



# Recent Progress on Decentralized Cross-Dressing

The Study of Side-Effects in Hormone Therapy

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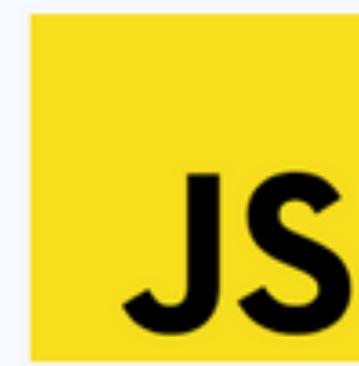
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# Working with JavaScript?

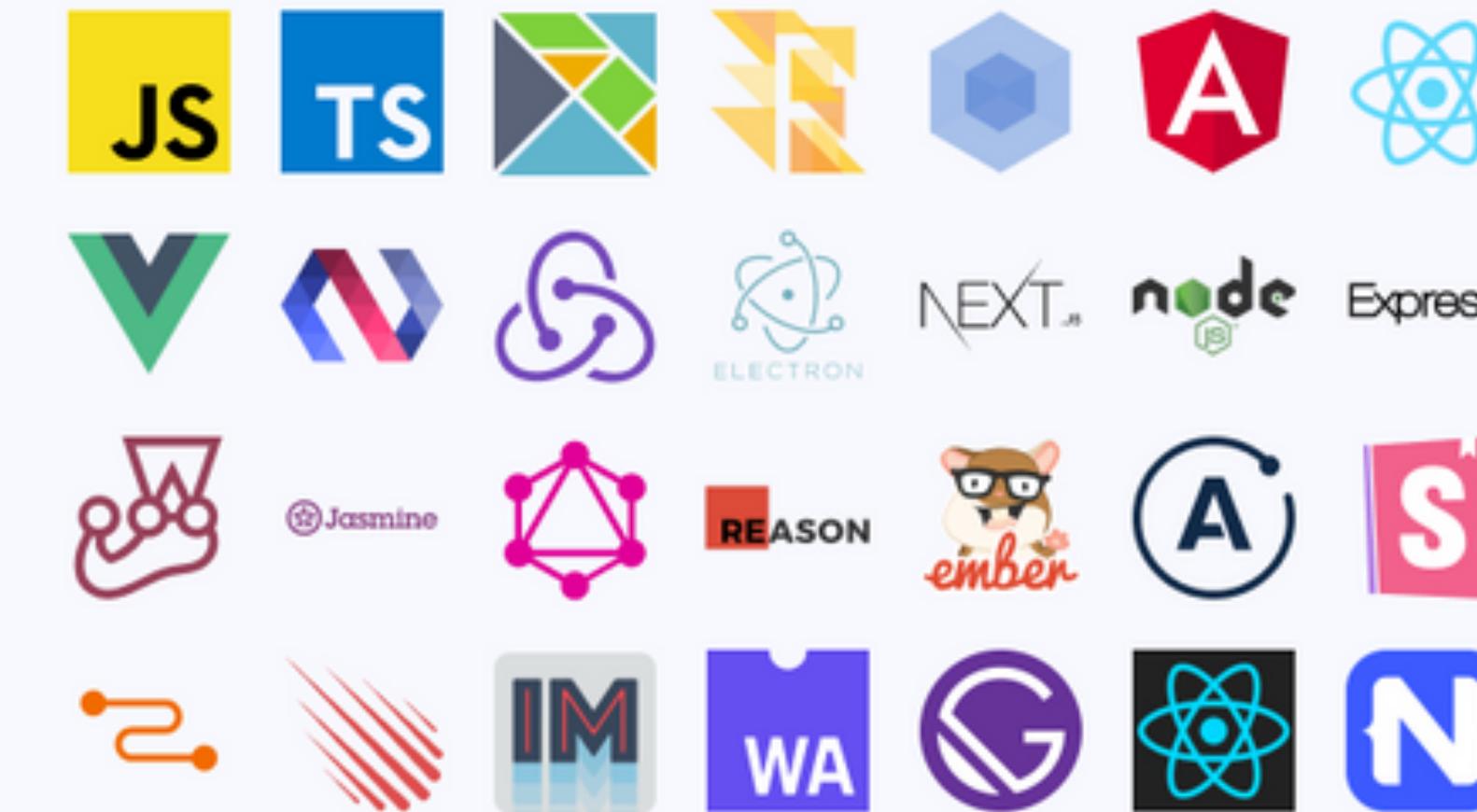


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2009

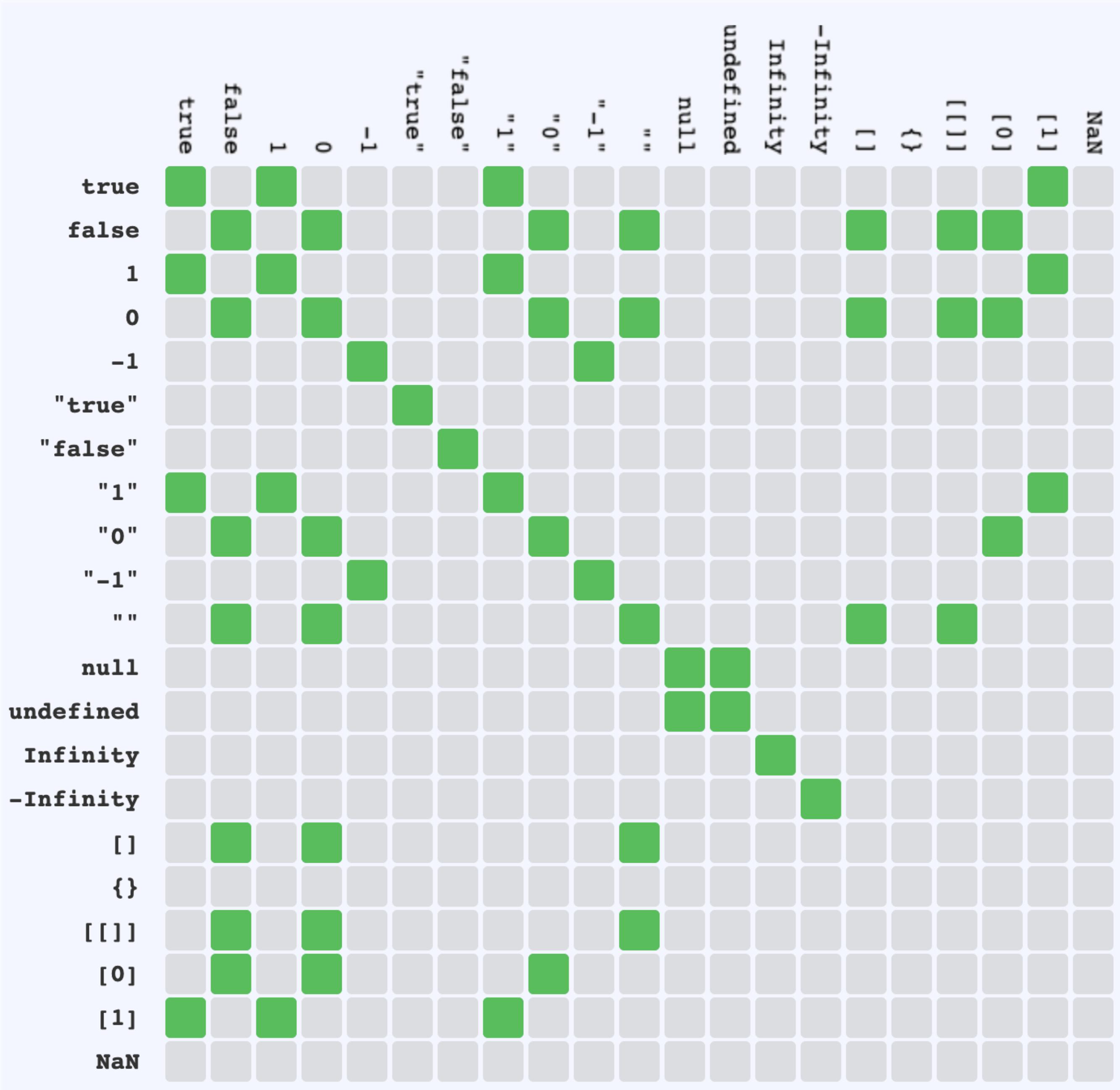


2019



//CodeTrace

JavaScript “10-year challenge” - runtimes & frameworks



# Why ==?

When you have a longer ==... .

== compares for equality *after doing necessary type conversions.*



```
// First, we must get user by id
CallEndpoint("api/getidbyusername/hotcakes", function(result) {
    CallEndpoint("api/getfollowersbyid/" + result.userID, function(result) {
        CallEndpoint("api/someothercall/" + result.followers, function(result) {
            CallEndpoint("api/someothercall/" + result, function(result) {
                CallEndpoint("api/someothercall/" + result, function(result) {
                    // Ahhhhhh... but you didn't believe you'd end up here
                });
            });
        });
    });
});
}); // Always use semicolons; at work and at home.
```



# **JS Is Not That Evil**



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# JS Runtimes

- Browsers (w/ transpilers e.g. Babel; vanilla JS)
- Server: Node.js, *deno (future)*
- Desktop: Electron, nw.js, etc.
- Mobile phone: React Native, Cordova, etc.
- IoT: IoT.js (available on STM32F4, etc.)





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js 可以



张倩如

函数式



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理直气壮



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# “Functional Programming” in JS?

- `map()` and `filter()`

```
[0x82df, 0x5229, 0x56fd, 0x5bb6, 0x751f, 0x6b7b, 0,
 0x4ee5, 0xff0c, 0x5c82, 3, 0x56e0, 0x7978, 8,
 0x798f, 0x907f, 0x8d8b, 0x4e4b]
  .filter( x => x > 42 )
  .map( x => String.fromCharCode(x) )
  .reduce( (xs, x) => xs + x );
```

- Pipeline operator & smart pipelines ([Babel REPL](#), [A post](#))

```
let person = { score: 25 };
```

```
let newScore = person.score
  |> double
  |> add(7, #)
  |> boundScore(0, 100, #); // boundScore(0, 100, add(7, double(person.score)))
```

```
newScore //=> 57
```



# “Functional Programming” in JS?

- do expressions (Babel stage-1)

```
let x = do {  
  if      (foo()) { f() }  
  else if (bar()) { g() }  
  else                { h() }  
};
```

- Optional chaining (Babel stage-1)

```
const g = f(?, 1, ?);
```



# More ECMAScript Proposals

- Repository (<https://github.com/tc39/proposals>)



# More on Class

```
class ColorFinder {  
    static #imPrivate = "sth";  
    static method() {  
        // Accessing private fields  
        this.#iAmPrivateToo;  
    }  
    #imPrivateToo;  
    @readonly // Decorator  
    imNotZero = 0; // Fields  
}
```



# Pattern Matching (cont.) (Babel NYI)

```
let outOfBoundsPoint = p => match (p) {  
  { x > 100, y }: true,  
  { x, y > 100 }: true,  
  else: false  
}
```



# Unicode Property Escapes (ES2018)

```
const regex = /^\\P{Decimal_Number}+$/u;  
regex.test('Իմ օդաբանը լի է օձածերով');  
// → true
```

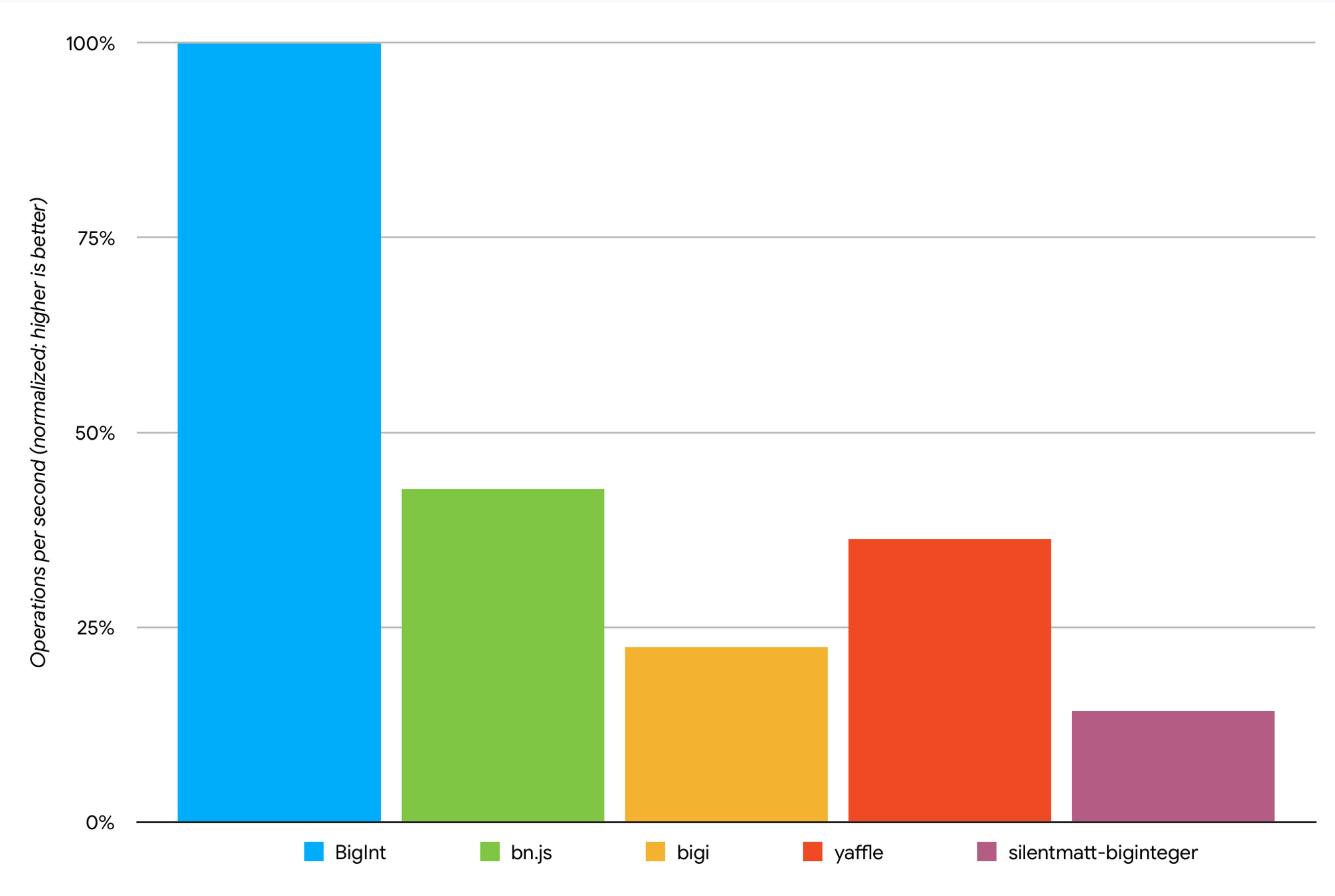
```
const regex = /^[^\P{P}]+$/u; // Punctuations

regex.test('?.,;! ¡¿。、・');

// → true
```

# BigInt (Babel parse only; V8 implemented)

1234567  
// → 15





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# Current Frontend

- Single Page Application



```
1 <!DOCTYPE html>
2 <html ng-app="hiocsApp">
3 <head>
4   <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
5   <meta charset="UTF-8" >
6   <meta http-equiv="X-UA-Compatible" content="IE=edge,Chrome=1" />
7   <meta http-equiv="X-UA-Compatible" content="IE=9">
8   <title>中大教务系统</title>
9
10  <link rel="stylesheet" href="tpl/nav/nav.css" type="text/css">
11  <link rel="stylesheet" href="tpl/nav/iconNav.css" type="text/css">
12  <link rel="stylesheet" href="tpl/index/bussiness.css" type="text/css">
13  <link rel="stylesheet" href="tpl/login/login.css" type="text/css">
14  <link rel="stylesheet" href="css/lycea.css" type="text/css">
15  <link rel="stylesheet" href="css/index.css" type="text/css">
16  <link rel="stylesheet" href="css/pageLayout.css" type="text/css">
17  <link rel="stylesheet" href="tpl/html/culture/cultrue.css" type="text/css">
18  <link href="https://static.geetest.com/static/silver/style.1.2.9.css" rel="stylesheet">
19  <link href="https://static.geetest.com/static/wind/style.1.4.6.css" rel="stylesheet">
20  <link rel="icon" type="image/x-icon" href="images/favicon.ico">
21
22 </head>
23 <body ng-controller="hiocsCtr as ocsCtr" resize-body ng-class="{'thin-left-nav':ocsCtr.thinLeftNav}">
24 <!--<state-vis style="position:fixed; bottom: 0; width:800px;"></state-vis>-->
25 <div class="tc zhe" style="width: 100%; height: 100%; text-align: center;" ng-show="showLoading">
26   
27 </div>
28 <div class="module" ui-view=""></div>
29
30
31 <!-- javascript文件统一在Global.js里面加载 -->
32 <script type="text/javascript" src="js/GlobalUrl.js"></script>
33 <script type="text/javascript" src="js/Global.js"></script>
34 </body>
35 </html>
36
```



# Current Frontend

- Single Page Application
- Progressive Web Application (a web app that is more native-alike)

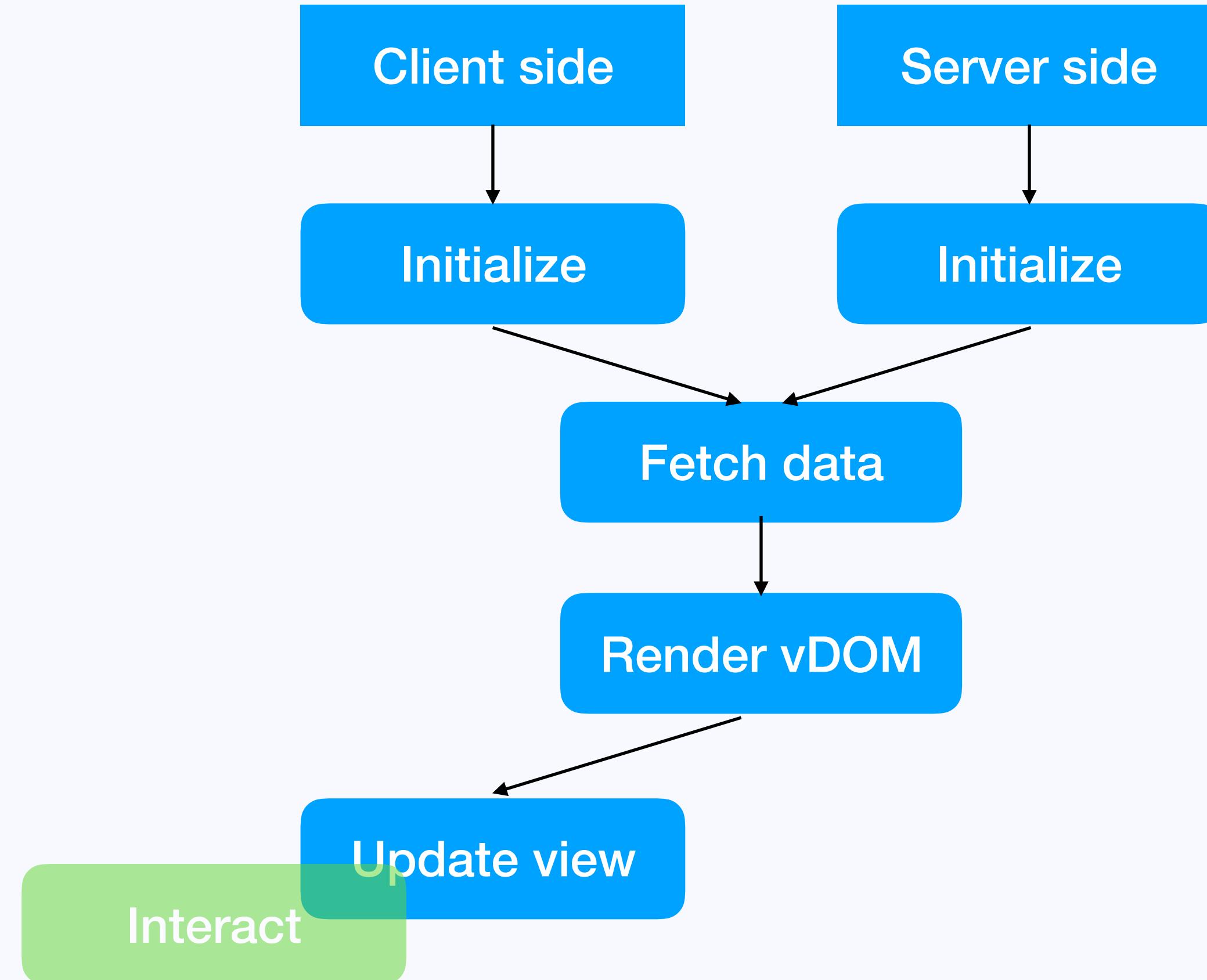


# CSR: How to SEO?

- SSR (abbr. Server-Side Rendering)



# Rendering



# Current Frontend

- Single Page Application
- Progressive Web Application (a web app that is more native-alike)
- WebAssembly



# Conclusions

- Don't do unnecessary ==
- 



# See Also

- John Resig - Playing with ECMAScript 4 (<https://johnresig.com/blog/playing-with-ecmascript-4/>)
- ECMAScript 4 の Draft をざっくり読んでみた (<http://tech.nitoyon.com/ja/blog/2007/10/30/es4-overview/>)
- Uniform Map (<https://uniform.wingzero.tw/>)

