

Chérie, j'ai rétréci  
mes bundles JS

We ❤️ Speed 2019



Antoine Kahn-Dubois

Lead Developer chez Theodo

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

# Au menu

- Pourquoi diminuer la taille de son JavaScript ?
- Comment mettre en place le Code Splitting
- Comment choisir ses librairies ?
- Pour aller plus loin: le Bundle Splitting

# Au menu

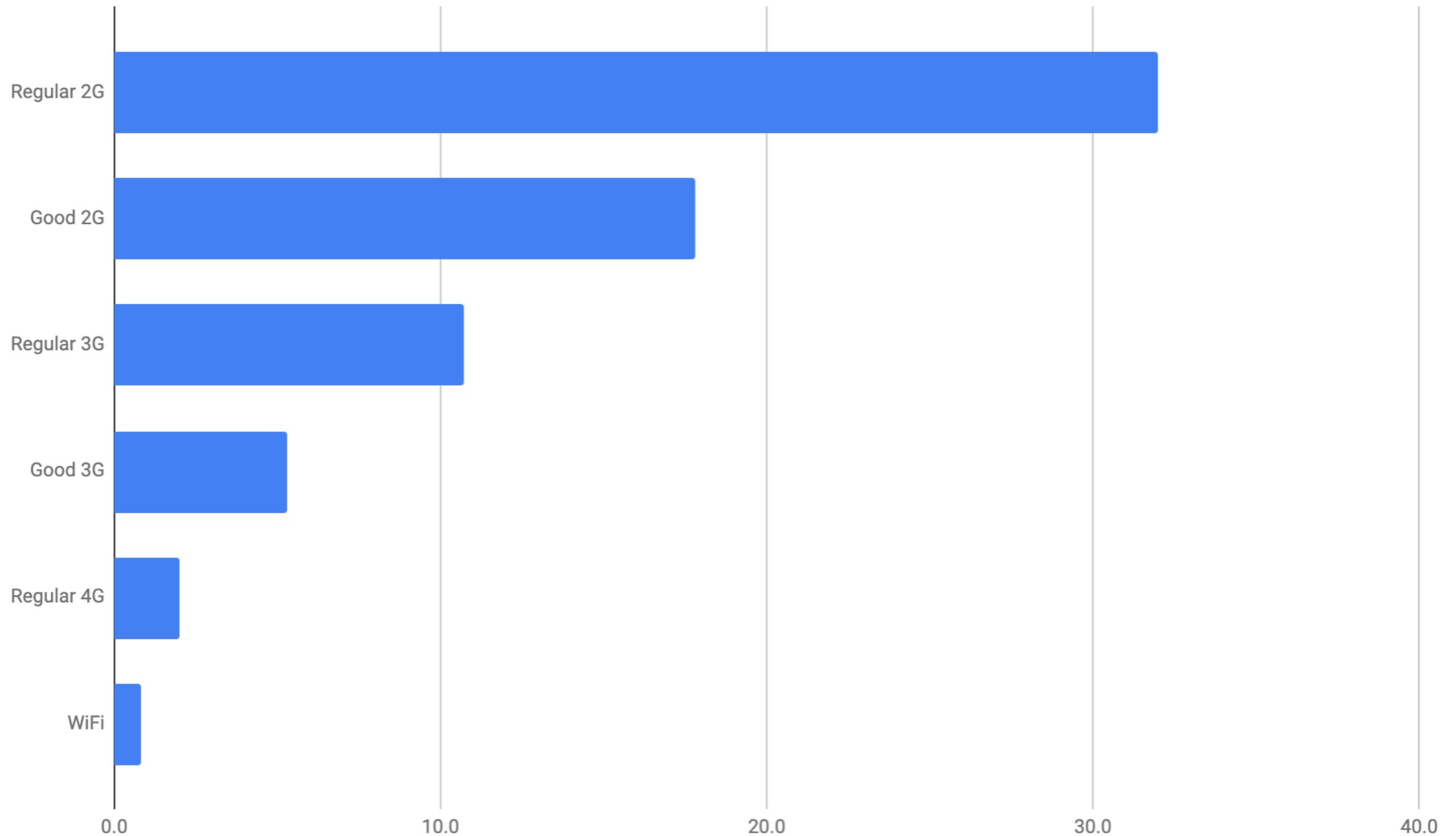
- Pourquoi diminuer la taille de son JavaScript ?
- Comment mettre en place le Code Splitting
- Comment choisir ses librairies ?
- Pour aller plus loin: le Bundle Splitting

Pourquoi réduire la taille de son JavaScript ?

Réduire le temps de:

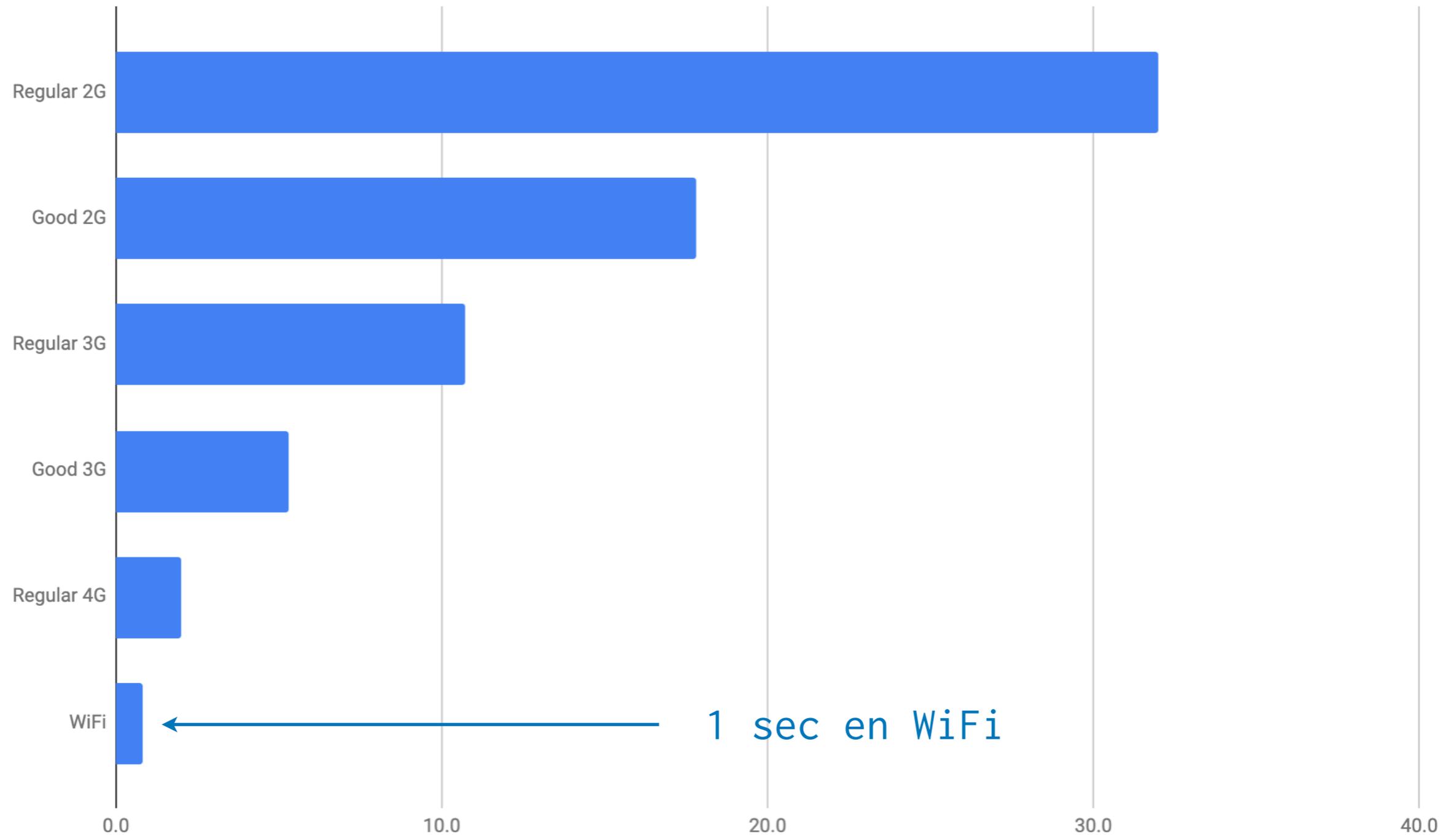
- Téléchargement

# Temps pour télécharger 1MB de JavaScript

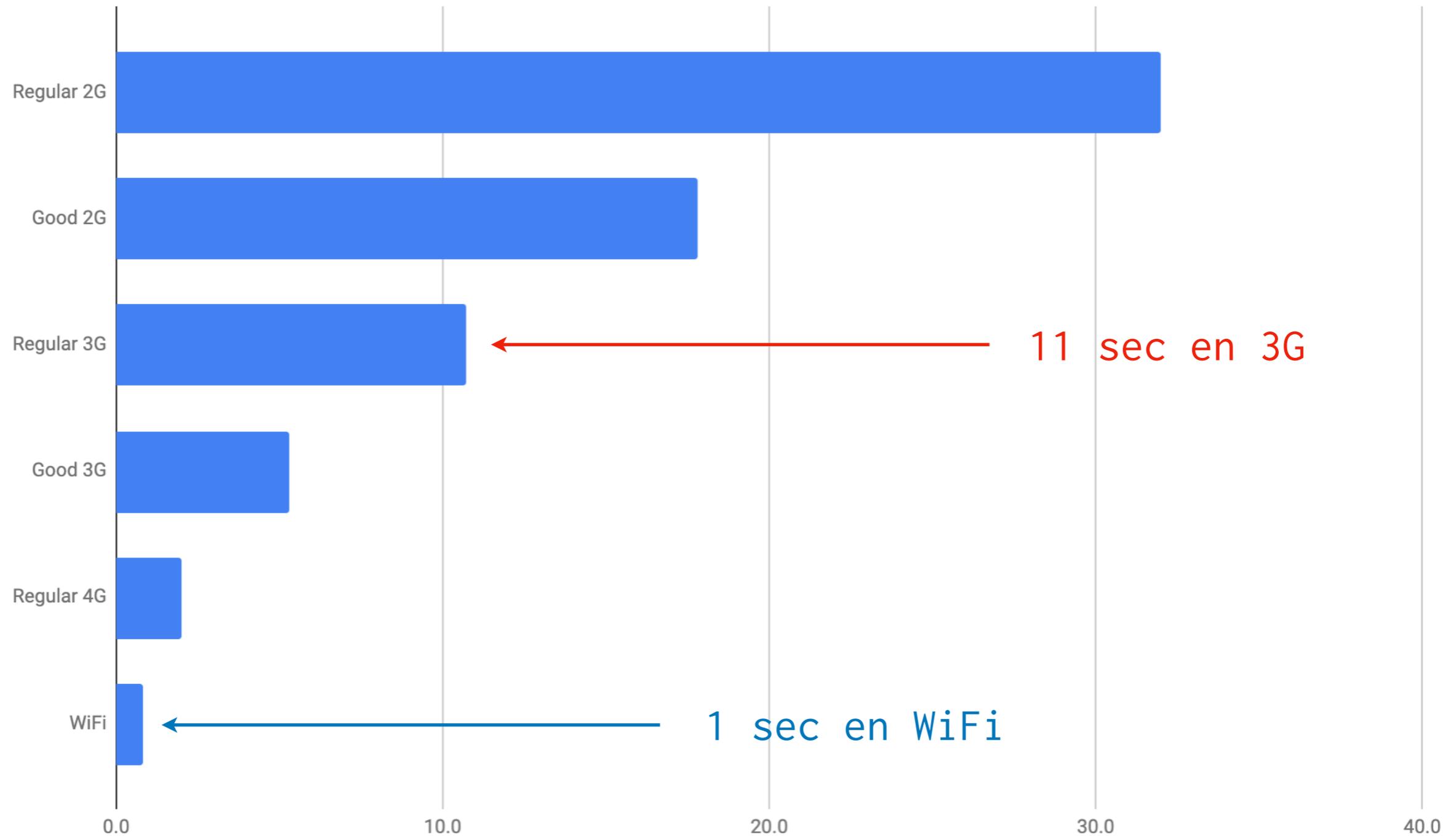


Source: ma calculette

# Temps pour télécharger 1MB de JavaScript



# Temps pour télécharger 1MB de JavaScript

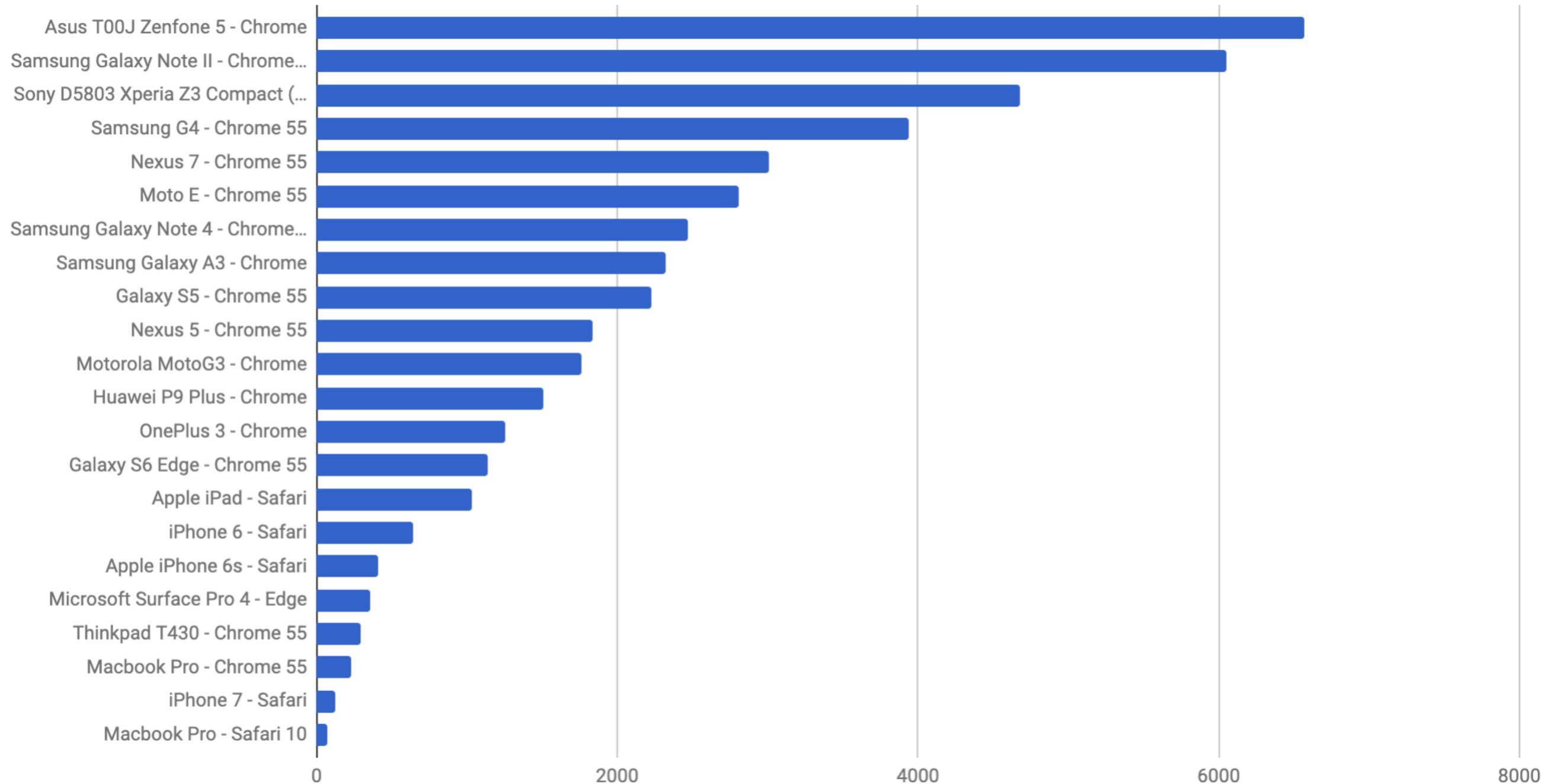


# Pourquoi réduire la taille de son JavaScript ?

Réduire le temps de:

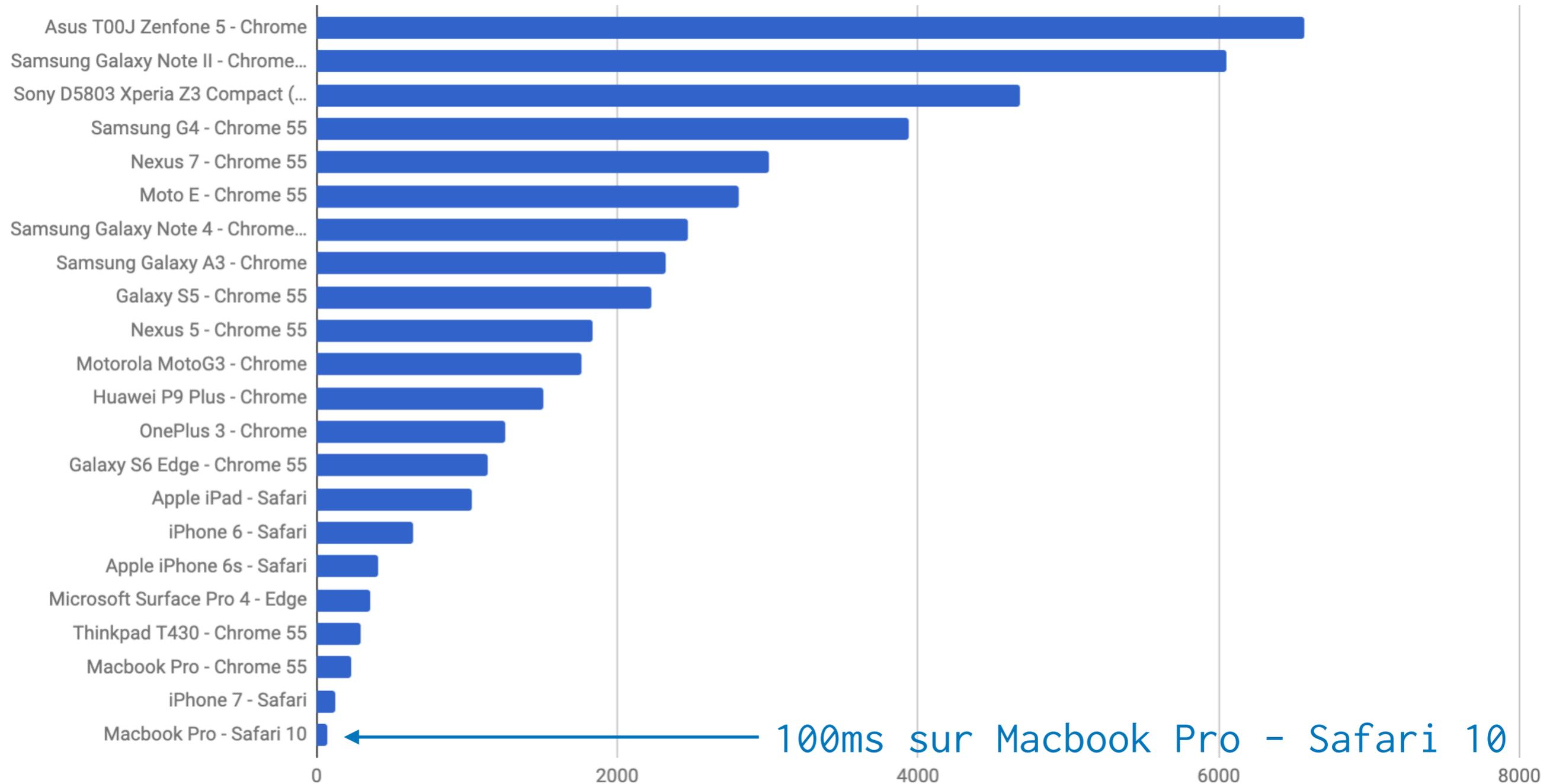
- Téléchargement
- Parsing

# Temps pour parser 1MB de JavaScript

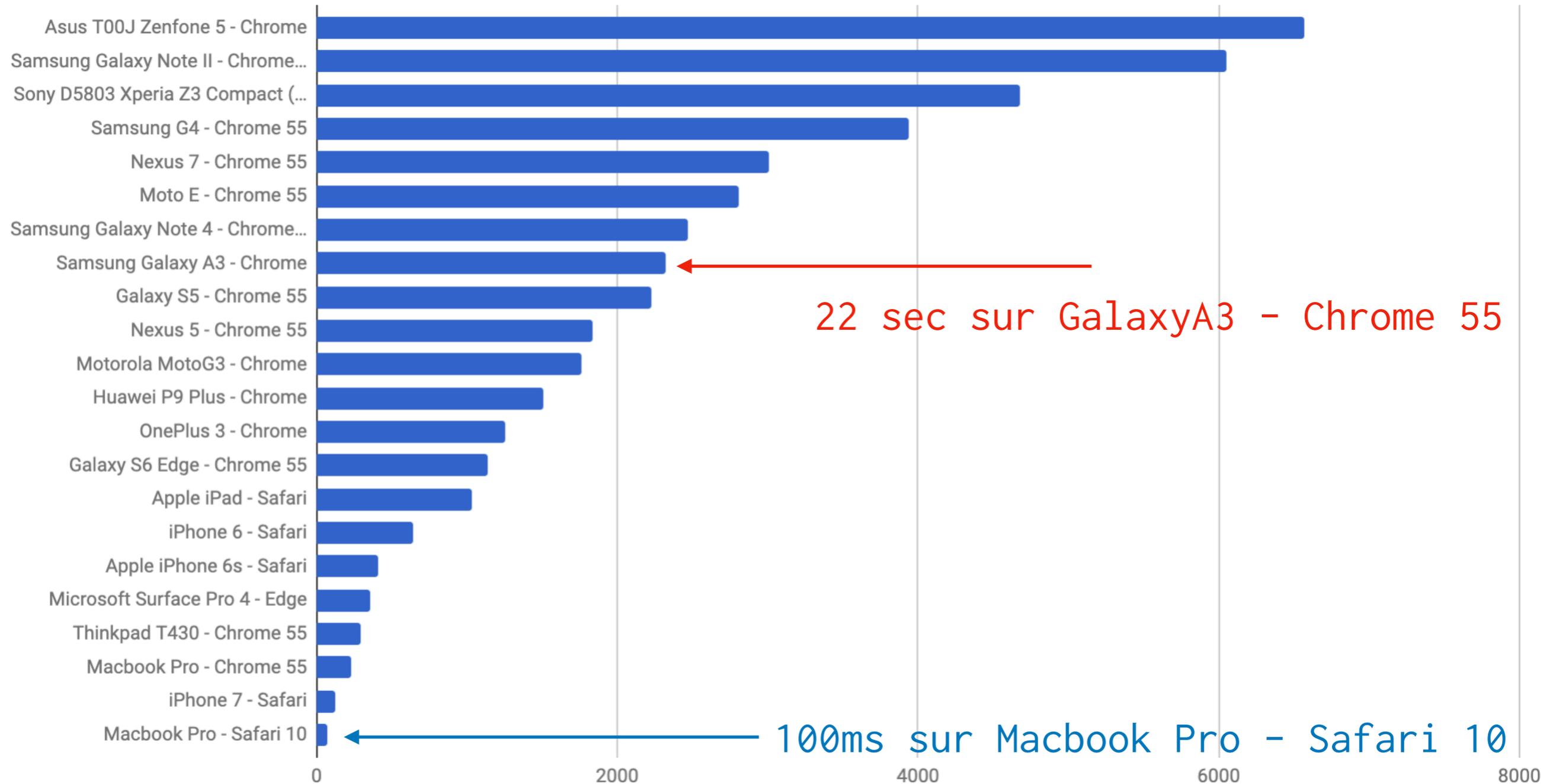


Source: @addyosmani, cost of JavaScript 2018

# Temps pour parser 1MB de JavaScript



# Temps pour parser 1MB de JavaScript



# Pourquoi réduire la taille de son JavaScript ?

Réduire le temps de:

- Téléchargement
- Parsing
- **Compilation & Exécution**

# Pourquoi réduire la taille de son JavaScript ?

Sauver la planète !

On va consommer **moins d'énergie** pour:

- **Déplacer** les fichiers du serveur au client
- **Parser** les fichiers chez le client

Pourquoi réduire la taille de son JavaScript ?

Taille conseillée: < 200KB Gzippé

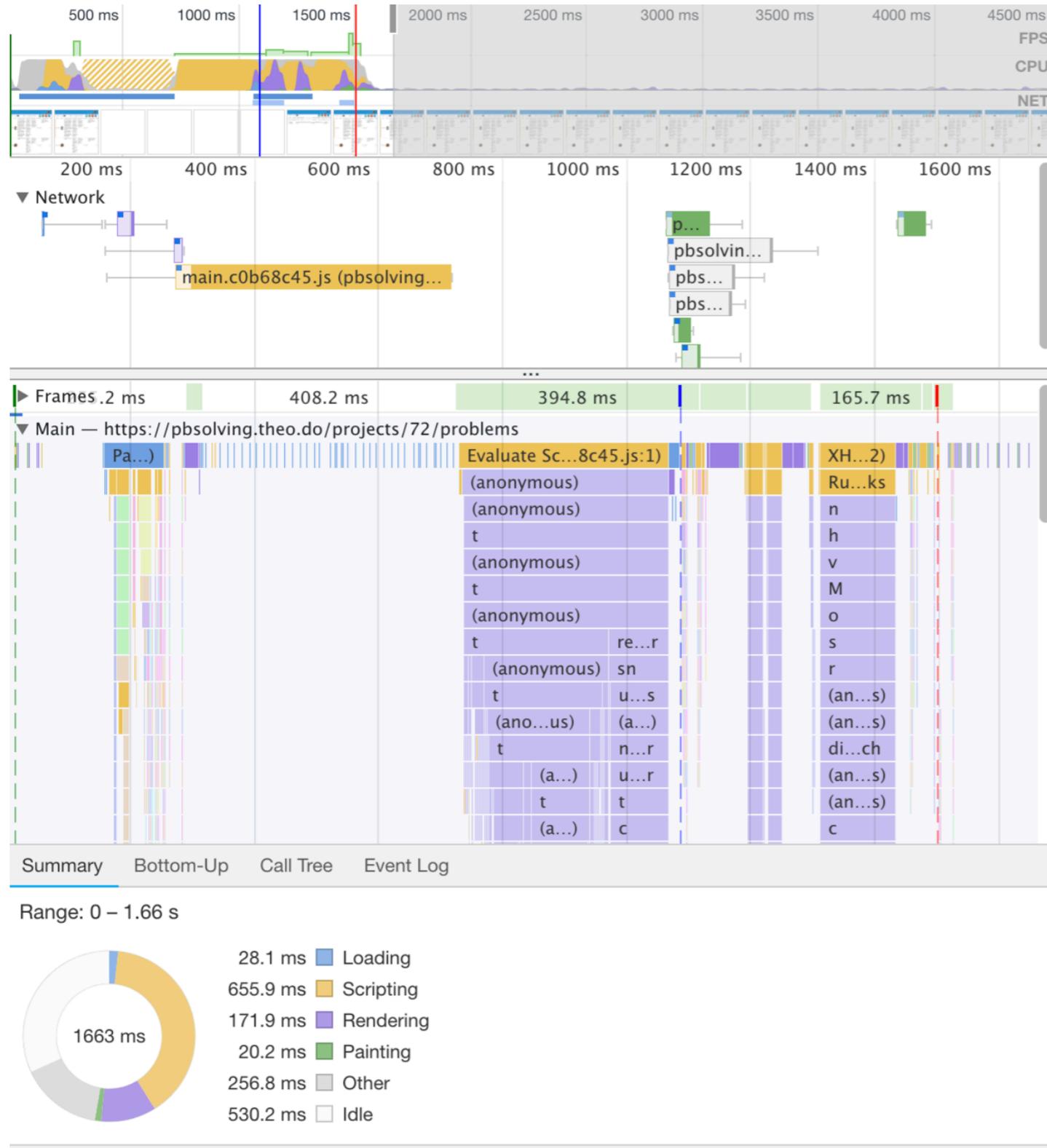
# Au menu

- Pourquoi diminuer la taille de son JavaScript ?
- Comment mettre en place le Code Splitting
- Comment choisir ses librairies ?
- Pour aller plus loin: le Bundle Splitting

# Application de test

- Single Page Application
- En React/Redux
- Une page de login
- Une page avec un tableau de data et des modales

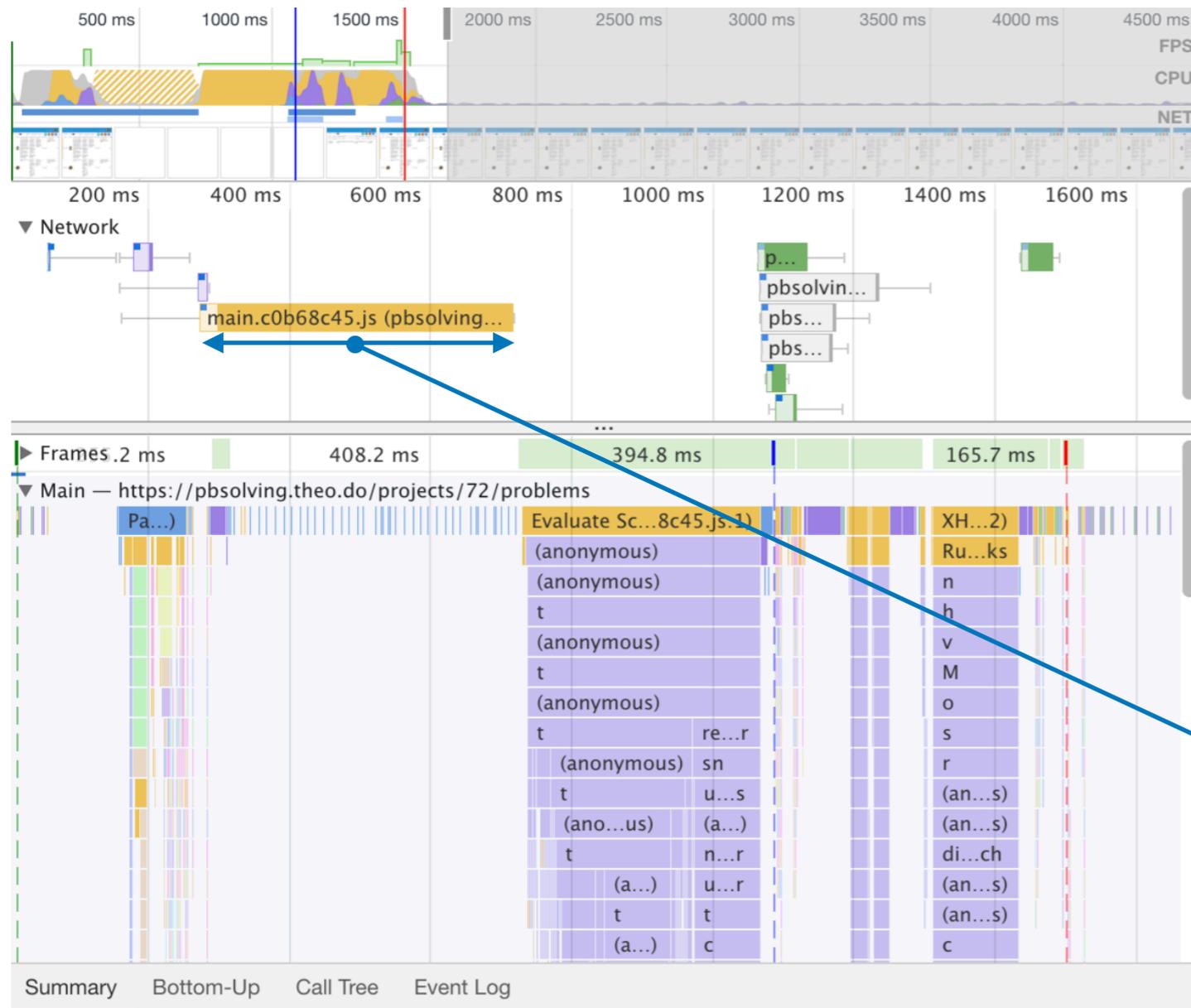
# État initial (page principale)



Temps de chargement: 1.3s

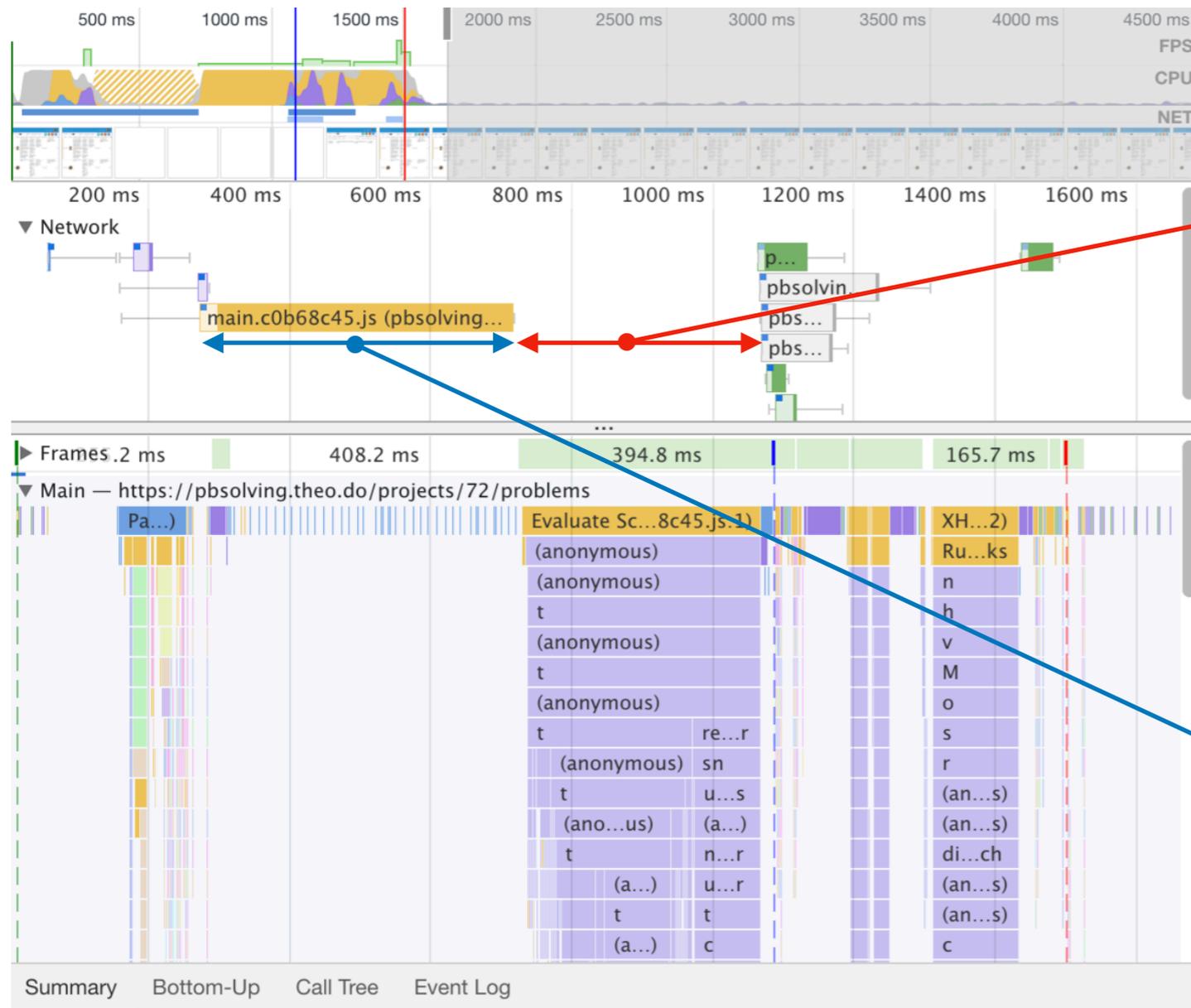
Sur Chrome, Macbook Pro

# État initial (page principale)



500ms Téléchargement

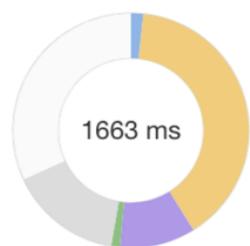
# État initial (page principale)



350ms Parsing, compilation & execution

500ms Téléchargement

Range: 0 – 1.66 s



- 28.1 ms Loading
- 655.9 ms Scripting
- 171.9 ms Rendering
- 20.2 ms Painting
- 256.8 ms Other
- 530.2 ms Idle

Qu'y a-t-il dans mon  
Bundle ?



Qu'y a-t-il dans mon  
bundle ?

L'outil idéal: webpack-bundle-analyzer  
[github.com/webpack-contrib/webpack-bundle-analyzer](https://github.com/webpack-contrib/webpack-bundle-analyzer)

# C'est quoi webpack-bundle-analyzer ?

static/js/2.2ae14965.chunk.js

node\_modules

react-dates

lib

components

DayPicker.js

CalendarDay.js

CalendarMonthGrid.js

SingleDatePicker.js

DateInput.js

DayPickerSingleDateController.js

DayPickerNavigation.js

moment

moment.js

GetIntrinsic.js

es2015.js

es5.js

Dialog.js + 16 modules (concatenated)

index.js + 5 modules (concatenated)

react-dom.production.min.js

static/js/4.fc725db7.chunk.js

node\_modules

react-dom

cjs

history.js + 3 modules (concatenated)

react-router.js + 4 modules (concatenated)

react.production.min.js

react-is

react-router-dom.js + 3 modules (concatenated)

static/js/3.4f2979a4.chunk.js

node\_modules

@material-ui

core

esm

styles

withStyles.js + 23 modules (concatenated)

defaultTheme.js + 15 modules (concatenated)

Button.js + 7 modules (concatenated)

static/js/5.4da167d6.chunk.js

node\_modules

highlight.js

light.js + 2 modules (concatenated)

core.js



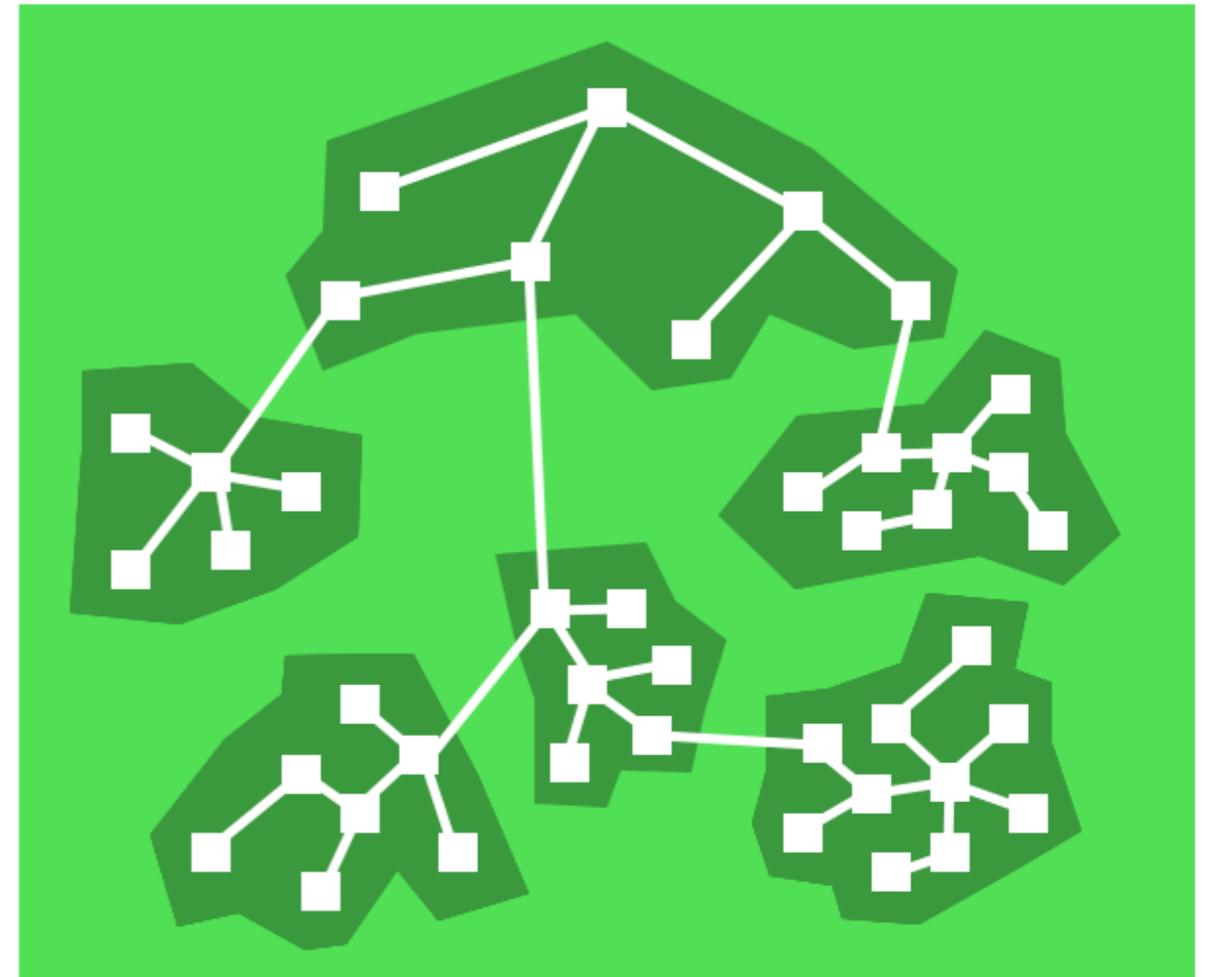


# Code Splitting

Le but: apporter **uniquement** à l'utilisateur **ce dont il a besoin**, quand il en a besoin.

On va **découper** notre JavaScript en plusieurs **chunks**, et lorsque l'utilisateur voudra faire une action, on lui enverra **seulement le JavaScript nécessaire**.

# Code Splitting



# Code Splitting

`import`

`import()`

Statique

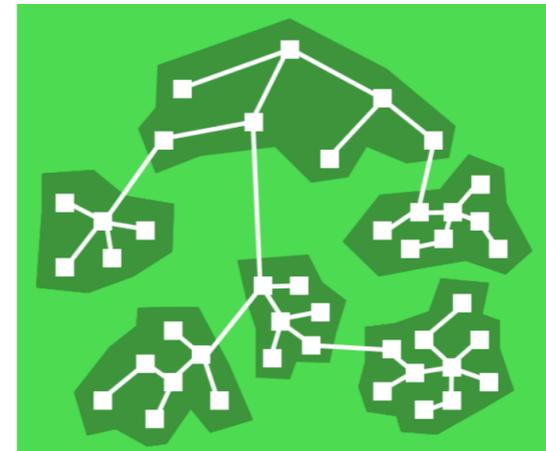
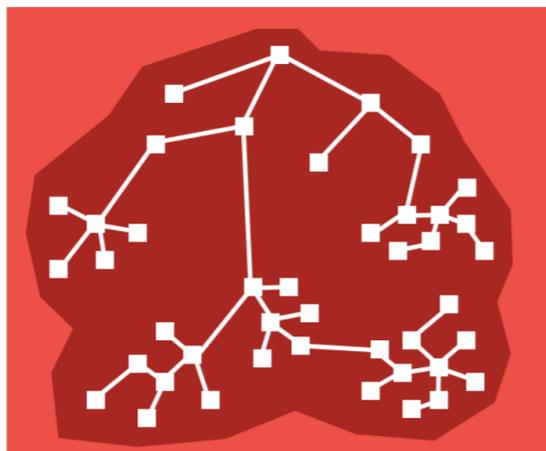
Dynamique

Synchrone

Asynchrone

Concatène les fichiers

Crée des chunks



# Code Splitting par page

```
const Callback = lazy(() => import('./pages/Callback'));
const Invite = lazy(() => import('./pages/Invite'));
const Login = lazy(() => import('./pages/Login'));
const NewProject = lazy(() => import('./pages/NewProject'));
const Problems = lazy(() => import('./pages/Problems'));
const Projects = lazy(() => import('./pages/Projects'));
```

```
const history = createBrowserHistory();
const { persistor, store } = configureStore(history);
```

```
@@ -29,7 +28,7 @@ const App = () => (
```

```
  <Provider store={store}>
    <PersistGate loading={null} persistor={persistor}>
      <ConnectedRouter history={history}>
```

```
        <Fragment>
```

```
          <Suspense fallback={<div>Loading...</div>}>
```

```
            <Toastr />
```

```
            <Header />
```

```
            <Switch>
```

```
@@ -49,7 +48,7 @@ const App = () => (
```

```
          <Route exact path="/login" component={Login} />
```

```
          <Route component={Login} />
```

```
        </Switch>
```

```
      </Fragment>
```

```
    </Suspense>
```



# Après Code Splitting par Page

570 KB (-30 KB)

## static/js/7.860d2354.chunk.js

static/js/7.860d2354.chunk.js

Stat size: 4.13 MB  
Parsed size: 2.2 MB  
Gzipped size: 573.3 KB

### node\_modules

highlight.js

lib

languages

1c.js

sqf.js

mel.js

maxima.js

gauss.js

lsl.js

x86asm.js

sql.js

mathematica.js

vim.js

stata.js

gls.js

moment

min

locales.min.js

moment.js

react-dates

lib

components



react-dom

cjs

react-dom.production.min.js

handlebars

dist

handlebars.min.js

react-select

dist

react-select.es.js

react-table

es

index.js

entities

maps

entities.json

lodash

react-tooltip

dist

index.js

react-toolbox

style.js

react-autosuggest

dist

Autosuggest.js

react-portal

lib

Tokenizer.js

htmlparser2

lib

Parser.js

redux-saga

es

io.js

react-whatsoever

dist

Item.js

react-autosuggest

dist

Autosuggest.js

axios

lib

helpers

stylis

core

stylis.js

es-abstract

es5.js

es2015.js

lowlight

lib

index.js

regenerator-runtime

es

runtime.js

react-portal

es

react-production.min.js

core-js

library

modules

connected-react-router

lib

index.js

redux

es

react-redux

node\_modules

index.js

node-libs-browser

node\_modules

index.js

history

es

react-router

es

react-loading

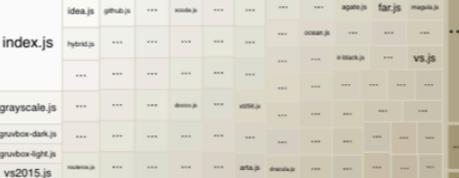
dist

react-loading.js

react-syntax-highlighter

styles

hljs



static/js/8.50c9189d.chunk.js

node\_modules

auth0-js

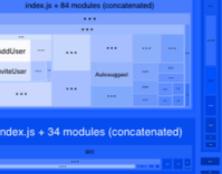
dist

auth0.min.esm.js

static/js/main.551db70a.chunk.js

src

components



static/js/5.6cf74e75.chunk.js



# highlight.js

## static/js/7.860d2354.chunk.js

static/js/7.860d2354.chunk.js

Stat size: 4.13 MB  
Parsed size: 2.2 MB  
Gzipped size: 573.3 KB

### node\_modules

#### highlight.js

lib

languages

# 1c.js

sqf.js

mel.js

maxima.js

gauss.js

lsl.js

x86asm.js

sql.js

vim.js

mathematica.js

stata.js

gls.js

moment

min

# locales.min.js

moment.js

#### react-dates

lib

components



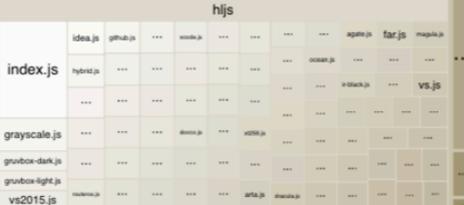
#### @material-ui

core



#### react-syntax-highlighter

styles



#### react-dom

cjs



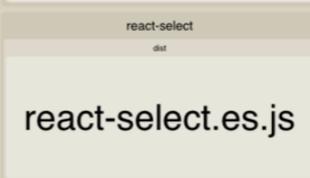
#### handlebars

dist



#### react-select

dist



#### react-table

es



#### entities

maps



# lodash

#### react-tooltip

dist



#### styled-components

dist



#### htmlparser2

lib



#### redux-saga

es



#### react-awhatever

dist



#### react-autosuggest

dist



#### axios

lib



#### es-abstract

es5.js



#### react-redux

es



#### react-router

es



static/js/8.50c9189d.chunk.js

node\_modules

auth0-js

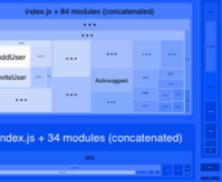
dist

auth0.min.esm.js

static/js/main.551db70a.chunk.js

src

components



static/js/5.6cf74e75.chunk.js



# highlight.js n'est utilisé que dans une modale

Problem solving

Antoine Kahn-Dubois

PICK OTHER PROJECT

Date	Owner	Problem with impact	Expected result	Check date	Result	Status
05/08		<p>I failed rgrgvbg</p> <p>First label Second la...</p>	test a a a			
06/08		<p>I cannot solve my problems</p> <p>First label</p>	I can solve my problems	28/07	✓	🔍 ⚡

### Markdown export

```
#### I failed rgrgvbg
*Hypothèses de cause :*
1. liste
2. très
3. numérotée

*italique*

**gras**

[link](lol)

`code` fgb

*Actions :* (responsable Antoine - 27/07/2018)

# h1
## h2
### h3
#### h4
##### h5
##### h6

> blockquote

---

texte sur plusieurs
```

COPY TO CLIPBOARD

# On Code Split la modale

```
const DailyMailExportModal = lazy(() => import('../DailyMailExportModal'));
```

```
type PropsType = {  
  problem: ProblemType,
```

```
@ -93,11 +95,15 @@ class ProblemTableCellAction extends Component<PropsType, State>
```

```
    onClick={this.handleOpen}
```

```
  />
```

```
<ReactTooltip place="left" type="info" effect="solid" id="paste" />
```

```
<DailyMailExportModal
```

```
  problem={problem}
```

```
  onClose={this.handleClose}
```

```
  open={this.state.isModalOpened}
```

```
 />
```

```
{this.state.isModalOpened && (
```

```
  <Suspense fallback={null}>
```

```
    <DailyMailExportModal
```

```
      problem={problem}
```

```
      onClose={this.handleClose}
```

```
      open={this.state.isModalOpened}
```

```
    />
```

```
  </Suspense>
```

```
)}
```

# Avant le code split de la modale

570 KB

## static/js/7.860d2354.chunk.js

static/js/7.860d2354.chunk.js

Stat size: 4.13 MB  
Parsed size: 2.2 MB  
Gzipped size: 573.3 KB

### node\_modules

highlight.js

lib

languages

1c.js

sqf.js

mel.js

maxima.js

gauss.js

lsl.js

x86asm.js

sql.js

vim.js

stata.js

gls.js

moment

min

locales.min.js

moment.js

react-dates

lib

components



react-dom

cjs

react-dom.production.min.js

handlebars

dist

handlebars.min.js

react-select

dist

react-select.es.js

react-table

es

index.js

methods.js

entities

maps

entities.json

lodash

react-tooltip

dist

index.js

style.js

styled-components

dist

styled-components.browser.esm.js

htmlparser2

lib

Tokenizer.js

Parser.js

redux-saga

es

utils.js

io.js

react-awhatever

dist

Item.js

react-autosuggest

dist

Autosuggest.js

axios

lib

helpers

utils.js

stylis

lowlight

lib

index.js

regenerator-runtime

es

runtime.js

react-portal

es

react

core-js

library

es2015.js

react-redux

es

index.js

react-with-styles

lib

events

dom-handlers

validator

domutils

scheduler

es-abstract

es5.js

GetIntrinsic.js

react-redux

node\_modules

index.js

react-with-styles

lib

events

dom-handlers

validator

domutils

scheduler

index.js

history

es

react-transition-group

dist

react-router

lib

react-loading

dist

react-router

es

Route.js

redux-persist

es

string\_decoder

js-global

static/js/8.50c9189d.chunk.js

node\_modules

auth0-js

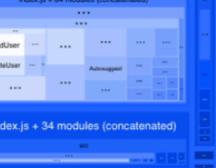
dist

auth0.min.esm.js

static/js/main.551db70a.chunk.js

src

components



static/js/5.6cf74e75.chunk.js



# Après le code split de la modale

360 KB (-200 KB)

## static/js/8.60141039.chunk.js

static/js/8.60141039.chunk.js  
Stat size: 3.24 MB  
Parsed size: 1.42 MB  
Gzipped size: 363.07 KB

### node\_modules

moment  
min  
**locales.min.js**

A treemap visualization showing the structure of the node\_modules directory for the chunk.js file. It contains various sub-packages such as react-dom, handlebars, react-select, react-table, entities, react-dates, lodash, react-redux, and @material-ui. Each package is represented by a rectangular area containing its sub-files and folders.

## static/js/9.b0f1e469.chunk.js

### node\_modules

### highlight.js

### lib

### languages

# 1c.js

### mathematica.js

## static/js/10.639ccb8d.chunk.js

### node\_modules

# auth0.min.esm.js

## static/js/main.2a784086.chunk.js

### src

A treemap visualization showing the structure of the src directory. It contains a main index.js file and several other modules like AddUser, MailExport, and others.





# moment / highlight

Les `grosses` librairies contiennent beaucoup de `fichiers spécifiques`.

On importe seulement de ces librairies `les bouts qui nous intéressent`. Pour `moment`, seulement le français et l'anglais; pour `highlight`, seulement le markdown.

# Après l'allègement de moment/highlight

310 KB (-50 KB)

10 KB (-190 KB)

## static/js/8.f58616cc.chunk.js

**static/js/8.f58616cc.chunk.js**  
Stat size: 2.92 MB  
Parsed size: 1.16 MB  
Gzipped size: 313.84 KB

### node\_modules

static/js/10.519585df.chunk.js

node\_modules  
auth0-js  
dist

## auth0.min.esm.js

static/js/9.f9755b18.chunk.js

node\_modules

react-syntax-highlighter  
styles  
highlight.js  
highlight.js  
lowlight  
core.js

static/js/main.f0858359.chunk.js

src  
components

static/js/5.320d1f99.chunk.js  
node\_modules  
src





# Lorsque j'exporte mes composants en global...

Tree: 9edae94503 ▾

[problem-solving](#) / [client](#) / [src](#) / [components](#) / [index.js](#)



antkahn allow user to change his mail export

2 contributors



19 lines (17 sloc) | 869 Bytes

```
1 // @flow
2
3 export { default as Autosuggest } from './Autosuggest';
4 export { default as Header } from './Header';
5 export { default as Loading } from './Loading';
6 export { default as MailExport } from './MailExport';
7 export { default as PageContent } from './PageContent';
8 export { default as PrivateRoute } from './PrivateRoute';
9 export { default as ProblemTable } from './ProblemTable';
10 export { default as ProblemTableCell } from './ProblemTableCell';
11 export {
12   default as ProblemTableCellDatePicker,
13 } from './ProblemTableCellDatePicker';
14 export { default as ProblemTableCellOwner } from './ProblemTableCellOwner';
15 export { default as ProblemTableCellResult } from './ProblemTableCellResult';
16 export { default as ProfilePicture } from './ProfilePicture';
17 export { default as ProjectMembers } from './ProjectMembers';
18 export { default as UserCard } from './UserCard';
```

# J'importe mes composants en global !

---

```
// @flow
```

```
import React, { Component } from 'react';
```

```
import type { Match } from 'react-router-dom';
```

```
import type { Action } from '../..//types/redux';
```

```
import { Loading } from '../..//components';
```

```
export type PropsType = {  
  inviteUser: (token: string) => Action,  
  match: Match,  
  push: (pathname: string) => Action,  
};
```

```
export default class Invite extends Component<PropsType> {  
  props: PropsType;
```

J'importe seulement les composants dont j'ai besoin

2 client/src/pages/Invite/Invite.component.js

```
@@ -4,7 +4,7 @@ import React, { Component } from 'react';  
4 4  
5 5   import type { Match } from 'react-router-dom';  
6 6   import type { Action } from '../types/redux';  
7 7   - import { Loading } from '../components';  
7 7   + import Loading from '../components/Loading';  
8 8  
9 9   export type PropsType = {  
10 10     inviteUser: (token: string) => Action,
```





Sur quels composants utiliser le code splitting ?

# Sur quels composants utiliser le code splitting ?

Dès que l'élément `n'est pas visible` à l'arrivée sur la page:

- Les autres pages
- Les modales
- Les date pickers
- Les composants non affichés dans le viewport



On split le reste...

# Avant Code Splitting

150 KB

static/js/9.49611f9d.chunk.js

static/js/9.49611f9d.chunk.js  
Stat size: 1.36 MB  
Parsed size: 624.16 KB  
Gzipped size: 156.14 KB

react-dates

lib

components

DayPicker.js

DateRangePicker.js

CalendarMonthGrid.js

CalendarDay.js

SingleDatePickerInput.js

SingleDatePicker.js

DateInput.js

DayPickerNavigation.js

CalendarMonth.js

DayPickerRangeController.js

DayPickerSingleDateController.js

CustomizableCalendarDay.js

DataRangePickerInput.js

DefaultTheme.js

DefaultPhrases.js

handlebars

dist

handlebars.min.js

node\_modules

index.js

Tokenizer.js

Parser.js

FeedHandler.js

es-abstract

react-input-autosize

domutils

react-with-styles

es2015.js

AutosizeInput.js

legacy.js

withStyles.js

sanitize-html-react

react-portal

validator

index.js

es5.js

domhandler

object-keys

dom-serializer

@material-ui

core

icons

Button.js

string\_decoder

base64-js

index.js

string\_decoder.js

es-to-primitive

global-cache

index.js

events

events.js

object-assign

react-tooltip

dist

index.js

style.js

getPosition.js

react-toggle

index.js

src

pages

Problems

index.js + 83 modules (concatenated)

node\_modules

react-table

index.js

methods.js

prop-types.js

pagination.js

utils.js

react-select

dist

react-select.es.js

static/js/14.708e5714.chunk.js

node\_modules

auth0.js

dist

auth0.min.esm.js

static/js/2.e1d228e1.chunk.js

node\_modules

@material-ui

core

Modal.js

Popover.js

FormControl.js

MenuItem.js

Fade.js

Tooltip.js

TextFields.js

List

SelectInput.js

ListItems.js

Menu.js

Grow.js

react-autowhatever

dist

Autowhatever.js

Item.js

react-autosuggest

dist

Autosuggest.js

lodash

style

transition

react-select

dist

react-select.es.js

static/js/13.9e54f761.chunk.js

node\_modules

react-syntax-highlighter

styles

hljs

index.js

react-syntax-highlighter

lowlight

dist

esm

core.js

highlight.js

highlight.js

static/js/main.78879ac3.chunk.js

src

static/js/1.3dbde2b3.chunk.js

node\_modules

src

static/js/8.bc7cb4bd.chunk.js

static/runtime-main.148637a.js

static/js/12.a2a59edc.chunk.js

react-dom

cjs

react-dom.production.min.js

moment

moment.js

@material-ui

core

styles

withStyles.js

SnackBar.js

Typography.js

helpers

Paper.js

Slide.js

colors

node\_modules

styled-components

dist

styled-components.browser.esm.js

redux-saga

utils.js

channel.js

io.js

proc.js

jss

utils

RuleList.js

Jss.js

stylis.js

react-router

Redirect.js

Route.js

react-redux

connected-react-router

history

react-router-dom

Link.js

react-redux

redux-persist

es

react

react.production.min.js

lodash

react-transition-group

Transition.js

react-event-listener

react-router-dom

css-vendor

jest-decode

js-nested

react-is

process

browser.js

react-is

index.js

js-cookie

index.js

js-cookie.js

prop-types

react-is

react-is

dist

static/js/0.303d381e.chunk.js

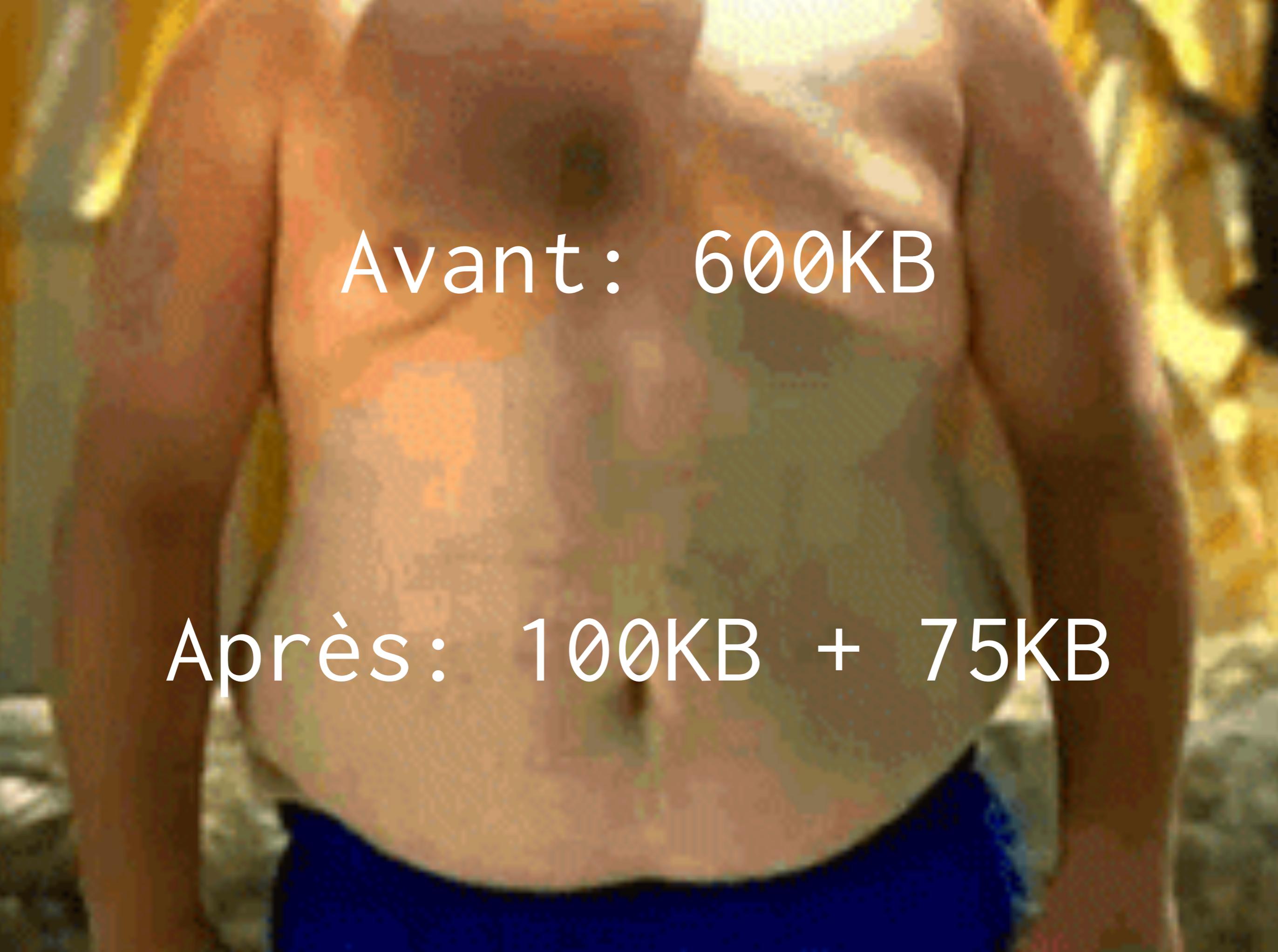
node\_modules

static/js/3.e96ae25f.chunk.js

node\_modules







Avant: 600KB

Après: 100KB + 75KB

# Comparaison (page principale)

Ipad, iOS12, 3G

0.0

0.0

# Comparaison (page login)

Desktop, Chrome, 3G

ba62dd1b.ngrok.io/

ba62dd1b.ngrok.io/

0.0

0.0

# Au menu

- Pourquoi diminuer la taille de son JavaScript ?
- Comment mettre en place le Code Splitting
- Comment choisir ses librairies ?
- Pour aller plus loin: le Bundle Splitting

Comment choisir la meilleure  
bibliothèque de graphes ?

# bundlephobia.com

BUNDLEPHOBIA

[BADGES](#) [OPENCOLLECTIVE](#) [SCAN PACKAGE.JSON<sup>B</sup>](#)



echarts@4.3.0

A powerful charting and visualization library for browser 1 dependency

## BUNDLE SIZE

**784.7 kB**

MINIFIED

**261.3 kB**

MINIFIED + GZIPPED

## DOWNLOAD TIME

**8.71 s**

2G EDGE

**5.23 s**

EMERGING 3G



# Composition

## Composition



Permet de voir si la librairie utilise des **dépendances** que vous avez **déjà sur votre projet**

# Meilleur choix ?

## Similar Packages

General purpose Charting libraries

d3



Data-Driven Documents

**70 %**  
SMALLER **79.36 kB**  
MIN + GZIP



chart.js



Simple HTML5 charts using the  
canvas element.

**57 %**  
SMALLER **112.06 kB**  
MIN + GZIP

frappe-charts



<https://frappe.github.io/charts>

**93 %**  
SMALLER **17.10 kB**  
MIN + GZIP



highcharts



JavaScript charting framework

**70 %**  
SMALLER **79.57 kB**  
MIN + GZIP



SUGGEST ANOTHER

# Mon choix

recharts@1.7.1

i tree-shakeable some side-effects 11 dependencies npm

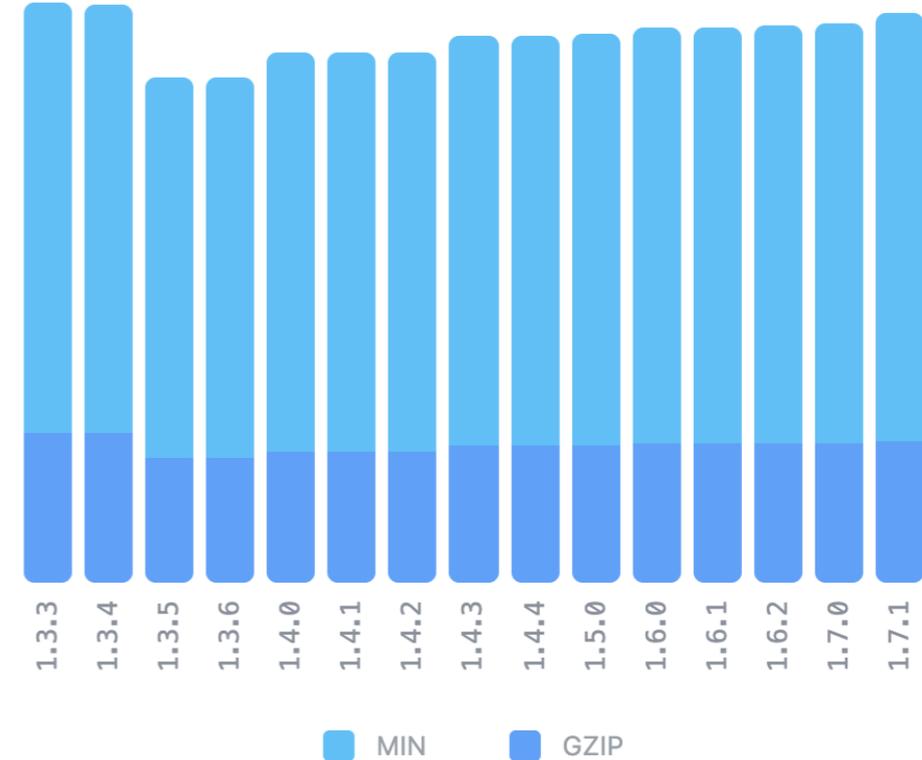
## BUNDLE SIZE

**488.5 kB**

MINIFIED

**120.5 kB**

MINIFIED + GZIPPED



## DOWNLOAD TIME

**4.02s**

2G EDGE ⓘ

**2.41s**

EMERGING 3G ⓘ

## Composition



# Mon choix

Tree shakeable

recharts@1.7.1

tree-shakeable some side-effects 11 dependencies npm

## BUNDLE SIZE

488.5 kB

MINIFIED

120.5 kB

MINIFIED + GZIPPED

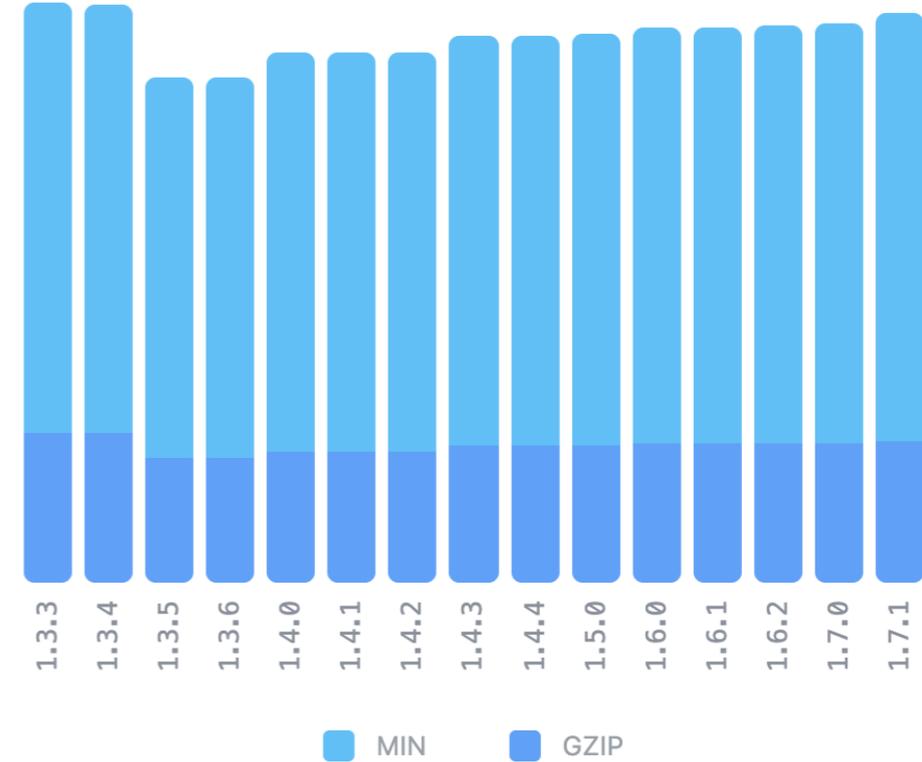
## DOWNLOAD TIME

4.02s

2G EDGE ⓘ

2.41s

EMERGING 3G ⓘ



## Composition



# Mon choix

Tree shakeable

recharts@1.7.1

tree-shakeable some side-effects 11 dependencies

BUNDLE SIZE

488.5 kB

MINIFIED

120.5 kB

MINIFIED + GZIPPED

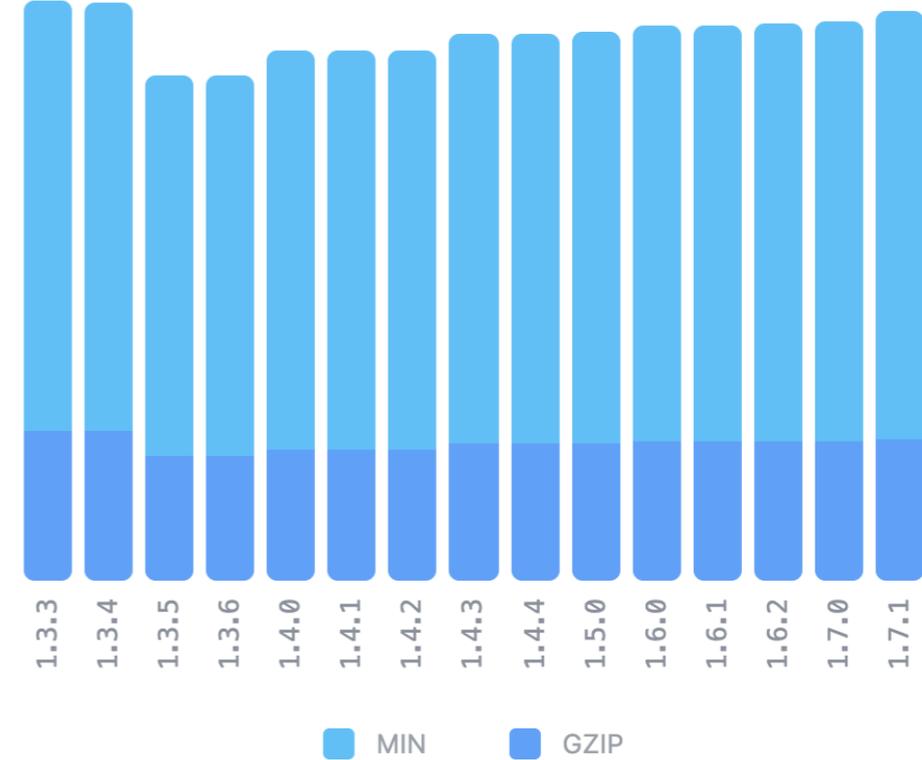
DOWNLOAD TIME

4.02s

2G EDGE ⓘ

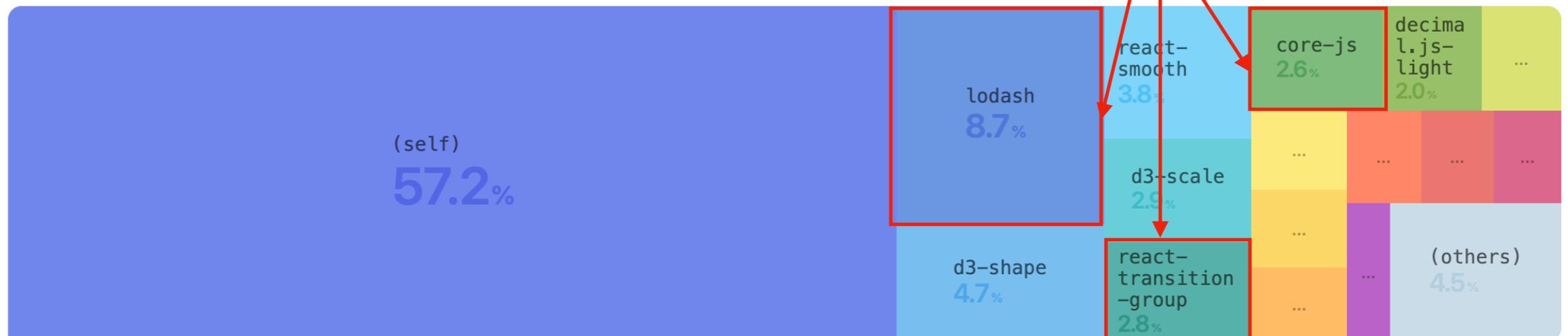
2.41s

EMERGING 3G ⓘ



Composition

Librairies déjà utilisées



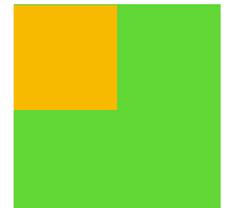
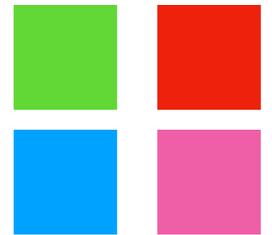
# Au menu

- Pourquoi diminuer la taille de son JavaScript ?
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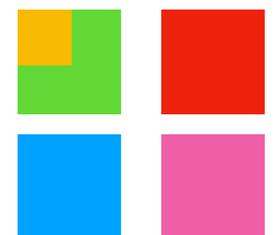
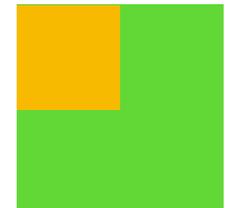
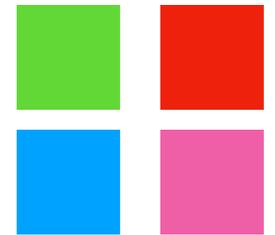
# Bundle Splitting



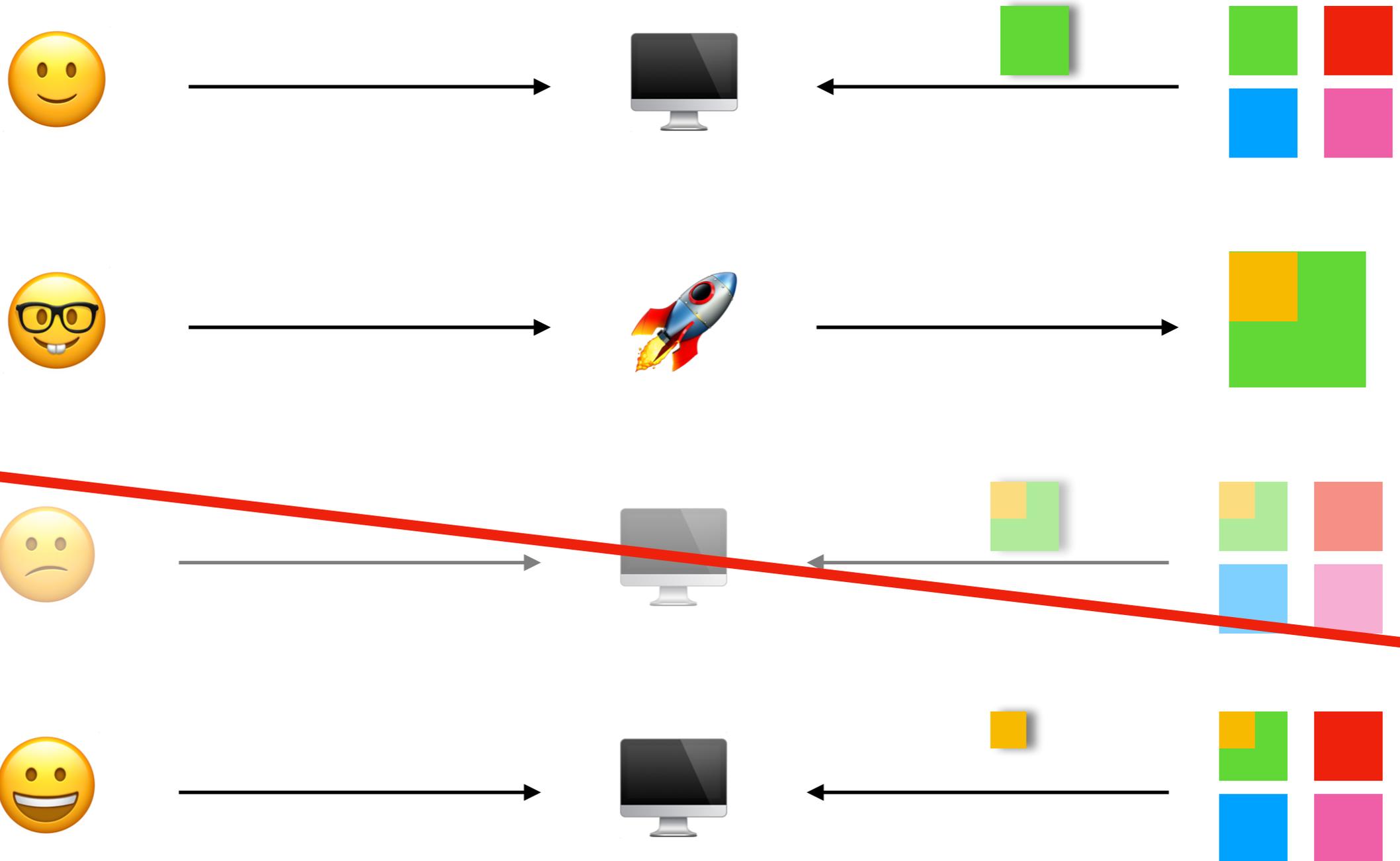
# Bundle Splitting



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- Le **nom** d'un chunk dépend de son **contenu**
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- On va créer un chunk par **librairie externe**

# Bundle Splitting

- Le **nom** d'un chunk dépend de son **contenu**
- Un chunk **déjà téléchargé** va rester dans le **cache navigateur** de l'utilisateur
- On va créer un chunk par **librairie externe**
- Cela nécessite **HTTP/2**, car on va faire une **cinquantaine de requêtes** par page



# Après Bundle Splitting

static/js/npm.recharts.1799e9d1.chunk.js

node\_modules

recharts

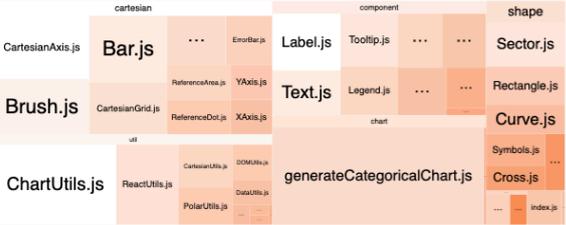
es6

index.js + 40 modules (concatenated)

node\_modules

recharts

es6



static/js/npm.recharts.1799e9d1.chunk.js  
Stat size: 587.05 KB  
Parsed size: 211.95 KB  
Gzipped size: 50.77 KB

lodash

modules

static/js/npm.auth0-js.8b4c40ff.chunk.js

node\_modules

dist

auth0.min.esm.js

static/js/npm.react-dom.ae9da6fc.chunk.js

node\_modules

react-dom

cjs

react-dom.production.min.js

static/js/npm.he.219f665a.chunk.js

node\_modules

he

he.js

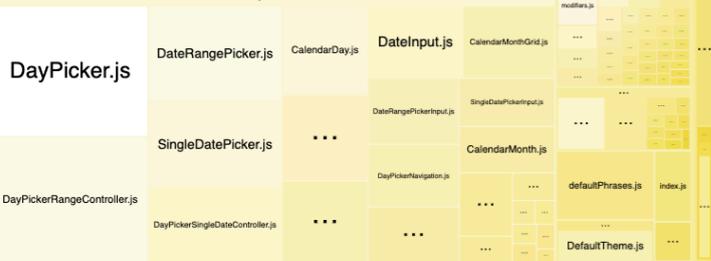
static/js/npm.react-dates.e940bf32.chunk.js

node\_modules

react-dates

lib

components



static/js/npm.material-ui.54fbc5b9.chunk.js

node\_modules

@material-ui

core

esm



static/js/npm.react-select.d9018cf8.chunk.js

node\_modules

react-select



static/js/npm.moment.b53004f7.chunk.js

node\_modules

moment

moment.js

static/js/npm.lodash.8d94c81c.chunk.js

node\_modules

lodash

static/js/main.260beb93.chunk.js

node\_modules

react-toastify

esm

static/js/npm.react-loading.01e28c15.chunk.js

node\_modules

react-loading

dist

react-loading.js

static/js/npm.react-tooltip.6e9160fb.chunk.js

node\_modules

react-tooltip

dist

static/js/npm.react-select-a34e9d12.browser.esm.js

node\_modules

react-select

dist

static/js/npm.styled-components.5ae54a37.chunk.js

node\_modules

styled-components

dist

static/js/npm.styled-components.browser.esm.js

static/js/npm.react-table.1030d46a.chunk.js

node\_modules

react-table

index.js

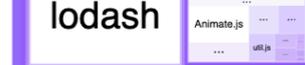


static/js/npm.react-smooth.497d87fd.chunk.js

node\_modules

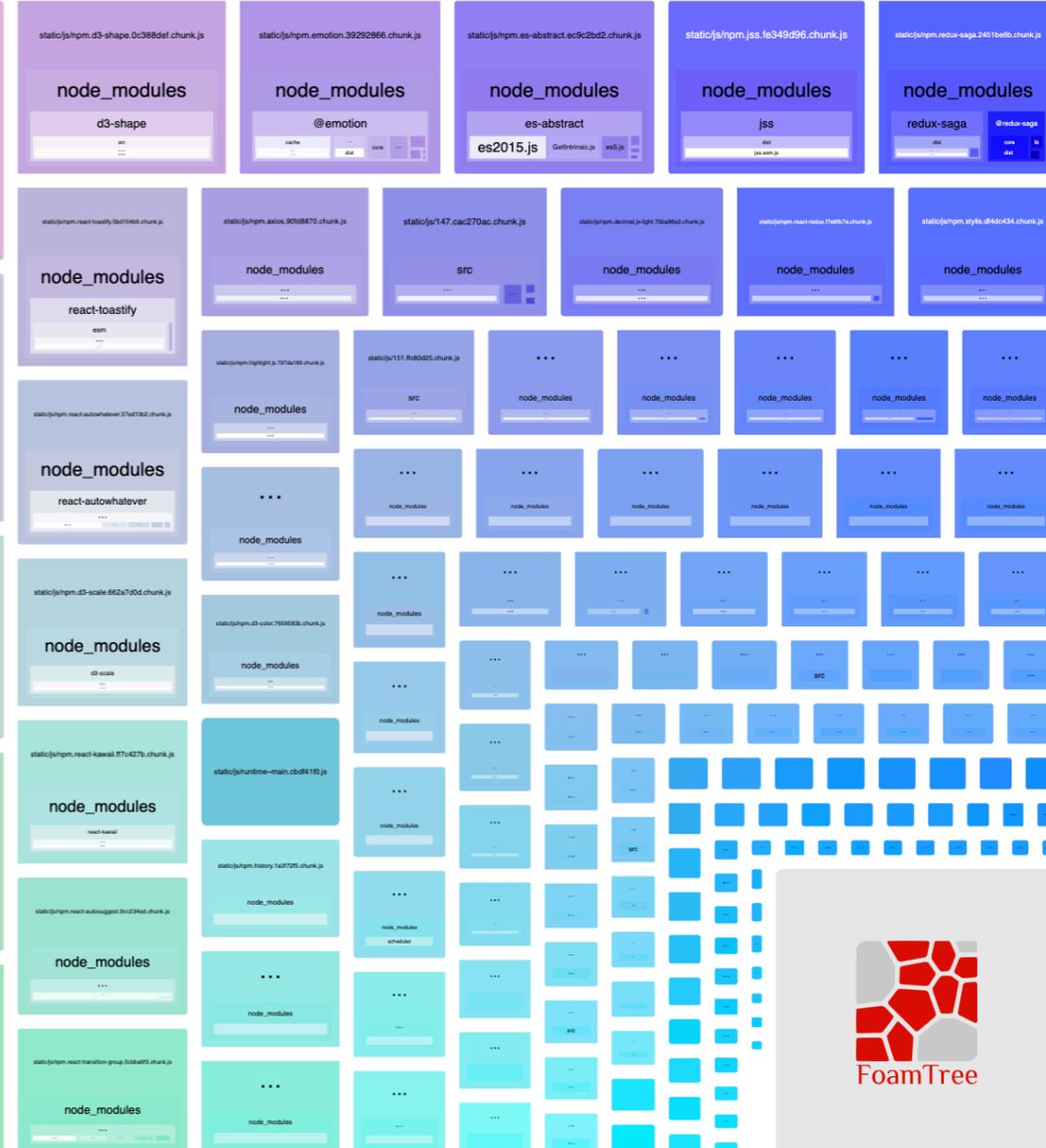
react-smooth

index.js



static/js/146.a2f8a8aa.chunk.js

src





# Modification de code, après Bundle Splitting

5KB (-70KB)

static/js/npm.recharts.1799e9d1.chunk.js

node\_modules

recharts

es6

index.js + 40 modules (concatenated)

node\_modules

recharts

es6

CartesianAxis.js Bar.js ... ErrorBar.js Label.js Tooltip.js ... Sector.js

Brush.js CartesianGrid.js ReferenceDot.js XAxis.js ... Rectangle.js

ChartUtils.js ReactUtils.js ... generateCategoricalChart.js Cross.js ...

lodash

modules

static/js/npm.auth0-js.8b4c40ff.chunk.js

node\_modules

dist

static/js/npm.recharts.1799e9d1.chunk.js

Stat size: 587.05 KB  
Parsed size: 211.95 KB  
Gzipped size: 50.77 KB

auth0.min.esm.js

static/js/npm.moment.b53004f7.chunk.js

node\_modules

moment

moment.js

static/js/npm.react-table.1030d46a.chunk.js

node\_modules

react-table

index.js methods.js pagination.js ...

static/js/npm.react-smooth.497d87fd.chunk.js

node\_modules

react-smooth

index.js + 3 modules (concatenated)

lodash

Animate.js ...

static/js/146.a2f8a8aa.chunk.js

src

pages

Problems

static/js/npm.react-dom.ae9da6fc.chunk.js

node\_modules

react-dom

cjs

react-dom.production.min.js

static/js/npm.react-dates.e940bf32.chunk.js

node\_modules

react-dates

lib

components

DayPicker.js DateRangePicker.js CalendarDay.js DateInput.js CalendarMonthGrid.js ...

SingleDatePicker.js ...

DayPickerRangeController.js ...

static/js/npm.he.219f665a.chunk.js

node\_modules

he

he.js

static/js/npm.material-ui.54fbc5b9.chunk.js

node\_modules

@material-ui

core

esm

TextField

Button.js Switch.js ...

Modal.js ...

utils

Fab.js ...

static/js/npm.react-select.d9018cf8.chunk.js

node\_modules

react-select

dist

react-select-a34e9d12.browser.esm.js chunk-5d200a41.browser.esm.js

static/js/npm.lodash.8d94c81c.chunk.js

node\_modules

lodash

static/js/npm.d3-shape.0c388def.chunk.js

node\_modules

d3-shape

static/js/npm.emotion.39292866.chunk.js

node\_modules

@emotion

static/js/npm.es-abstract.ec9c2bd2.chunk.js

node\_modules

es-abstract

es2015.js

static/js/npm.jss.f6349d96.chunk.js

node\_modules

jss

static/js/npm.redux-saga.2451be6b.chunk.js

node\_modules

redux-saga

static/js/npm.react-toastify.f07046d0.chunk.js

node\_modules

react-toastify

esm

static/js/main.260beb93.chunk.js

src

index.jsx + 47 modules (concatenated)

redux

entities

projects labels components

problems user Header

static/js/npm.react-astorever.27ef19d2.chunk.js

node\_modules

react-astorever

static/js/npm.react-loading.01e28c15.chunk.js

node\_modules

react-loading

dist

react-loading.js

static/js/npm.d3-scale.662a7d0d.chunk.js

node\_modules

d3-scale

static/js/npm.d3-color.769563b.chunk.js

node\_modules

d3-color

static/js/npm.react-kawaii.870427b.chunk.js

node\_modules

react-kawaii

static/js/runtime-main.cbdf4110.js

static/js/npm.history.1a37725.chunk.js

node\_modules

history

static/js/npm.react-autosuggest.9c234ed.chunk.js

node\_modules

react-autosuggest

static/js/npm.styled-components.5ae54a37.chunk.js

node\_modules

styled-components

dist

styled-components.browser.esm.js

static/js/npm.react-transition-group.5cbaf93.chunk.js

node\_modules

react-transition-group



On fait le bilan

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Grâce au Code Splitting: on apporte **uniquement** à l'utilisateur **ce dont il a besoin**, quand il en a **besoin**.

# On fait le bilan

Grâce au Code Splitting: on apporte **uniquement** à l'utilisateur **ce dont il a besoin**, quand il en a **besoin**.

Grâce au Bundle Splitting: on apporte **uniquement** à l'utilisateur **ce qui a changé depuis sa dernière visite**.

Pour résumer

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- Garder son JavaScript à moins de 200KB pour rendre une page

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- Garder son JavaScript à moins de 200KB pour rendre une page
- Utiliser le Code Splitting pour chaque composant non nécessaire au rendu initial

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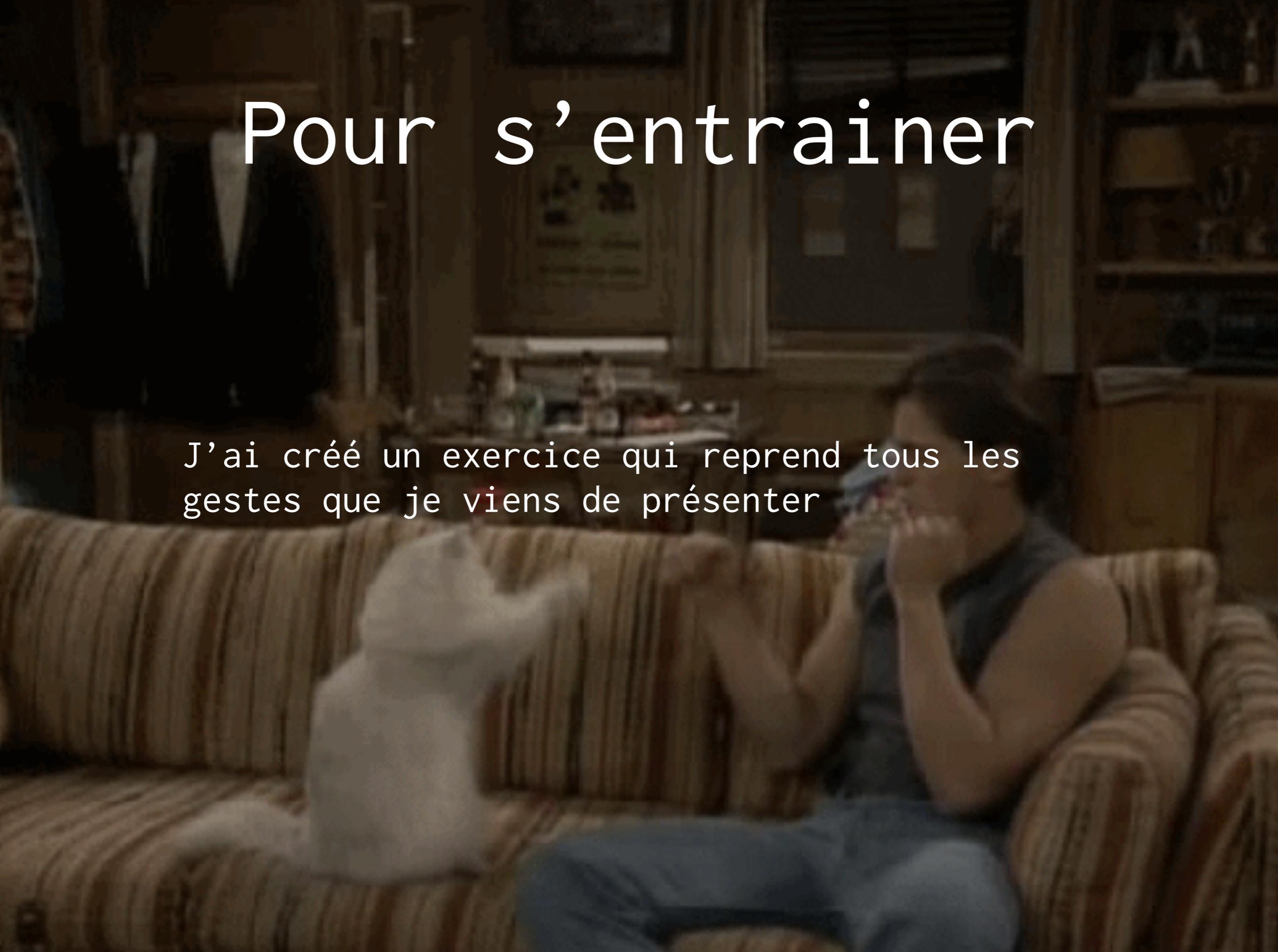
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- Ne pas exporter globalement ses composants ou fonctions

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- Garder son JavaScript à moins de 200KB pour rendre une page
- Utiliser le Code Splitting pour chaque composant non nécessaire au rendu initial
- Utiliser les imports allégés des grosses librairies
- Ne pas exporter globalement ses composants ou fonctions
- Utiliser le Bundle Splitting si on est en HTTP/2

# Pour s'entraîner

J'ai créé un exercice qui reprend tous les gestes que je viens de présenter



# Pour s'entraîner



[github.com/theodo/code-splitting-dojo](https://github.com/theodo/code-splitting-dojo)



Merci !

Des questions ?