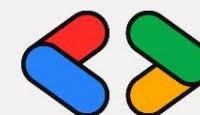


L'outillage javascript.

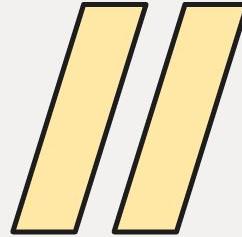
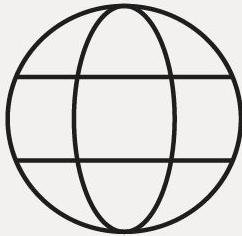
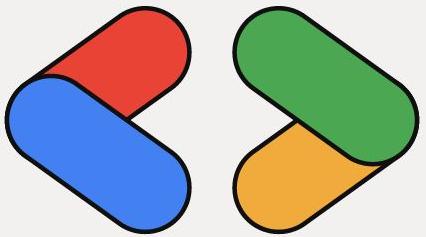
Ahmadou Waly Ndiaye (Sir Kane)
TheCodingMachine, Lead developer



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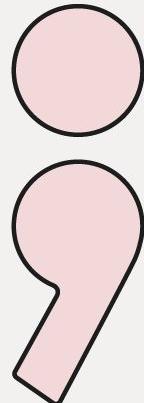
Sommaire

- (1) Minification
- (2) Bundling
- (3) Tree Shaking
- (4) Code splitting



(1)

Minification



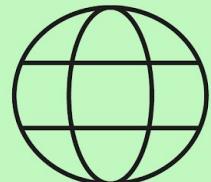
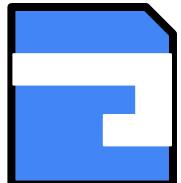
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**Objectif: Réduire le poids des fichiers
à charger par le navigateur**



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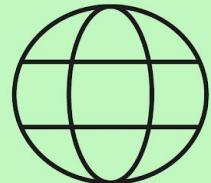
math.js

```
export function add(firstNumber, secondNumber) {
  return firstNumber + secondNumber;
}

// Recursivity
export function factorial(number) {
  if (number === 0) {
    return 1;
  }

  return number * factorial(number - 1);
}
```

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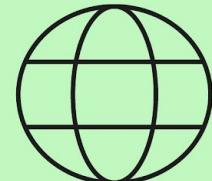
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math.js

```
export function add(firstNumber, secondNumber) {  
    return firstNumber + secondNumber;  
}  
  
// Recursivity  
export function factorial(number) {  
    if (number === 0) {  
        return 1;  
    }  
  
    return number * factorial(number - 1);  
}
```



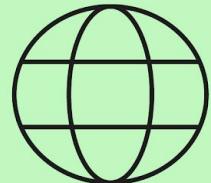
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math.min.js

```
export function add(firstNumber, secondNumber) {  
    return firstNumber + secondNumber  
}  
  
export function factorial(number) {  
    if (number === 0)  
        return 1  
  
    return number * factorial(number - 1)  
}
```



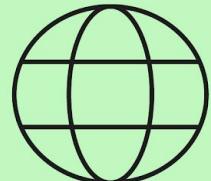
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math.min.js

```
export function add(firstNumber, secondNumber) {  
  return firstNumber + secondNumber  
}  
  
export function factorial(number) {  
  return number === 0  
    ? 1  
    : number * factorial(number - 1)  
}
```



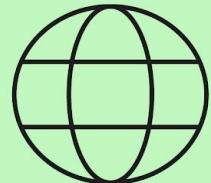
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math.min.js

```
export function add (f,s){  
  return f+s  
}  
  
export function factorial (n)  
{  
  return n === 0  
    ? 1  
    : n * factorial(n - 1)  
}
```



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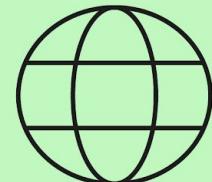


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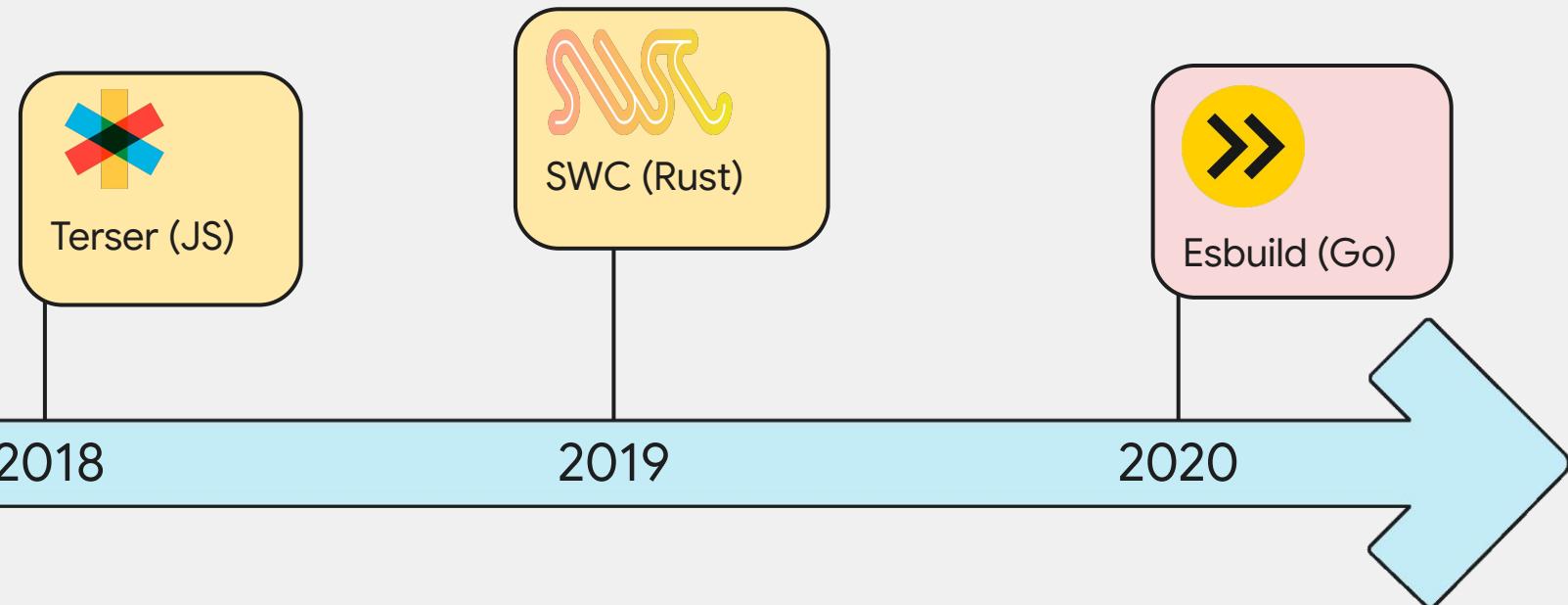
math.min.js

```
export function add(f,s){return f+s}export function factorial(n){return n==0?  
1:n*factorial(n - 1)}
```

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Minification: Utils



Benchmark: <https://esbuild.github.io/>

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FCP

First Contentful Paint



Les bonnes valeurs FCP sont inférieures ou égales à 1,8 seconde. Les valeurs médiocres sont supérieures à 3 secondes.

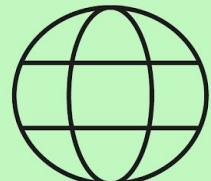
<https://web.dev/articles/lcp?hl=fr#what-is-a-good-lcp-score>
<https://web.dev/articles/fcp?hl=fr#what-is-a-good-lcp-score>

LCP

Largest Contentful Paint



Une bonne valeur LCP est de 2,5 secondes ou moins.



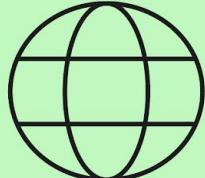
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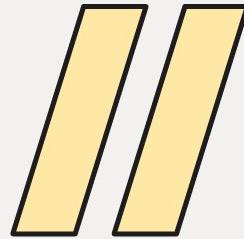
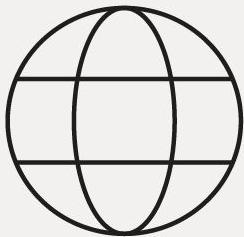
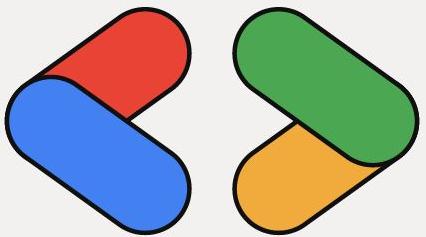


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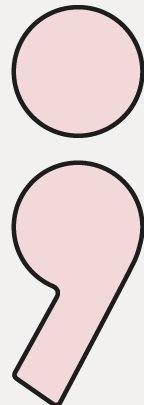
**"Don't minify what you
don't need. Minification
without tree-shaking is
like compressing a trash
can without taking out the
garbage."**

Philip Walton





(2) Bundling



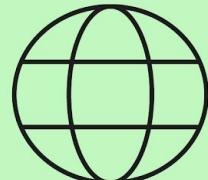
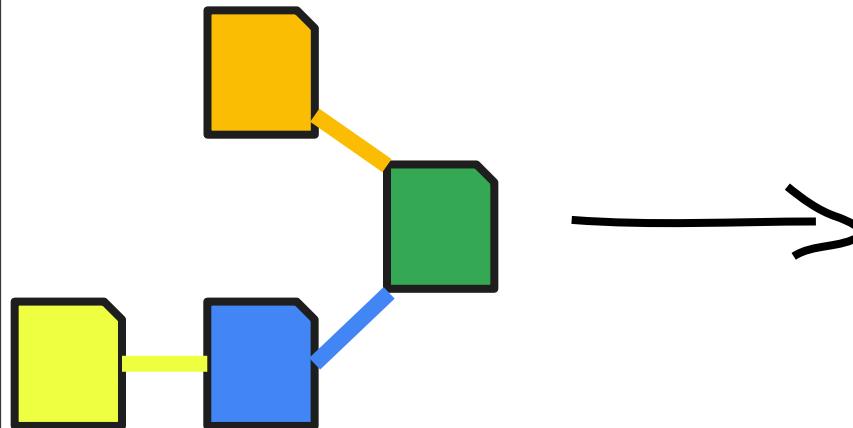
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Objectif: Concatener les fichiers en 1



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```
// math.js
export const add (a, b) {
  return a + b
}
```

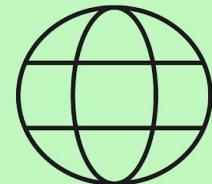
```
// index.js
import { add } from './math'

console.log(add(2, 3))
```



```
// bundle.js
const add (a, b) {
  return a + b
}

console.log(add(2, 3))
```

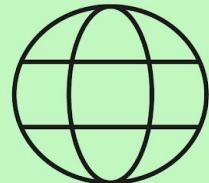


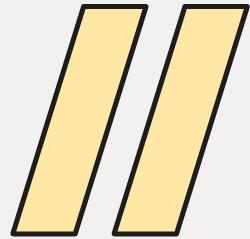
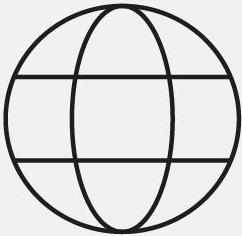
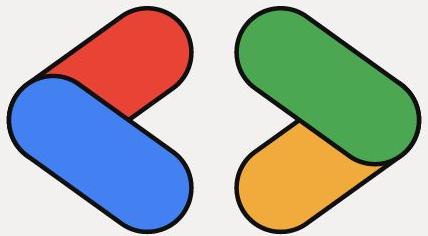
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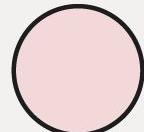
DEMO A red circular icon containing a white right-pointing triangle, resembling a play button or a video thumbnail.





(3)

Tree Shaking



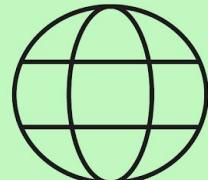
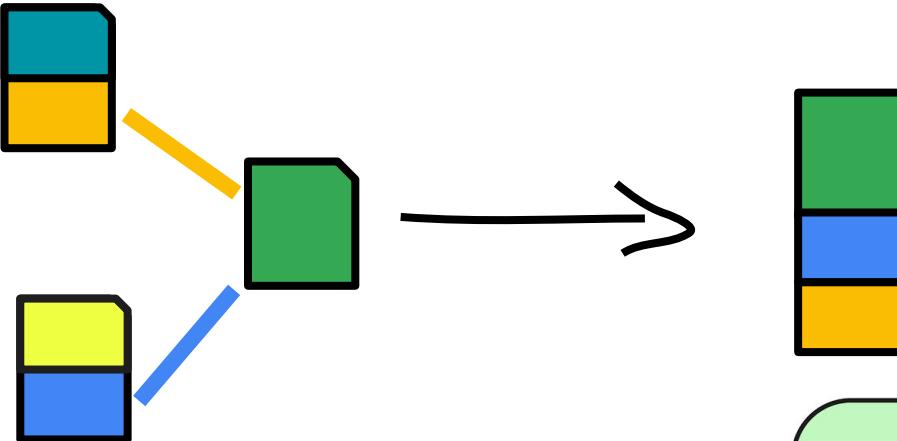
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Objectif: Supprimer le code non utilisé



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```
// math.js
export const add (a, b) {
  return a + b
}
```

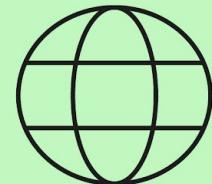
```
// index.js
import { add } from './math'

console.log(add(2, 3))
```

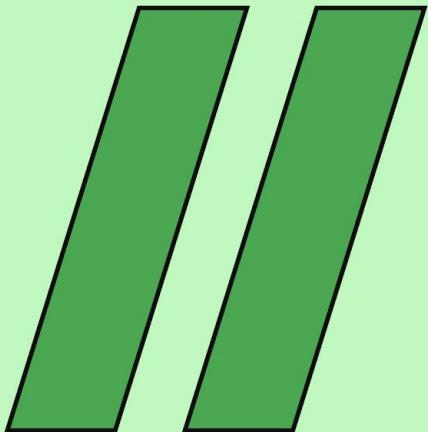


```
// bundle.js
const add (a, b) {
  return a + b
}

console.log(add(2, 3))
```



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Code non tree shakable

```
// math.js
const math = {
  add: (a, b) => a + b,
  subtract: (a, b) => a - b
}

export default math
```

```
// index.js
import math from './math'

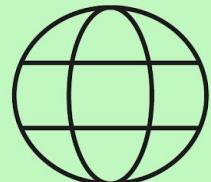
console.log(math.add(2, 3))
```

Code tree shakable

```
// math.js
export const add = (a, b) => a + b
export const subtract = (a, b) => a - b
```

VS

```
// index.js
import { add } from './math'
console.log(add(2, 3))
```



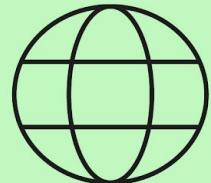
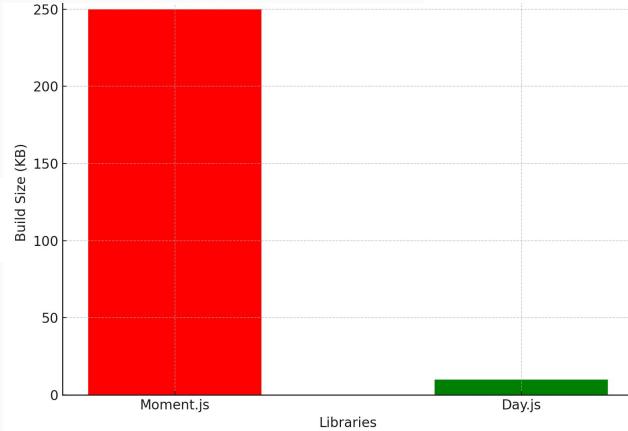
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```
// momentjs
import moment from "moment";
const today = moment().format("YYYY-MM-DD");

// Dayjs
import dayjs from "dayjs";
const today = dayjs().format("YYYY-MM-DD");
```

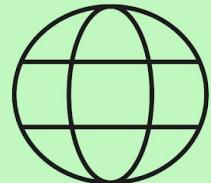


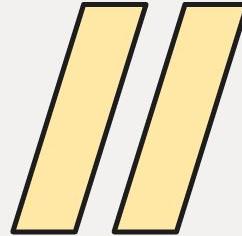
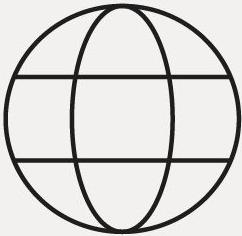
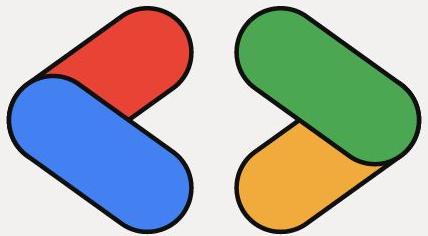
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DEMO A red circular icon containing a white right-pointing triangle, commonly used as a play button or demo link.

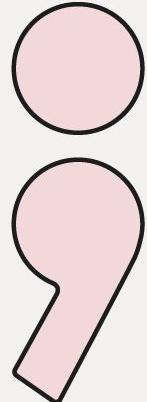




(4)

Code splitting

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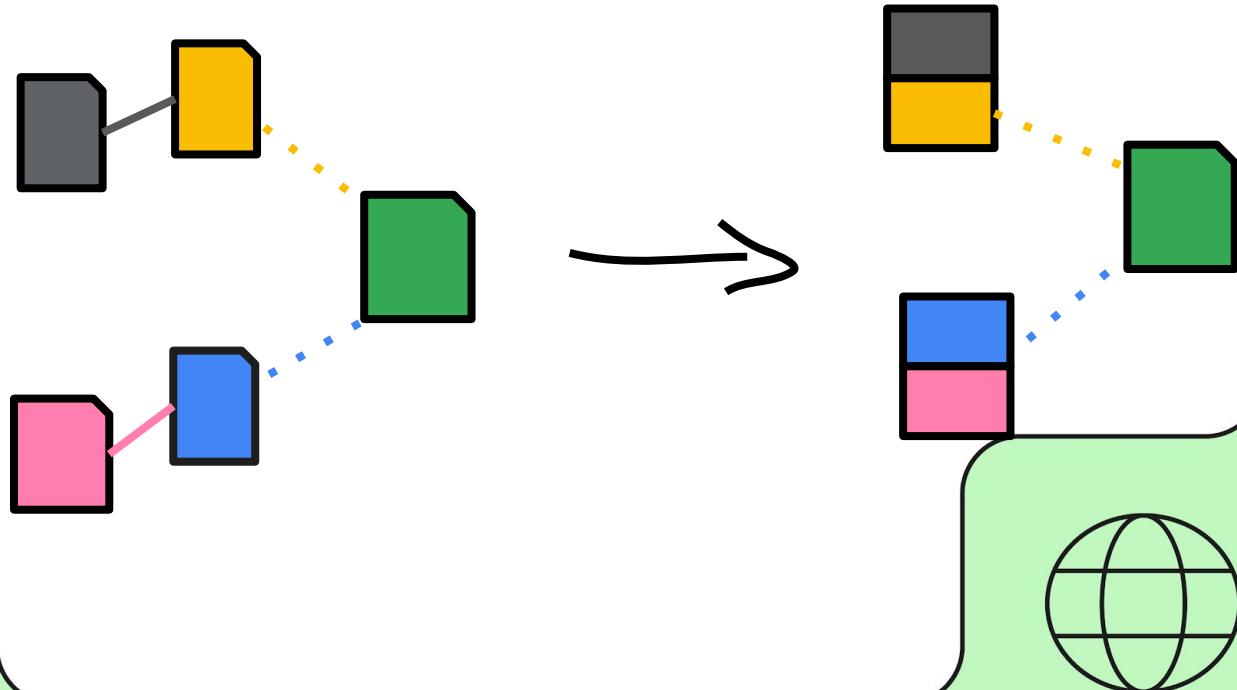


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Objectif: Charger le fichier à la demande



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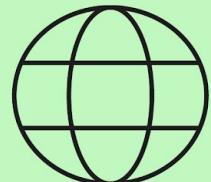
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Refs:

- L'import dynamique

```
document.querySelector('button').addEventListener("click", async () => {  
  const { hello } = await import("./utils/hello.js");  
  console.log(hello("Sir Kane"));  
});
```

- Le composant “defineAsyncComponent” de VueJS
<https://vuejs.org/guide/components/async>
- Les directives client sur Astro
<https://docs.astro.build/fr/reference/directives-reference/#directives-client>

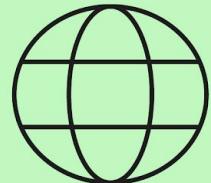


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DEMO A red circular icon containing a white right-pointing triangle, commonly used as a play button or demo link.

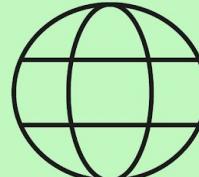


Les ressources / refs

- Les demos: <https://github.com/sir-kain/js-tools>
- Le code splitting en action avec Astro:
<https://docs.astro.build/fr/reference/directives-reference/#directives-client>
- Les metrics lighthouse
<https://web.dev/articles/lcp?hl=fr#what-is-a-good-lcp-score>
<https://web.dev/articles/fcp?hl=fr#what-is-a-good-lcp-score>
- Conf de Hubert Sablonnière sur la compression
<https://www.youtube.com/watch?v=zxiJXQpRa4E>
- Bundlephobia pour consulter la taille d'un package npm
<https://bundlephobia.com/package/moment@2.30.1>



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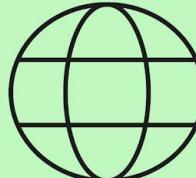


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