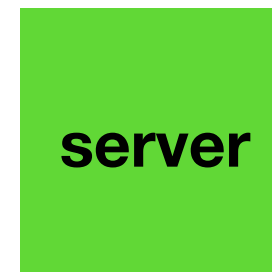
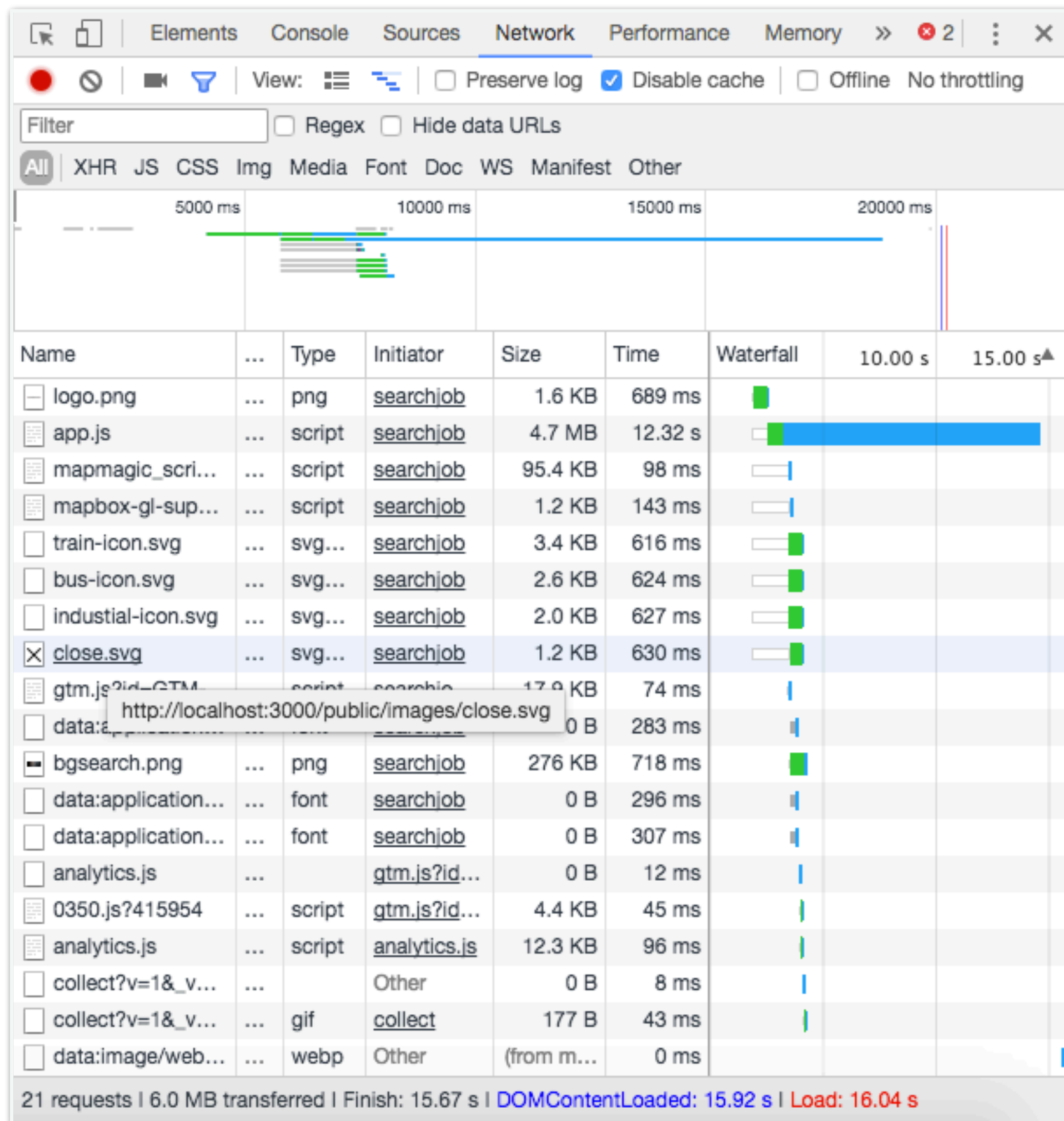


Optimize React on Production



<html>
app.js
styles.css



How to deal with huge file

- Reduce bundle size
- Eliminate render blocking JS & CSS

Webpack Config

Development

webpack.config.js

Build Speed

Production

webpack.production.config.js

optimization

Reduce Bundle Size

Minify JS

UglifyJS

[**https://github.com/webpack-contrib/uglifyjs-webpack-plugin**](https://github.com/webpack-contrib/uglifyjs-webpack-plugin)

Before (4.91 MB)

```
Hash: 989e9e78b71f4ce71f42
Version: webpack 2.5.1
Time: 25744ms
```

Asset	Size	Chunks			Chunk Names
app.js	4.91 MB	0	[emitted]	[big]	app
styles.css	794 kB	0	[emitted]	[big]	app

After (2.31 MB)

```
Hash: 91f87330d83ea25260a8
Version: webpack 2.5.1
Time: 67025ms
```

Asset	Size	Chunks			Chunk Names
app.js	2.31 MB	0	[emitted]	[big]	app
styles.css	794 kB	0	[emitted]	[big]	app

Before

21 requests | 6.0 MB transferred | Finish: 15.67 s | DOMContentLoaded: 15.92 s | Load: 16.04 s

After

21 requests | 3.5 MB transferred | Finish: 4.22 s | DOMContentLoaded: 3.70 s | Load: 4.23 s

Split Vendor

CommonsChunkPlugin

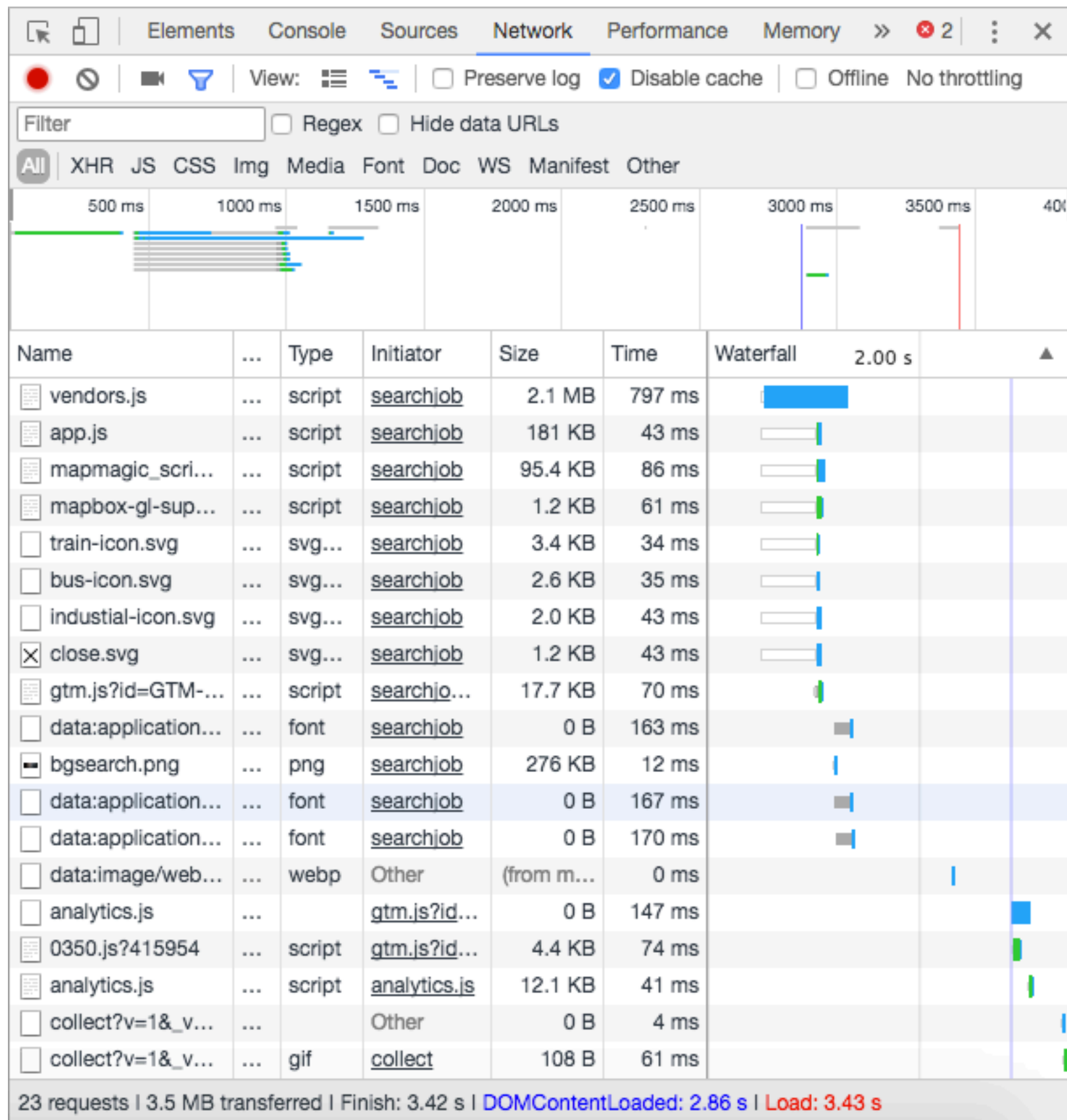
<https://webpack.js.org/plugins/commons-chunk-plugin/>

Hash: d59d14af72c000a249ed

Version: webpack 2.5.1

Time: 69657ms

Asset	Size	Chunks			Chunk Names
vendors.js	2.13 MB	0	[emitted]	[big]	vendors
app.js	182 kB	1	[emitted]		app
manifest.js	1.72 kB	2	[emitted]		manifest
styles.css	794 kB	1	[emitted]	[big]	app











Remove Unused CSS

PurifyCSS

<https://github.com/purifycss/purifycss>

```
> portfolio.tech-app@2.0.90 mincss /Users/panacholn/PortfolioTech-App  
> purifycss dist/styles.css public/plugins/bootstrap-flatly/bootstrap.min.css in  
dex.html dist/app.js --min --info --out dist/min-styles.css
```

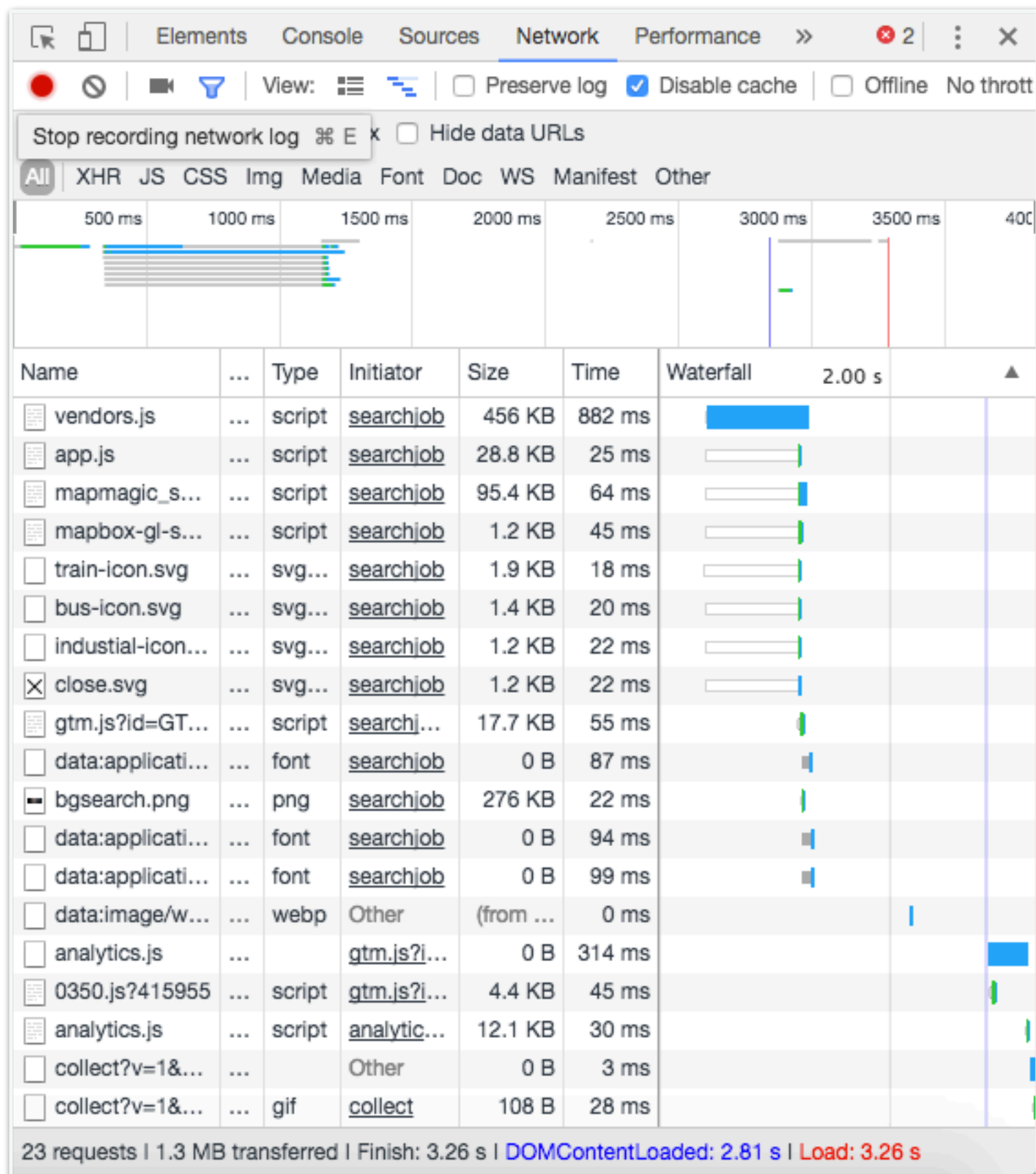
```
| PurifyCSS has reduced the file size by ~ 11.3%  
|
```

Name	^	Date Modified	Size	Kind
 app.js		Today, 6:03 PM	185 KB	JavaScript
 bootstrap.min.css		Mar 30, 2017, 6:22 PM	127 KB	CSS
 manifest.js		Today, 6:03 PM	2 KB	JavaScript
 min-styles.css		Today, 6:03 PM	808 KB	CSS
▶  server		Jun 6, 2017, 11:07 AM	--	Folder
▶  src		Jun 12, 2017, 6:02 PM	--	Folder
 styles.css		Today, 6:03 PM	794 KB	CSS
 vendors.js		Today, 6:03 PM	2.2 MB	JavaScript

Compress Response

compression

<https://github.com/expressjs/compression>







Prevent CSS, JS Blocking

Eliminate JS Blocking

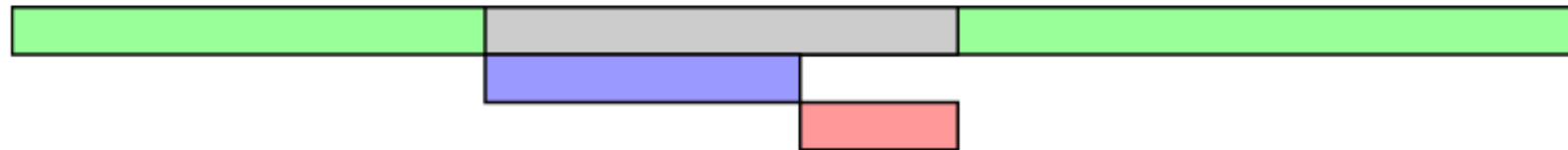
`<script defer>`

Legend

-  HTML parsing
-  HTML parsing paused
-  Script download
-  Script execution

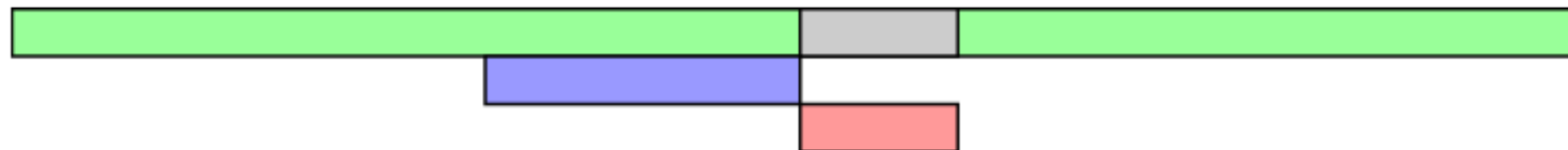
`<script>`

Let's start by defining what `<script>` without any attributes does. The HTML file will be parsed until the script file is hit, at that point parsing will stop and a request will be made to fetch the file (if it's external). The script will then be executed before parsing is resumed.



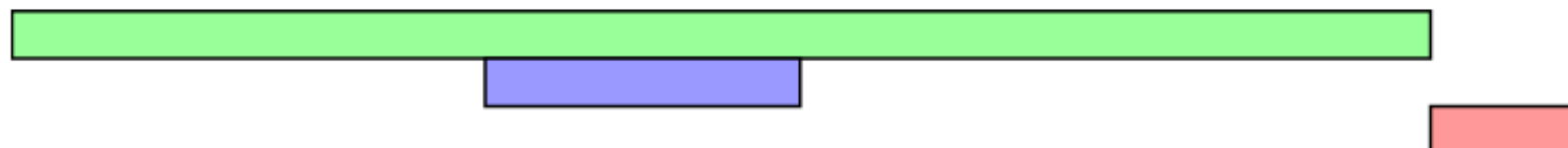
`<script async>`

`async` downloads the file during HTML parsing and will pause the HTML parser to execute it when it has finished downloading.



`<script defer>`

`defer` downloads the file during HTML parsing and will only execute it after the parser has completed. `defer` scripts are also guaranteed to execute in the order that they appear in the document.

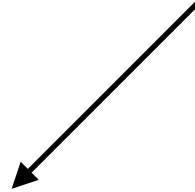


Eliminate CSS Blocking

load CSS asynchronously

[**https://github.com/filamentgroup/loadCSS**](https://github.com/filamentgroup/loadCSS)

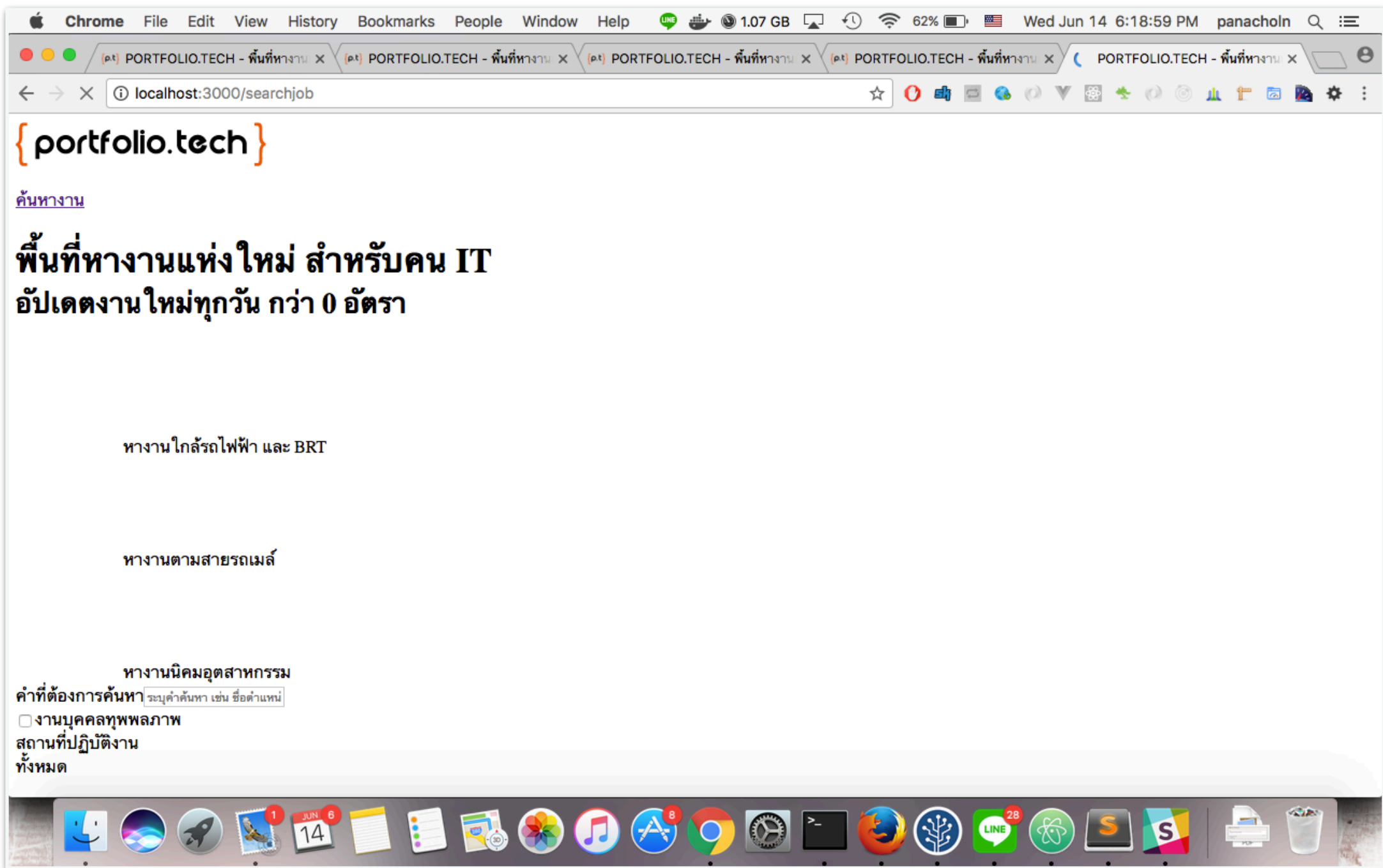
HTML Rendered



HTML

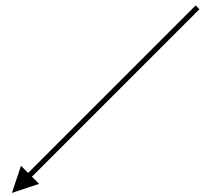
CSS

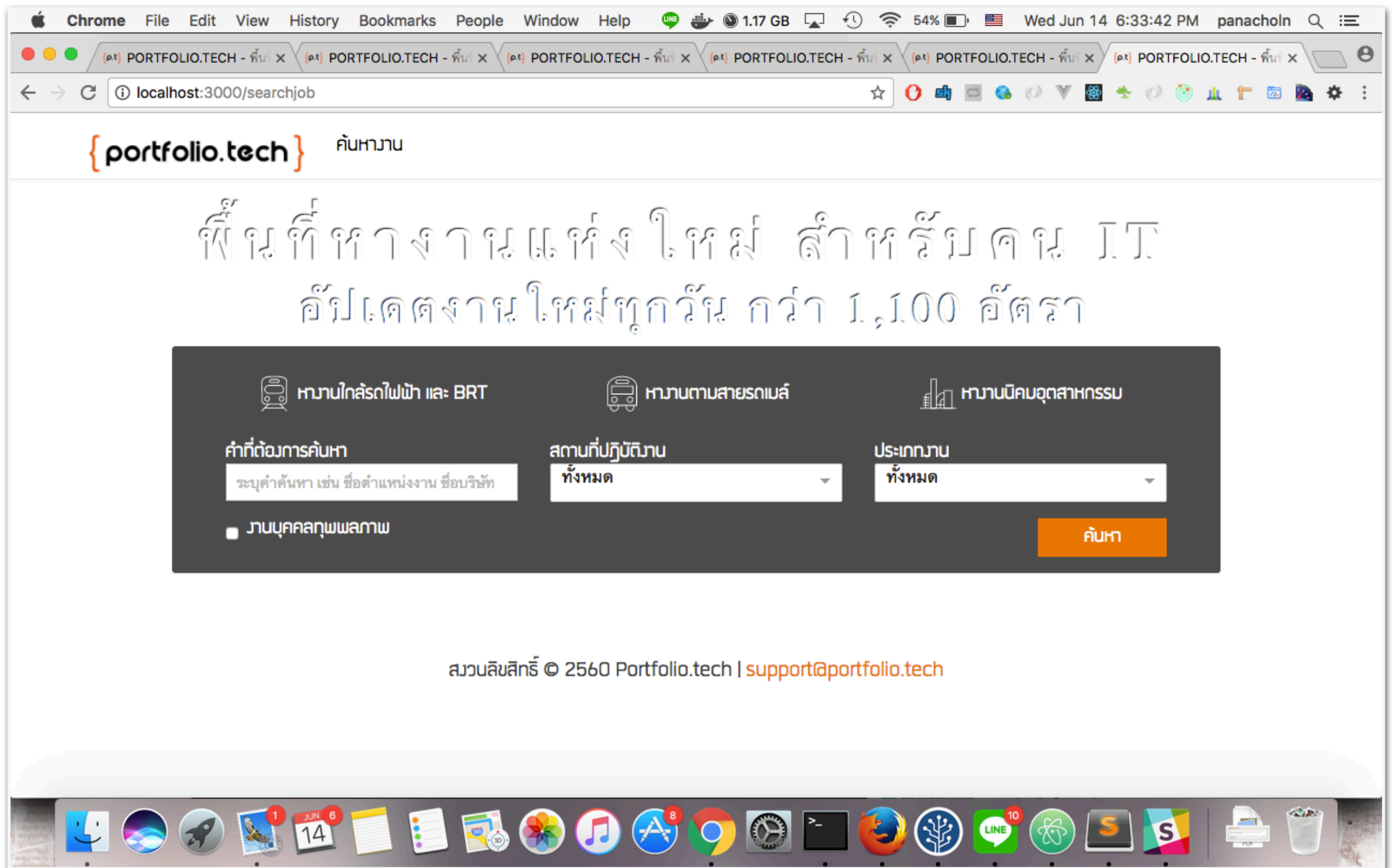
JS

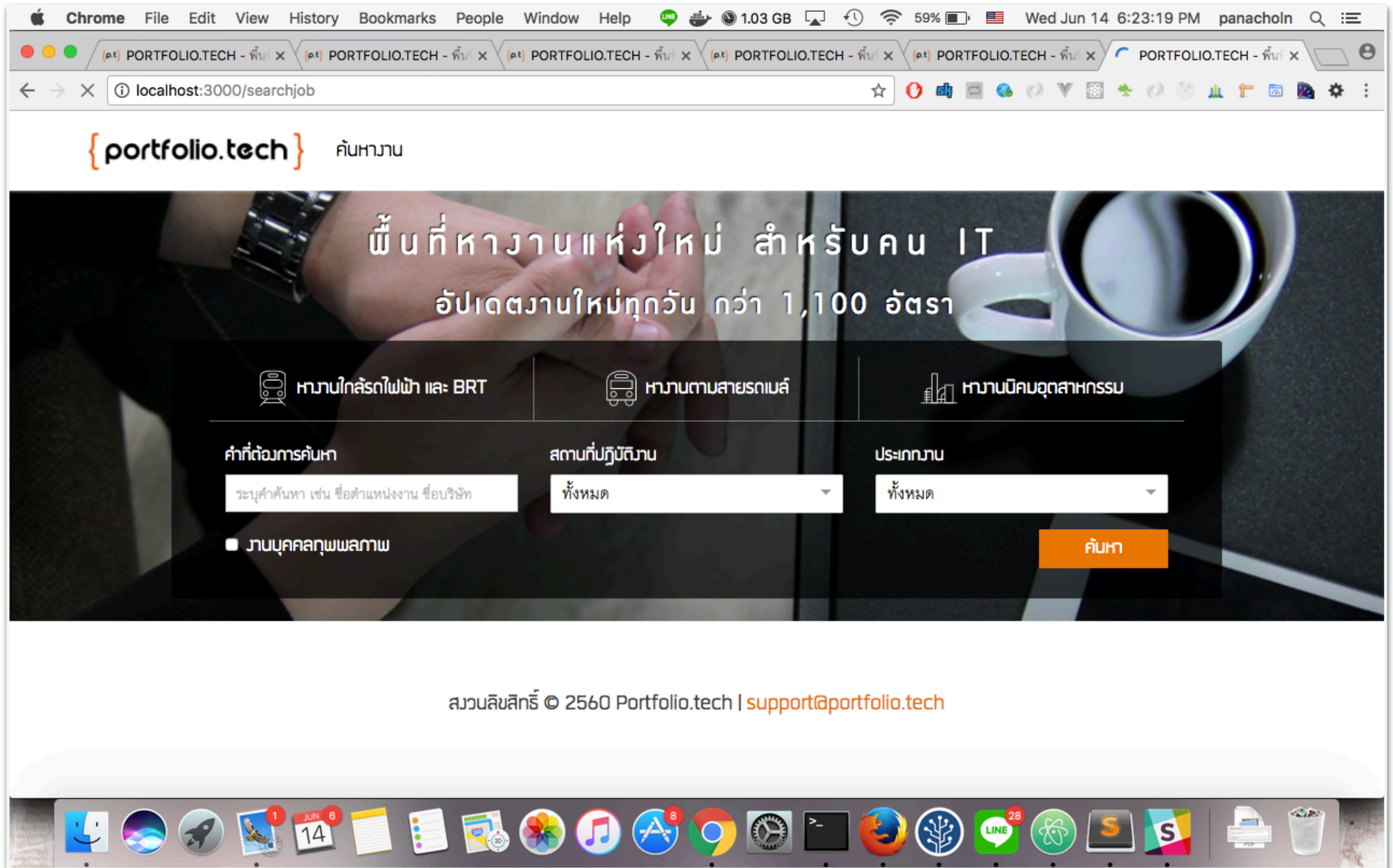


Critical CSS

Inline Critical CSS







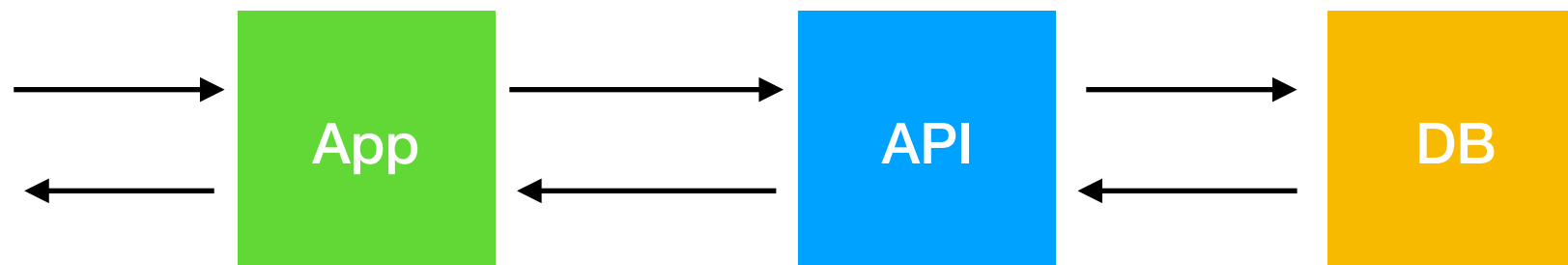
Reduce first request load time

static caching

<https://github.com/kwhitley/apicache>

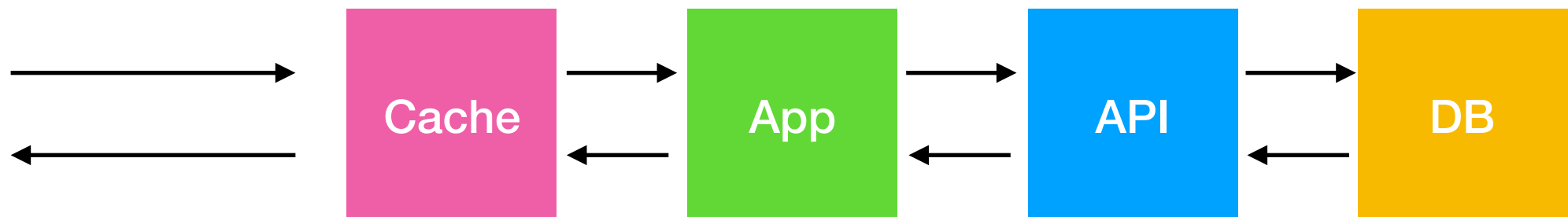
<https://github.com/ptarjan/node-cache>

Without Caching

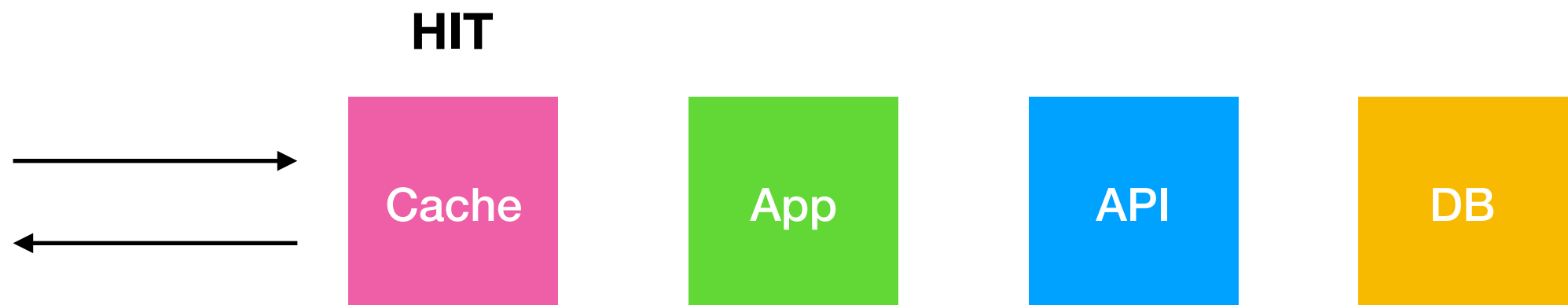


Miss Caching


MISS




Hit Caching



without cache

Name	...	Type	Initiator	Size	Time	Waterfall	4.00 s	6.4▲
 joblist	...	doc...	Other	14.8 KB	3.18 s			

with cache

Name	...	Type	Initiator	Size	Time	Waterfall	2.00 s	3.0▲
 joblist	...	doc...	Other	14.9 KB	68 ms	