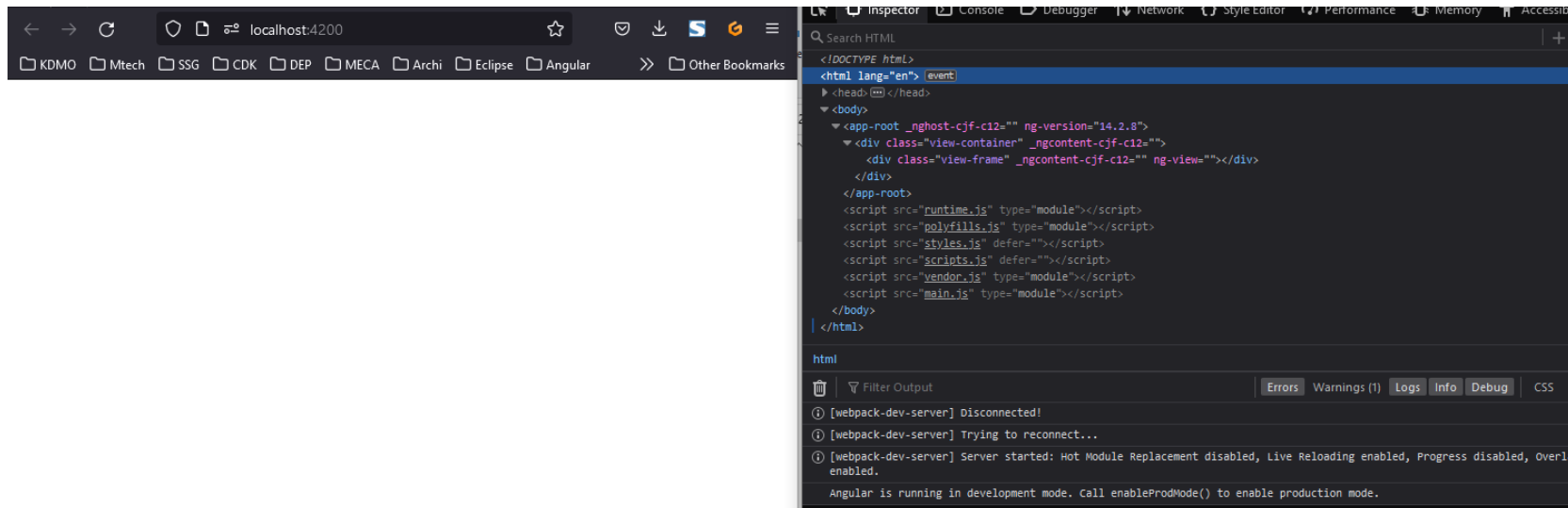
```
@NgModule({
  declarations: [
    AppComponent
  ],
  imports: [
    BrowserModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

# Faisons en sorte que AppComponent soit le point d'entrée du legacy

— Bof bof



```
<div class="view-container">
  <div ng-view class="view-frame"></div>
</div>
```



# On bootstrap le legacy, pour de vrai

```
ADME.md × package.json × legacy\index.html × app.module.ts × main.ts ×
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';

import { AppComponent } from './app.component';
import { UpgradeModule } from "@angular/upgrade/static";

@NgModule({
  declarations: [
    AppComponent
  ],
  imports: [
    BrowserModule,
    UpgradeModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

```
1 import { enableProdMode } from '@angular/core';
2 import { platformBrowserDynamic } from '@angular/platform-browser-dynamic';
3
4 import { AppModule } from './app/app.module';
5 import { environment } from './environments/environment';
6 import { UpgradeModule } from "@angular/upgrade/static";
7
8 if (environment.production) {
9   enableProdMode();
10 }
11
12 platformBrowserDynamic().bootstrapModule(AppModule)
13   .then(platformRef => {
14     // Use the upgrade module to bootstrap the hybrid
15     const upgrade = platformRef.injector.get(UpgradeModule) as UpgradeModule;
16     upgrade.bootstrap(document.body, modules: ['phonecatApp'], config: {strictDi: false});
17   }).catch(err => console.error(err));
18
```

- On commence à avoir des choses angular JS !!
- Mais toujours la page blanche

```
<!DOCTYPE html>
<html lang="en">
  <head> </head>
  <body class="ng-scope">
    <app-root _ngghost-xwk-c12="" ng-version="14.2.8">
      <div class="view-container" _ngcontent-xwk-c12="">
        <!--ngView:-->
        <div class="view-frame ng-scope" _ngcontent-xwk-c12="" ng-view="">
          <phone-list class="ng-scope"></phone-list>
        </div>
      </div>
    </app-root>
    <script src="runtime.js" type="module"></script>
    <script src="polyfills.js" type="module"></script>
    <script src="styles.js" defer=""></script>
    <script src="scripts.js" defer=""></script>
    <script src="vendor.js" type="module"></script>
    <script src="main.js" type="module"></script>
  </body>
</html>
```

html

Filter Output

Errors Warnings (2) Logs Info Debug CSS XH

[webpack-dev-server] Disconnected!

[webpack-dev-server] Trying to reconnect...

[webpack-dev-server] Server started: Hot Module Replacement disabled, Live Reloading enabled, Progress disabled, Overlay enabled.

Angular is running in development mode. Call enableProdMode() to enable production mode.

GET http://localhost:4200/phone-list/phone-list.template.html [HTTP/1.1

Error: [\$compile:tpload] Failed to load template: phone-list/phone-list.template.html (HTTP status: 404 Not Found) http://errors.angularjs.org/1.5.11/\$compile/tpLoad?p0=phone-List%2Fphone-List.template.html&p1=404&p2=Not%20Found

minErr/@http://localhost:4200/scripts.js:9883:12

handleError@http://localhost:4200/scripts.js:29576:17

processQueue@http://localhost:4200/scripts.js:26511:28

qFactory/scheduleProcessQueue/@http://localhost:4200/scripts.js:26527:39

\$eval@http://localhost:4200/scripts.js:27809:28

\$digest@http://localhost:4200/scripts.js:27623:31

\$apply@http://localhost:4200/scripts.js:27917:24

done@http://localhost:4200/scripts.js:21897:47

completeRequest@http://localhost:4200/scripts.js:22106:15

requestLoaded@http://localhost:4200/scripts.js:22034:24

wrapFn@http://localhost:4200/polyfills.js:8651:35

invokeTask@http://localhost:4200/polyfills.js:8210:171

onInvokeTask@http://localhost:4200/vendor.js:49462:25

invokeTask@http://localhost:4200/polyfills.js:8210:54

runTask@http://localhost:4200/polyfills.js:7971:37

invokeTask@http://localhost:4200/polyfills.js:8302:26

invokeTask@http://localhost:4200/polyfills.js:9729:12

globalCallback@http://localhost:4200/polyfills.js:9779:33

globalZoneAwareCallback@http://localhost:4200/polyfills.js:9801:12

EventListener.prototype.handleEvent\*customScheduleGlobal@http://localhost:4200/polyfills.js:9912:37

scheduleTask@http://localhost:4200/polyfills.js:8198:16

onScheduleTask@http://localhost:4200/polyfills.js:8098:61

scheduleTask@http://localhost:4200/polyfills.js:8193:43



# On a load le js, mais pas les templates

- Google et stackoverflow is your friend :

<https://stackoverflow.com/questions/59672988/how-to-load-templates-in-angular-hybrid-application>

- Try downgrading @angular-devkit/build-angular to version 0.802.2.  
Since 0.803.0 it shows [object Module]
- Or you can try completely different approach - instead of using **template: require()** you can use templateUrl but then you have to copy html files to destination folder.
- To do that, you have to change angular.json and set assets

```
{  
  "glob": "**/*.html",  
  "input": "apps/lopa/src/app-ajs",  
  "output": "/app-ajs"  
},
```

And in your component use full path like this:

angular14-phonecat / angular.json

Project

- core
- img
- phone-detail
- phone-list
  - phone-list.component.js
  - phone-list.component.spec.js
  - phone-list.module.js
  - phone-list.template.html
- phones
  - app.animations.css
  - app.animations.js
  - app.config.js
  - app.css
  - app.module.js
  - index.html
  - favicon.ico
  - index.html
  - main.ts
  - polyfills.ts
  - styles.css
  - test.ts
- .browserslistrc
- .editorconfig
- .gitignore
- angular.json
- karma.conf.js
- package.json
- package-lock.json

```
16  "outputPath": "dist/angular14-phonecat",
17  "index": "src/index.html",
18  "main": "src/main.ts",
19  "polyfills": "src/polyfills.ts",
20  "tsConfig": "tsconfig.app.json",
21  "assets": [
22    "src/favicon.ico",
23    "src/assets",
24    {
25      "glob": "**/*.html",
26      "input": "src/legacy",
27      "output": "/legacy"
28    }
29  ],
30  "styles": [
31    "src/styles.css",
32    "node_modules/bootstrap/dist/css/bootstrap.css",
33    "src/legacy/app.css",
34    "src/legacy/app.animations.css"
35  ],
36  "scripts": [
37    "node_modules/jquery/dist/jquery.js",
38    "node_modules/angular/angular.js",
39  ]
```

projects > angular14-phonecat > architect > build > options > assets > 2 > output

terminal: Local

```
1 'use strict';
2
3 // Register `phoneList` component, along with its associated cont
4 angular.
5 module( name: 'phoneList').
6   component('phoneList', {
7     templateUrl: 'legacy/phone-list/phone-list.template.html',
8     controller: ['Phone',
9       function PhoneListController(Phone) {
10         this.phones = Phone.query();
11         this.orderProp = 'age';
12       }
13     ]
14   });
15
```

# La page n'est plus blanche !!

Search:

Sort by: Newest ▼

The screenshot shows the Chrome Developer Tools interface for the application 'Angular14Phonecat' at the URL 'http://localhost:4200/#/phones'. The Network tab is active, displaying a list of requests. The status of each request is shown in a colored box: 304 (grey), 200 (green), 101 (blue), and 404 (purple). The 404 error for 'phones.json' is highlighted in red.

Status	Meth...	Domain	File	URL	Initiator	T...	Transferred	Size
304	GET	localhost:4...	polyfills.js	http://localhost:4200/polyfills.js	script	js	cached	0 B
304	GET	localhost:4...	styles.js	http://localhost:4200/styles.js	script	js	cached	0 B
200	GET	localhost:4...	scripts.js	http://localhost:4200/scripts.js	script	js	1.71 MB	1.71...
304	GET	localhost:4...	vendor.js	http://localhost:4200/vendor.js	script	js	cached	0 B
304	GET	localhost:4...	main.js	http://localhost:4200/main.js	script	js	cached	0 B
101	GET	localhost:4...	ng-cli-ws	ws://localhost:4200/ng-cli-ws	polyfills.js:5503...	p...	129 B	0 B
200	GET	localhost:4...	phone-list.tem	http://localhost:4200/legacy/phone-list/phone-list.te...	polyfills.js:1097...	h...	1.20 kB (raced)	911 B
200	GET	localhost:4...	favicon.ico	http://localhost:4200/favicon.ico	FaviconLoader....	v...	cached	948 B
404	GET	localhost:4...	phones.json	http://localhost:4200/phones/phones.json	polyfills.js:1097...	h...	461 B	157 B

Summary: 41 requests, 5.56 MB / 1.71 MB transferred, Finish: 5.43 min, DOMContentLoaded: 299 ms, load: 417 ms.

Console messages:

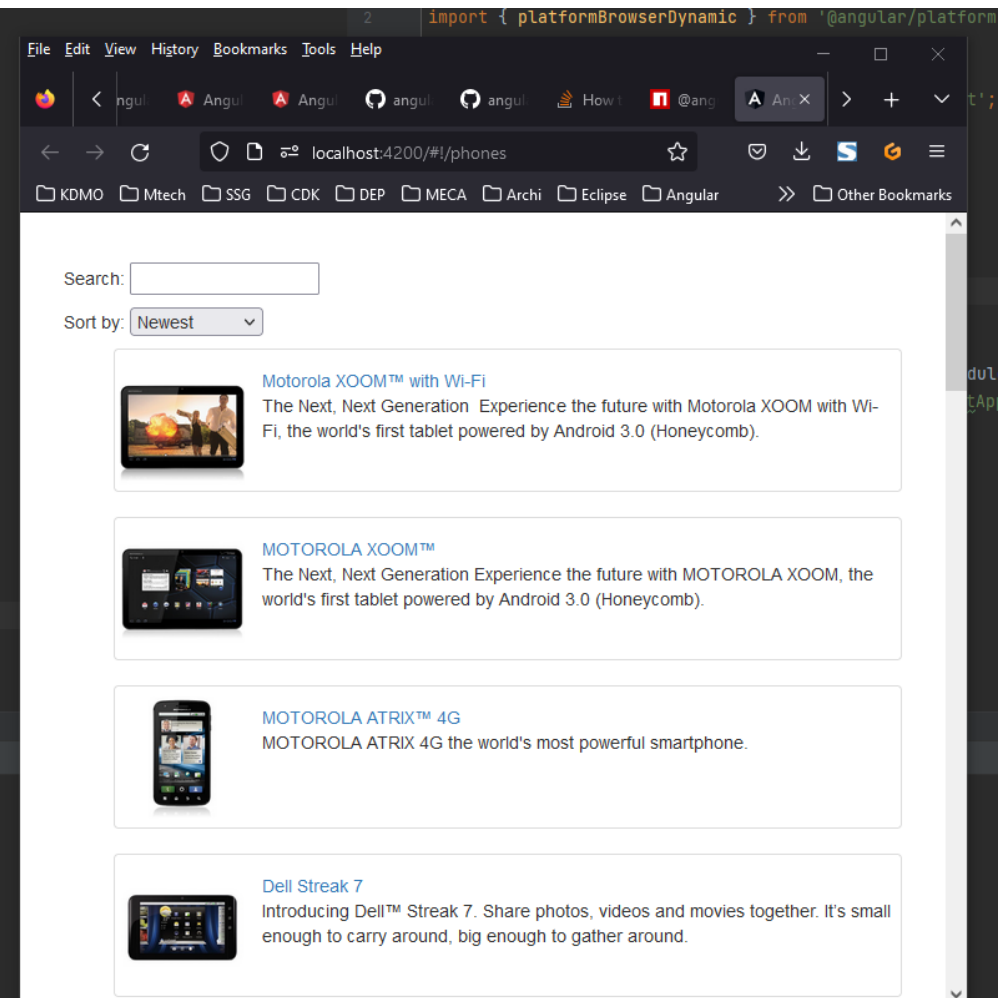
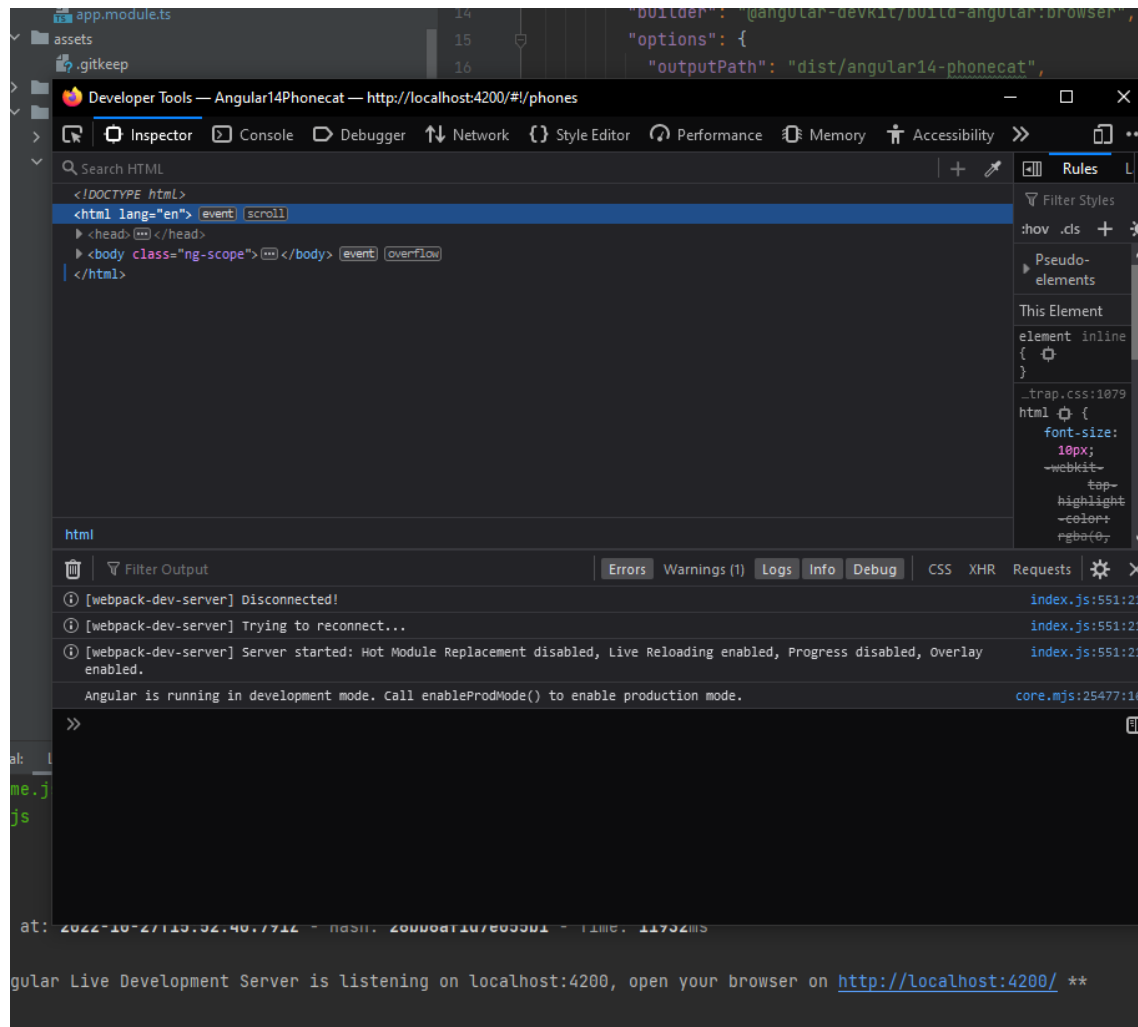
- [webpack-dev-server] Server started: Hot Module Replacement disabled, Live Reloading enabled, Progress disabled, Overlay enabled. (index.js:551:21)
- Angular is running in development mode. Call enableProdMode() to enable production mode. (core.mjs:25477:16)
- GET http://localhost:4200/phones/phones.json [HTTP/1.1 404 Not Found 8ms]

# Ajout des assets manquants

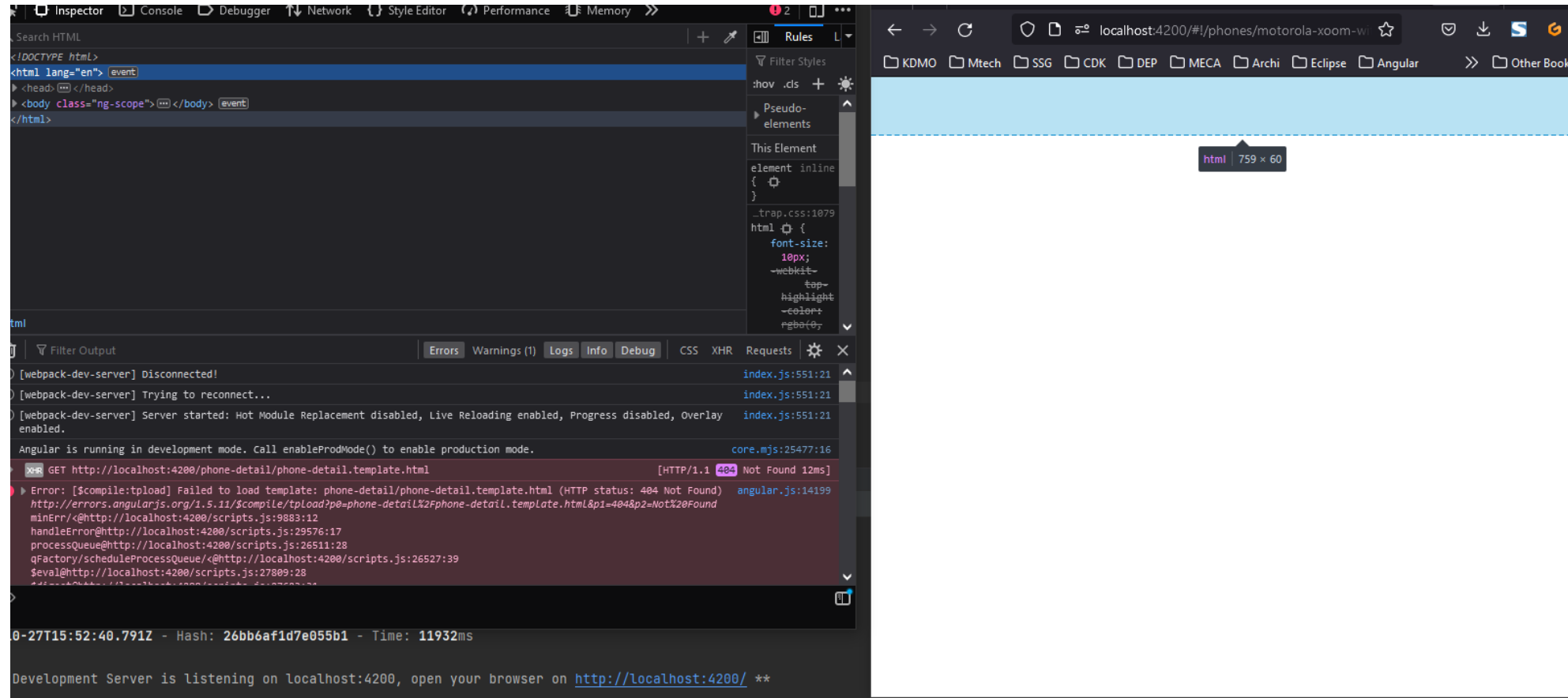
The screenshot displays a development environment with an IDE on the left and a web browser on the right. The IDE shows the configuration of an Angular application, specifically the `assets` array in `tsconfig.app.json`. The configuration includes:

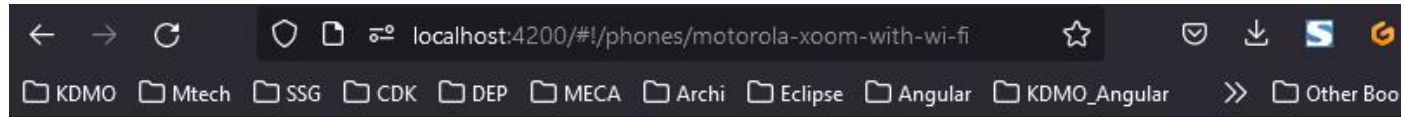
```
"outputPath": "dist/angular14-phonecat",  
"index": "src/index.html",  
"main": "src/main.ts",  
"polyfills": "src/polyfills.ts",  
"tsConfig": "tsconfig.app.json",  
"assets": [  
  "src/favicon.ico",  
  "src/assets",  
  {  
    "glob": "**/*.html",  
    "input": "src/legacy",  
    "output": "/legacy"  
  },  
  {  
    "glob": "**/*.json",  
    "input": "src/legacy/p",  
    "output": "/phones"  
  }  
],  
"styles": [  
  "src/styles.css",  
  "node_modules/bootstrap/...",  
  "src/legacy/app.css",  
  "src/legacy/app.animation..."  
]
```

The web browser on the right shows the application running at `localhost:4200/#/phones`. The page displays a list of products, including Motorola XOOM™ with Wi-Fi, MOTOROLA XOOM™, MOTOROLA ATRIX™ 4G, and Dell Streak 7. The browser's developer tools are open, showing the HTML structure and the console output, which includes multiple GET requests to `http://localhost:4200/img/phones/`.



# Fix template url et relance le serveur





## Motorola XOOM™ with Wi-Fi

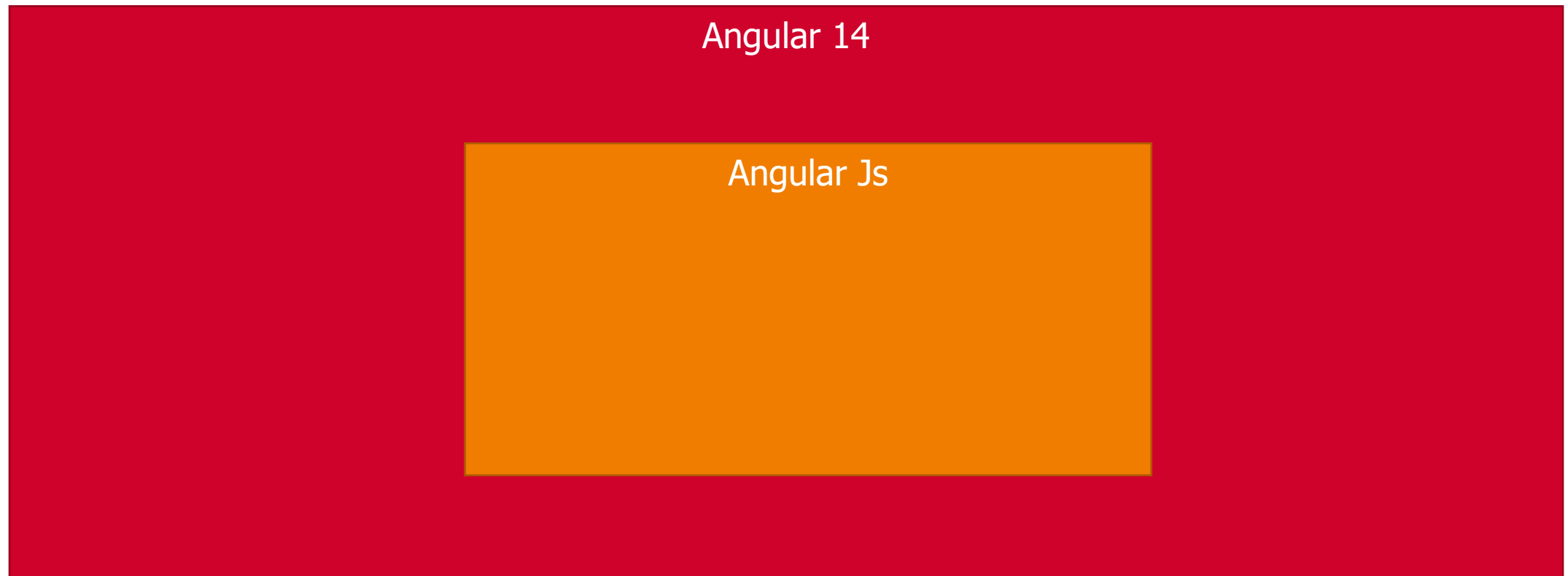
Motorola XOOM with Wi-Fi has a super-powerful dual-core processor and Android™ 3.0 (Honeycomb) — the Android platform designed specifically for tablets. With its 10.1-inch HD widescreen display, you'll enjoy HD video in a thin, light, powerful and upgradeable tablet.





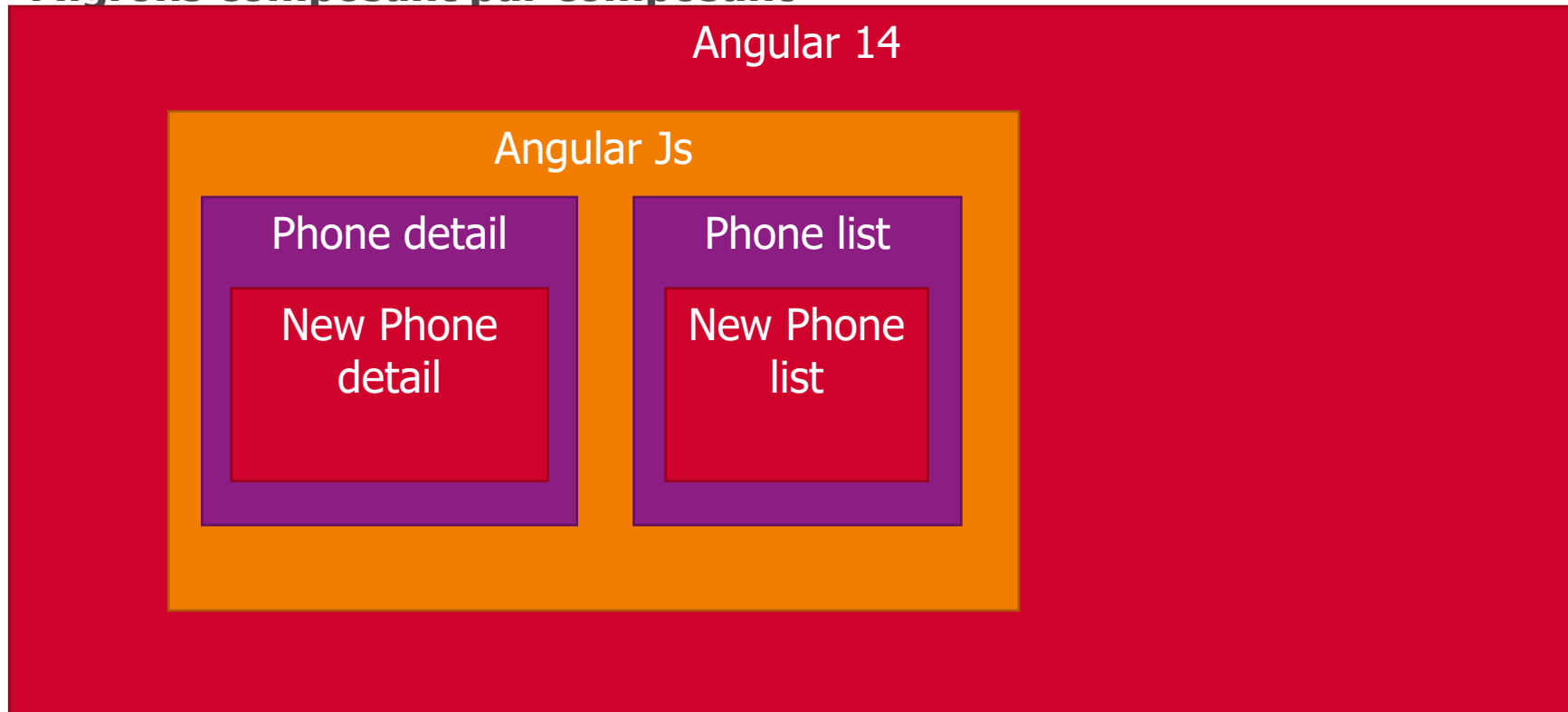
# And voila !

## — Angular 14 bootstrap de l'angular JS

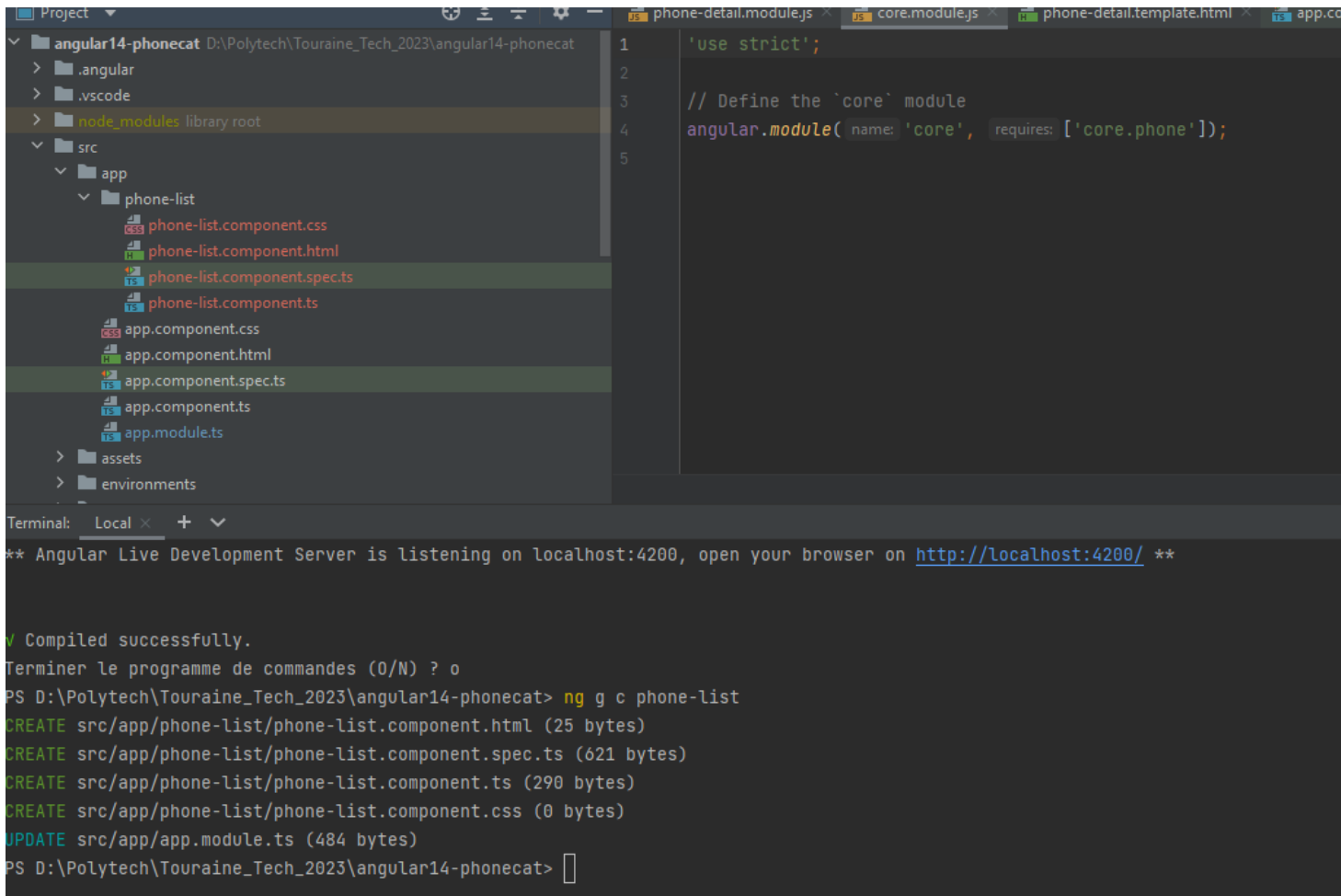


# La Suite

## — Migrons composant par composant



# Nouveau composant phone-list



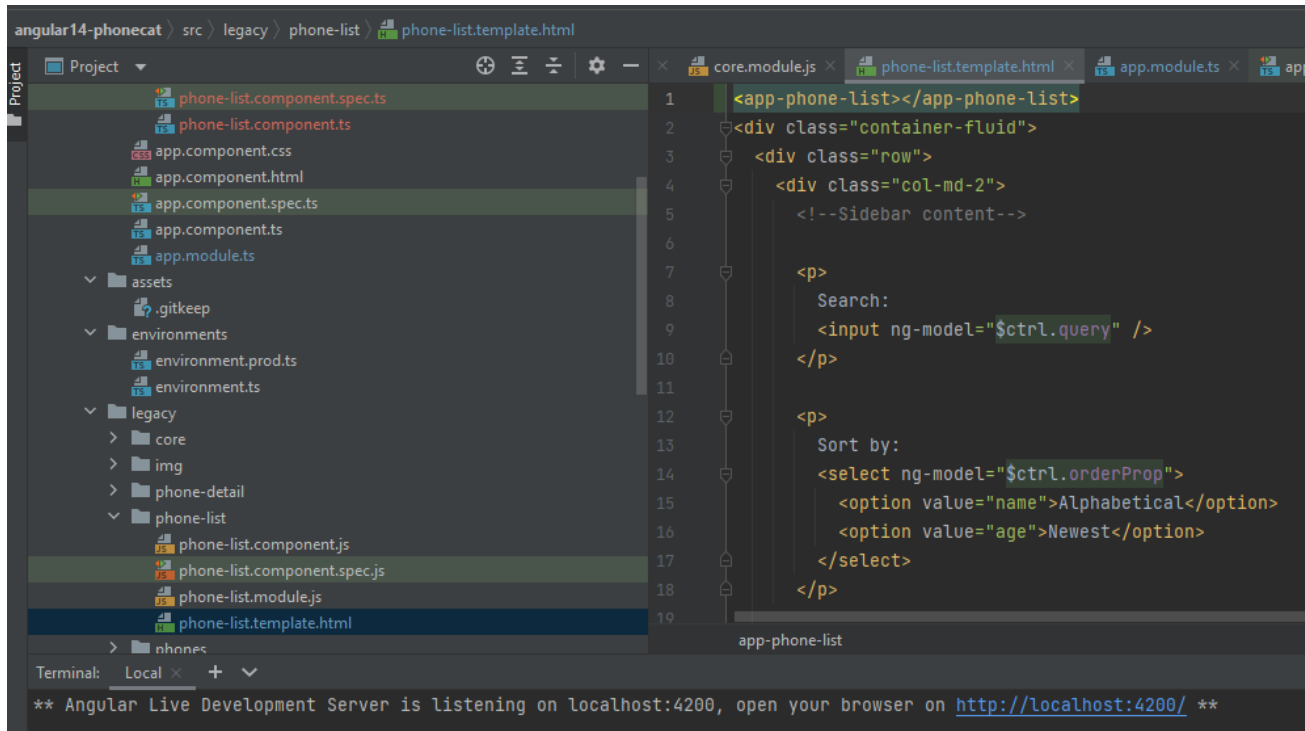
The screenshot shows the Visual Studio Code interface with the following elements:

- Explorer Panel:** Displays the project structure for 'angular14-phonedcat'. The 'src/app' directory is expanded, showing the newly created 'phone-list' component files: 'phone-list.component.css', 'phone-list.component.html', 'phone-list.component.spec.ts', and 'phone-list.component.ts'. Other files like 'app.component.\*' and 'app.module.ts' are also visible.
- Editor Panel:** Shows the 'core.module.ts' file with the following code:

```
1 'use strict';  
2  
3 // Define the 'core' module  
4 angular.module( name: 'core', requires: ['core.phone']);  
5
```
- Terminal Panel:** Shows the output of the Angular CLI command 'ng g c phone-list'. The message indicates that the Angular Live Development Server is listening on localhost:4200. The command output shows the successful creation of the component files:

```
** Angular Live Development Server is listening on localhost:4200, open your browser on http://localhost:4200/ **  
  
✓ Compiled successfully.  
Terminer le programme de commandes (O/N) ? o  
PS D:\Polytech\Touraine_Tech_2023\angular14-phonedcat> ng g c phone-list  
CREATE src/app/phone-list/phone-list.component.html (25 bytes)  
CREATE src/app/phone-list/phone-list.component.spec.ts (621 bytes)  
CREATE src/app/phone-list/phone-list.component.ts (290 bytes)  
CREATE src/app/phone-list/phone-list.component.css (0 bytes)  
UPDATE src/app/app.module.ts (484 bytes)  
PS D:\Polytech\Touraine_Tech_2023\angular14-phonedcat>
```

# Ajout du nouveau composant dans le html du legacy



The screenshot shows an IDE with the following components:

- Project Explorer:** Displays the file structure of the 'angular14-phonocat' project. The 'legacy' folder is expanded, showing subfolders like 'core', 'img', 'phone-detail', and 'phone-list'. The 'phone-list' folder is selected, and its files are visible.
- Editor:** The 'phone-list.template.html' file is open. It contains the following HTML code:

```
1 <app-phone-list></app-phone-list>
2 <div class="container-fluid">
3   <div class="row">
4     <div class="col-md-2">
5       <!--Sidebar content-->
6     </div>
7     <div class="col-md-10">
8       <p>
9         Search:
10        <input ng-model="$ctrl.query" />
11      </p>
12      <p>
13        Sort by:
14        <select ng-model="$ctrl.orderProp">
15          <option value="name">Alphabetical</option>
16          <option value="age">Newest</option>
17        </select>
18      </p>
19    </div>
20  </div>
21 </div>
```
- Terminal:** Displays the message: "\*\* Angular Live Development Server is listening on localhost:4200, open your browser on <http://localhost:4200/> \*\*"

# On « downgrade » le composant Angular 14

## — La doc dit qu'il faut modifier le module principal du legacy

- Et si j'ai envie de faire ça du côté d'Angular 14 ?
- On a besoin des @types pour le ts

```
zone.js : "0.11.4",  
"angular": "1.5.x",  
"@types/angular": "1.5.x",  
"angular-animate": "1.5.x".
```

app.module.ts

```
import { HeroDetailComponent } from './hero-detail.component';  
  
/* . . . */  
  
import { downgradeComponent } from '@angular/upgrade/static';  
  
angular.module('heroApp', [])  
  .directive(  
    'heroDetail',  
    downgradeComponent({ component: HeroDetailComponent }) as  
    angular.IDirectiveFactory  
  );
```

```
main.ts x angular.json x package.json x README.md x tsconfig.json x phone-list.component.css x phone-list.component.spec.ts x phone-list.com  
1 import { enableProdMode } from '@angular/core';  
2 import { platformBrowserDynamic } from '@angular/platform-browser-dynamic';  
3 import { AppModule } from './app/app.module';  
4 import { environment } from './environments/environment';  
5 import { UpgradeModule, downgradeComponent } from '@angular/upgrade/static';  
6 import { PhoneListComponent } from './app/phone-list/phone-list.component';  
7 import 'angular';  
8 if (environment.production) {  
9   enableProdMode();  
10 }  
11 declare const angular: angular.IAngularStatic;  
12 interface DowngradeComponent {  
13   alias: string;  
14   ngComponent: any;  
15 }  
16  
17 const ngDowngradeComponents: ReadonlyArray<DowngradeComponent> = [  
18   // alias must match selector name as CamelCase  
19   // otherwise angularjs won't load them  
20   {alias: 'appPhoneList', ngComponent: PhoneListComponent},  
21 ];  
22  
23 ngDowngradeComponents.forEach( callbackfn: dgComponent =>  
24   angular  
25     .module( name: 'phonecatApp')  
26     .directive(dgComponent.alias, downgradeComponent( info: {component: dgComponent.ngComponent}) as angular.IDirectiveFactory)  
27 );
```

# Composant Angular OK !


← → ↻ 🔒 📄 📏 localhost:4200/#!/phones ☆ 📧 ⬇️ 🆕 🔄 ☰

📁 KDMO 📁 Mtech 📁 SSG 📁 CDK 📁 DEP 📁 MECA 📁 Archi 📁 Eclipse 📁 Angular 📁 KDMO\_Angular 📁 Formations 📁 VVV >> 📁 Other Bookmarks


phone-list works!

Search:


Sort by: Newest ▾



**Motorola XOOM™ with Wi-Fi**  
The Next, Next Generation Experience the future with Motorola XOOM with Wi-Fi, the world's first tablet powered by Android 3.0 (Honeycomb).



**MOTOROLA XOOM™**  
The Next, Next Generation Experience the future with MOTOROLA XOOM, the world's first tablet powered by Android 3.0 (Honeycomb).



**MOTOROLA ATRIX™ 4G**  
MOTOROLA ATRIX 4G the world's most powerful smartphone.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <!-- ngView:-->
    <div class="view-container">
      <div class="view-frame ng-scope">
        <phone-list class="ng-scope ng-isolate-scope">
          <app-phone-list _ngcontent-xln-c14="">
            <p _ngcontent-xln-c14="">phone-list works!</p>
          </app-phone-list>
        </div>
      </div>
    </div>
  </app-root>
  <script src="runtime.js" type="module"></script>
  <script src="polyfills.js" type="module"></script>
  <script src="styles.js" defer=""></script>
  <script src="scripts.js" defer=""></script>
  <script src="vendor.js" type="module"></script>
  <script src="main.js" type="module"></script>
</html>
```

🔍 Filter Output Errors Warnings

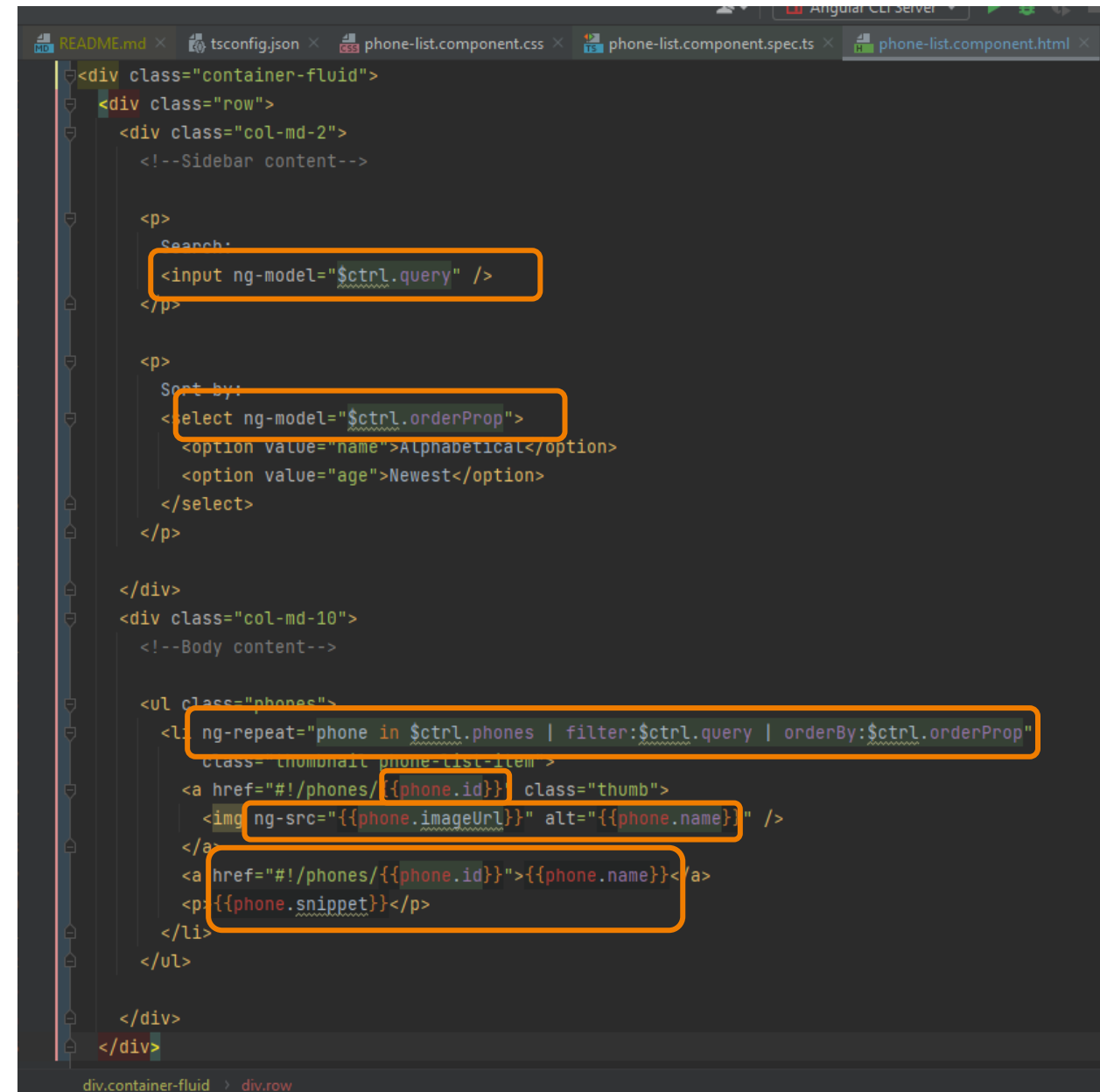
🔔 [webpack-dev-server] Server started: Hot Module Replacement disabled, Live Reloading Overlay enabled.

⚠️ WARNING: Tried to load angular more than once.

Angular is running in development mode. Call enableProdMode() to enable production mode.

# Et là c'est à la mimine qu'on migre

- Copier coller le html dans le nouveau composant
- Adapter les directives
- Injection de dépendances/service,etc.



```

<div class="container-fluid">
  <div class="row">
    <div class="col-md-2">
      <!--Sidebar content-->

      <p>
        Search:
        <input ng-model="$ctrl.query" />
      </p>

      <p>
        Sort by:
        <select ng-model="$ctrl.orderProp">
          <option value="name">Alphabetical</option>
          <option value="age">Newest</option>
        </select>
      </p>
    </div>
    <div class="col-md-10">
      <!--Body content-->

      <ul class="phones">
        <li ng-repeat="phone in $ctrl.phones | filter:$ctrl.query | orderBy:$ctrl.orderProp"
          class="thumbnail phone-list-item">
          <a href="#!/phones/{{phone.id}}" class="thumb">
            
          </a>
          <a href="#!/phones/{{phone.id}}">{{phone.name}}</a>
          <p>{{phone.snippet}}</p>
        </li>
      </ul>
    </div>
  </div>
</div>

```

# Injection de service legacy dans le composant v14

```
phone.service.spec.js  phone.module.js  app.module.ts  phone-list.module.js  phone-list.component.spec.js
1 import { Injectable, NgModule } from '@angular/core';
2 import { BrowserModule } from '@angular/platform-browser';
3
4 import { AppComponent } from './app.component';
5 import { UpgradeModule } from "@angular/upgrade/static";
6 import { PhoneListComponent } from './phone-list/phone-list.component';
7 import { FormsModule } from "@angular/forms";
8
9 @Injectable()
10 export abstract class PhoneService {
11   abstract query(): any;
12 }
13
14 @NgModule({
15   declarations: [
16     AppComponent,
17     PhoneListComponent
18   ],
19   imports: [
20     BrowserModule,
21     UpgradeModule,
22     FormsModule
23   ],
24   providers: [
25     {
26       provide: PhoneService, useFactory: (i: any) => i.get('Phone'), deps: ['$injector']
27     },
28   ],
29   bootstrap: [AppComponent]
30 })
31 export class AppModule { }
```

```
4 @Component({
5   selector: 'app-phone-list',
6   templateUrl: './phone-list.component.html',
7   styleUrls: ['./phone-list.component.css']
8 })
9 export class PhoneListComponent implements OnInit {
10   query: any;
11   orderProp="age";
12   phones: {id:string, name:string, imageUrl:string, snippet:string}[] = [];
13
14   constructor(private phoneService:PhoneService) { }
15
16   ngOnInit(): void {
17     this.phones = this.phoneService.query();
18   }
19 }
20
21 |
```



# Ça fonctionne, plus que les pipes

— RIP ☹️

— <https://v9.angular.io/guide/pipes#appendix-no-filterpipe-or-orderbypipe>

## Appendix: No *FilterPipe* or *OrderByPipe*

Angular doesn't provide pipes for filtering or sorting lists. Developers familiar with AngularJS know these as `filter` and `orderBy`. There are no equivalents in Angular.

This isn't an oversight. Angular doesn't offer such pipes because they perform poorly and prevent aggressive minification. Both `filter` and `orderBy` require parameters that reference object properties. Earlier in this page, you learned that such pipes must be [impure](#) and that Angular calls impure pipes in almost every change-detection cycle.

Filtering and especially sorting are expensive operations. The user experience can degrade severely for even moderate-sized lists when Angular calls these pipe methods many times per second. `filter` and `orderBy` have often been abused in AngularJS apps, leading to complaints that Angular itself is slow. That charge is fair in the indirect sense that AngularJS prepared this performance trap by offering `filter` and `orderBy` in the first place.

The minification hazard is also compelling, if less obvious. Imagine a sorting pipe applied to a list of heroes. The list might be sorted by `hero.name` and `planet` of origin properties in the following way:

```
<!-- NOT REAL CODE! -->
<div *ngFor="let hero of heroes | orderBy:'name,planet'"></div>
```

You identify the sort fields by text strings, expecting the pipe to reference a property value by indexing (such as `hero['name']`). Unfortunately, aggressive minification manipulates the `Hero` property names so that `Hero.name` and `Hero.planet` become something like `Hero.a` and `Hero.b`. Clearly `hero['name']` doesn't work.

While some may not care to minify this aggressively, the Angular product shouldn't prevent anyone from minifying aggressively. Therefore, the Angular team decided that everything Angular provides will minify safely.

The Angular team and many experienced Angular developers strongly recommend moving filtering and sorting logic into the component itself. The component can expose a `filteredHeroes` or `sortedHeroes` property and take control over when and how often to execute the supporting logic. Any capabilities that you would have put in a pipe and shared across the app can be written in a filtering/sorting service and injected into the component.

If these performance and minification considerations don't apply to you, you can always create your own such pipes (similar to the [FlyingHeroesPipe](#)) or find them in the community.

# Liens/Sources

- <https://angular.io/guide/upgrade>
- <https://github.com/johnpapa/angular-styleguide/blob/master/a1/i18n/fr-FR.md>

# 04

## Faisabilité

EN VRAI

# Il s'en passe des choses en 7 ans

## — Sortir le Front de son Monolithe

- └ « juste » un dossier ?
- └ Il faut revoir le build ?



.git	21/02/2022 09:37	Dossier de fichiers
.idea	23/02/2022 08:49	Dossier de fichiers
.mvn	08/02/2022 13:27	Dossier de fichiers
.settings	04/02/2022 11:56	Dossier de fichiers
agirs_batch	07/02/2022 18:18	Dossier de fichiers
agirs_common_business	21/02/2022 10:10	Dossier de fichiers
agirs_common_domain	21/02/2022 10:07	Dossier de fichiers
agirs_common_model	21/02/2022 10:12	Dossier de fichiers
agirs_common_security	07/02/2022 18:18	Dossier de fichiers
agirs_common_tech	21/02/2022 10:06	Dossier de fichiers
agirs_common_test	21/02/2022 10:06	Dossier de fichiers
agirs_common_ws_client	21/02/2022 10:08	Dossier de fichiers
agirs_docasante	21/02/2022 10:10	Dossier de fichiers
agirs_parametrages	21/02/2022 10:08	Dossier de fichiers
agirs_perfs	07/02/2022 18:18	Dossier de fichiers
agirs_sel	07/02/2022 18:18	Dossier de fichiers
agirs_sel_client	21/02/2022 10:09	Dossier de fichiers
agirs_tools	04/02/2022 11:29	Dossier de fichiers
agirs_web	21/02/2022 10:12	Dossier de fichiers
agirs_ws	07/02/2022 18:18	Dossier de fichiers
agirs_ws_audio	07/02/2022 18:18	Dossier de fichiers
agirs_ws_opt	07/02/2022 18:18	Dossier de fichiers
agirs_ws_qualite	07/02/2022 18:18	Dossier de fichiers
agirs_ws_recherche_beneficiaire	07/02/2022 18:18	Dossier de fichiers
agirs_ws_tpg	07/02/2022 18:18	Dossier de fichiers
agirs_ws_tpg_client	21/02/2022 10:09	Dossier de fichiers
agirs_ws_valorisation	07/02/2022 18:18	Dossier de fichiers
.gitignore	04/02/2022 11:28	Document texte
.project	04/02/2022 11:56	Fichier PROJECT
mvnw	02/02/2021 15:24	Fichier
mvnw.cmd	02/02/2021 15:24	Script de comman...
pom.xml	07/02/2022 18:18	Document XML
README.md	04/02/2022 11:28	Fichier MD

Nom	Modifié le	Type	Taille
.idea	18/02/2022 10:26	Dossier de fichiers	
.jhipster	04/02/2022 11:29	Dossier de fichiers	
.settings	08/02/2022 13:25	Dossier de fichiers	
.tmp	08/02/2022 11:32	Dossier de fichiers	
node_modules	21/02/2022 10:13	Dossier de fichiers	
src	04/02/2022 11:29	Dossier de fichiers	
target	21/02/2022 10:13	Dossier de fichiers	
.bowerrc	07/02/2022 18:18	Fichier BOWERRC	1 Ko
.classpath	08/02/2022 13:22	Fichier CLASSPATH	3 Ko
.factorypath	08/02/2022 13:22	Fichier FACTORYP...	37 Ko
.gitignore	04/02/2022 11:29	Document texte	1 Ko
.project	08/02/2022 13:22	Fichier PROJECT	2 Ko
.yo-rc.json	04/02/2022 11:29	Fichier JSON	1 Ko
bower.json	04/02/2022 11:29	Fichier JSON	2 Ko
Gruntfile.js	07/02/2022 18:18	Fichier de JavaScript	17 Ko
npm-shrinkwrap.json	21/02/2022 10:13	Fichier JSON	432 Ko
package.json	07/02/2022 18:18	Fichier JSON	2 Ko
pom.xml	07/02/2022 18:18	Document XML	19 Ko

# Il s'en passe des choses en 7 ans

Et chacun y met du sien

## — Beaucoup de dépendances

- └ Parfois dans du bower
- └ Parfois en tant qu'asset

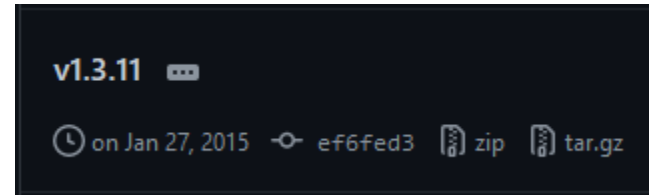
## — Du code dupliqué

## — Les style d'écriture et le pratiques évoluent

- └ Mais pas de façon globale
- └ Plusieurs syntaxes pour les modules
- └ Pas toujours compatible avec la minification

## — Angular 1.3.11

- └ En 7 ans ça n'a pas bougé
- └ <https://docs.angularjs.org/guide/migration>
- └ La roadmap to 1.8 est périlleuse
- └ Où sont mes TU pour valider si ça régresse ?



### Risques pour la minification

[Style Y090]

- Évitez l'utilisation de la syntaxe raccourcie pour déclaration de dépendances. Utilisez plutôt une approche compatible avec la minification.

*Pourquoi ?* : Les paramètres des composants (ex: contrôleur, *factory*, etc.) vont être convertis en variables raccourcies. Par exemple, 'common' et 'dataservice' deviendraient 'a' et 'b' et ne seraient pas trouvées par Angular.

```
/* à éviter - non compatible avec la minification */
angular
  .module('app')
  .controller('Dashboard', Dashboard);

function Dashboard(common, dataservice) {
}
```

Ce code pourrait produire des variables raccourcies après minification et provoquer des erreurs à l'exécution.

```
/* à éviter - non compatible avec la minification */
angular.module('app').controller('Dashboard', d);function d(a, b) { }
```

# Il s'en passe des choses en 7 ans

## — Trop simple à builder !?

```
grunt.registerTask('build', [  
  'regex-check',  
  'clean:dist',  
  'wiredep:app',  
  'includeSource',  
  'ngconstant:prod',  
  'useminPrepare',  
  'ngtemplates',  
  'concurrent:dist',  
  'concat',  
  'copy:dist',  
  'ngAnnotate',  
  'cssmin',  
  'autoprefixer',  
  'uglify',  
  'rev',  
  'usemin',  
  'htmlmin'  
]);
```

## — C'est quoi l'équivalent Webpack ?

- Ça build mais j'ai cassé la minification
- On a besoin de ngAnnotate

```
var merge = require('webpack-merge');  
  
exports.default = {  
  config: function(cfg) {  
    const strategy = merge.strategy({  
      'module.rules': 'prepend',  
    });  
  
    return strategy(cfg, {  
      module: {  
        rules: [  
          {  
            test: /src.*\.js$/,  
            use: [{ loader: 'ng-annotate-loader' }],  
          }  
        ]  
      },  
    });  
  }  
};
```



```
PS D:\CBP\agirs-front> ng build --plugin ~webpack-annotate.plugin.js
```

# 05

## Retour d'expérience

# Bilan après 8 mois

## — L'avancement ?

- └ 4 mise en production depuis le démarrage du projet
- └ Une approche itérative qui fonctionne bien et qui valide le framework hybride
- └ Une automatisation des tests de non régression afin de sécurisé le delivery

## — Les difficultés ?

- └ Harmonisation de l'ensemble des composants

## — Les opportunités ?

- └ Amélioration UX/UI