

I

verb

preposition

JavaScript.

I laugh at JavaScript.

verb

at
preposition

I am scared of JavaScript.

verb

preposition



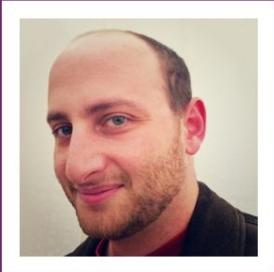
Idan Gazit
@idangazit



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@idangazit



HEROKU



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@idangazit



HEROKU



Modern JS

Django Under The Hood
November 2016

Civilized Modern JS

Django Under The Hood
November 2016

how
to
work
with

~~Modern JS~~

without missing Python terribly

Django Under The Hood
November 2016

```
{ } () ;
```

noise

why have classes when we can have

prototypes

for *thing* in *list*:

for *k, v* in *mydict.items()*:

```
foo(function (a) {  
  bar(a, function (b) {  
    baz(b, function(c) {  
      qux(c, function(d) {  
        quux(d, function(e) {  
          xyzzy(e, function(f) {  
            boom(f, function(g) {  
              // Callback hell  
            })  
          })  
        })  
      })  
    })  
  })  
})  
})
```



Caution!

Ongeluckige Voyagie,
Van't
S C H I P B A T A V I A,
Nae de Oost-Indien.

Gebleven op de Abrolhos van Frederick Houtman, op de
hoogte van 28 graet b.v. Zuiden de Linie Äquinoctiael.
Opgetogen onder den E. FRANCOYS PELSERT.

Verbatende /

Soo't verongelucken des Schips / als de gruwelijcke
Moorderhen onder 't gebergde Scheepsvolck op 't Eiland
Bataviaes Kerck-hof voorgevallen, nevens de Straffe de Hamda-
digers overgekomen. Geschiet in de jaren 1628, en 1629.

Nevens

Een Treur-bly-eynde Ongeluck, des Oost-Indische Com-
pannies Dienaers in 't jaer 1636. weder-varen, in 't Co-
nincklike Hof van Siam, in de Stadt India, onder de directie
van den E. JEREMIAS van VLIET.

Als mede

De groote Tyrannye van A B A S, Coninck van Persien/
Anno 1645. begaen aan sijn grootste Heeren des Rycks/ in
sijn Conincklyck Hof tot Espan.

Alles door een Liefhebber uyt verscheyde Schriften te samen ghestelt, ende tot
waerschouwinghe aller derwaerts varenden Perfoonen, in 't licht gege-
ven; oock met veel schoone kopere Platen verrückt.



Tot AMSTERDAM,
Voor J A N J A N S Z. Anno 1647.

Batavia,
a crazy Python
interpreter in JS

(crazy like a fox)

(thanks, Russ)

How did we get here?

What does here look like?



Framework Wars

ZOMG is Django relevant anymore?

One True Way™ To Javascript

a tale of

Two JavaScripts

2 JAVASCRIPT
2 FURIOUS

Browsers Node

ENGINES

V8 (*Chrome*) ----- **V8** (*Node*)
***Monkey** (*FF*)
Squirrelfish (*Safari*)
Chakra (*IE*)

Browsers Node

ENGINES

V8 (*Chrome*) ----- **V8** (*Node*)
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PACKAGING

by-hand
bower

NPM

Browsers Node

ENGINES

V8 (*Chrome*) ----- **V8** (*Node*)
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Squirrelfish (*Safari*)
Chakra (*IE*)

PACKAGING

by-hand
bower

NPM

IMPORTS

<script>
require.js

require()

ECMAScript

Version 5

ECMAScript

Version 5

Version 6 git.io/es6features

ESnext

Version 5

Version 6 “ES2015”

Version 7 “ES2016”

Version 8 “ES next”

...

TC39 Process

Stage-0 strawman

Stage-1 proposal

Stage-2 feature

Stage-3 candidate

Stage-4 finished

git.io/es-next

Compilers/polyfills										Desktop browsers																Servers/runtimes												Mobile
56%	71%	48%	59%	18%	11%	83%	93%	86%	92%	92%	94%	94%	97%	97%	97%	54%	100%	100%	5%	4%	21%	52%	97%	97%	66%	96%	59%	5%	10%	25%	54%							
Traceur	Babel + core-js ^[2]	Closure	Type-Script + core-js	es6-shim	IE 11	Edge 13 ^[4]	Edge 14 ^[4]	FF 45 ESR	FF 49	FF 50 Beta	FF 51 Aurora	FF 52 Nightly	CH 54, OP 41 ^[1]	CH 55, OP 42 ^[1]	CH 56, OP 43 ^[1]	SF 9	SF 10	SF TP	WK	KQ 4.14 ^[5]	PJS	Node 0.12 ^[6]	Node 4 ^[6]	Node 6.5 ^[6]	Node 7 ^[6]	Echo JS	XS6	JXA	AN 4.4	AN 5.0	AN 5.1	iOS 9						
0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2						
4/7	4/7	4/7	5/7	0/7	0/7	0/7	7/7	4/7	4/7	4/7	6/7	6/7	7/7	7/7	7/7	0/7	7/7	7/7	0/7	0/7	0/7	0/7	0/7	7/7	7/7	4/7	7/7	0/7	0/7	0/7	0/7	0/7						
4/5	3/5	2/5	4/5	0/5	0/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/5	0/5	0/5	0/5	0/5	5/5	5/5	3/5	5/5	0/5	0/5	0/5	0/5	0/5					
15/15	13/15	12/15	4/15	0/15	0/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	0/15	0/15	0/15	0/15	0/15	15/15	15/15	10/15	15/15	11/15	0/15	0/15	0/15	9/15					
6/6	6/6	4/6	6/6	0/6	0/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	0/6	0/6	0/6	6/6	6/6	6/6	5/6	6/6	5/6	0/6	0/6	0/6	5/6						
9/9	9/9	6/9	3/9	0/9	0/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	7/9	0/9	0/9	0/9	7/9	7/9	7/9	7/9	9/9	8/9	9/9	0/9	0/9	7/9	8/9					
2/4	4/4	4/4	4/4	2/4	0/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	0/4	0/4	4/4	4/4	4/4	2/4	4/4	4/4	0/4	0/4	4/4	4/4							
4/5	4/5	3/5	3/5	0/5	0/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/5	0/5	0/5	5/5	5/5	5/5	4/5	5/5	5/5	0/5	0/5	0/5	5/5						
3/5	3/5	0/5	0/5	0/5	0/5	5/5	5/5	2/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/5	0/5	0/5	5/5	5/5	5/5	2/5	2/5	0/5	0/5	0/5	0/5	0/5						
20/22	21/22	18/22	15/22	0/22	0/22	0/22	21/22	19/22	21/22	21/22	21/22	21/22	21/22	21/22	21/22	21/22	21/22	21/22	0/22	0/22	0/22	0/22	0/22	22/22	22/22	12/22	21/22	19/22	0/22	0/22	0/22	19/22						
23/24	24/24	16/24	19/24	0/24	0/24	0/24	23/24	21/24	23/24	23/24	23/24	23/24	23/24	23/24	23/24	23/24	23/24	23/24	0/24	0/24	0/24	0/24	0/24	24/24	24/24	14/24	24/24	21/24	0/24	0/24	0/24	21/24						
19/23	20/23	17/23	15/23	0/23	0/23	0/23	22/23	18/23	19/23	19/23	20/23	20/23	23/23	23/23	18/23	23/23	23/23	0/23	0/23	0/23	0/23	0/23	23/23	23/23	12/23	23/23	18/23	0/23	0/23	0/23	18/23							
1/2	1/2	1/2	1/2	0/2	0/2	2/2	2/2	1/2	1/2	1/2	1/2	1/2	2/2	2/2	2/2	2/2	2/2	2/2	0/2	0/2	0/2	2/2	2/2	2/2	2/2	2/2	2/2	0/2	0/2	0/2	2/2							
0/2	0/2	0/2	0/2	0/2	0/2	1/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	0/2	0/2	0/2	0/2	0/2	2/2	2/2	2/2	0/2	0/2	0/2	0/2	0/2	0/2						
14/16	14/16	14/16	14/16	0/16	12/16	12/16	16/16	12/16	12/16	12/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	8/16	16/16	10/16	1/16	1/16	1/16	1/16	1/16							
10/12	10/12	10/12	10/12	0/12	10/12	10/12	12/12	10/12	10/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	0/12	0/12	0/12	6/12	12/12	12/12	8/12	12/12	0/12	0/12	0/12	0/12	0/12							
Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No							
11/13	9/13	10/13	9/13	0/13	0/13	13/13	13/13	13/13	13/13	13/13	13/13	13/13	13/13	13/13	13/13	13/13	13/13	13/13	0/13	13/13	13/13	13/13	13/13	13/13	13/13	7/13	12/13	0/13	0/13	0/13	0/13	0/13						
17/24	19/24	13/24	19/24	0/24	0/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	22/24	24/24	18/24	0/24	0/24	0/24	0/24	16/24							
7/8	4/8	5/8	7/8	0/8	0/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	0/8	0/8	0/8	8/8	8/8	6/8	8/8	7/8	0/8	0/8	0/8	6/8							
24/27	24/27	16/27	0/27	0/27	0/27	27/27	27/27	25/27	25/27	25/27	25/27	25/27	25/27	27/27	27/27	27/27	27/27	27/27	0/27	27/27	27/27	0/27	27/27	27/27	16/27	27/27	0/27	0/27	0/27	16/27	0/27							
0/46	45/46	0/46	45/46	0/46	16/46	44/46	46/46	42/46	45/46	45/46	45/46	46/46	46/46	46/46	46/46	46/46	46/46	46/46	46/46	46/46	46/46	46/46	46/46	37/46	46/46	46/46	19/46	19/46	23/46	18/46								
14/19	19/19	14/19	19/19	15/19	8/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	19/19	19/19	19/19	19/19	19/19	17/19	19/19	18/19	0/19	0/19	16/19	18/19								
14/19	19/19	14/19	19/19	15/19	8/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	18/19	19/19	19/19	19/19	19/19	19/19	18/19	19/19	18/19	0/19	0/19	16/19	18/19								
6/12	12/12	9/12	12/12	0/12	6/12	11/12	11/12	10/12	11/12	11/12	11/12	11/12	11/12	12/12	12/12	12/12	12/12	12/12	0/12	0/12	7/12	11/12	12/12	12/12	9/12	11/12	11/12	6/12	9/12	12/12	12/12							
5/11	11/11	8/11	11/11	0/11	0/11	10/11	10/11	9/11	10/11	10/11	10/11	11/11	11/11	11/11	11/11	11/11	11/11	11/11	0/11	0/11	6/11	10/11	11/11	11/11	9/11	10/11	10/11	5/11	8/11	11/11	11/11							
0/34	0/34	0/34	0/34	0/34	0/34	34/34	34/34	30/34	34/34	34/34	34/34	34/34	34/34	34/34	34/34	34/34	34/34	34/34	0/34	0/34	0/34	0/34	0/34	27/34	34/34	0/34	0/34	0/34	0/34	0/34								
0/20	14/20	14/20	18/20	14/20	0/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	0/20	0/20	0/20	0/20	0/20	20/20	20/20	14/20	0/20	0/20	0/20	0/20								
4/8	8/8	7/8	8/8	7/8	0/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	8/8	0/8	0/8	8/8	7/8	8/8	8/8	4/8	8/8	0/8	5/8	5/8								
4/12	9/12	2/12	8/12	2/12	0/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	12/12	0/12	0/12	9/12	10/12	12/12	12/12	4/12	12/12	12/12	0/12	10/12	11/12	11/12							
1/26	14/26	1/26	15/26	0/26	0/26	9/26	10/26	8/26	21/26	22/26	26/26	26/26	26/26	26/26	26/26	26/26	26/26	26/26	0/26	0/26	2/26	3/26	26/26	26/26	23/26	25/26	22/26	0/26	0/26	3/26	3/26							
3/4	3/4	2/4	3/4	2/4	1/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4						
0/17	8/17	0/17	3/17	0/17	0/17	14/17	16/17	10/17	12/17	12/17	12/17	17/17	17/17	17/17	17/17	17/17	17/17	17/17	6/17	17/17	17/17	3/17	3/17	2/17	2/17	17/17	17/17	2/17	2/17	2/17	6/17							
2/2	2/2	1/2	2/2	2/2	0/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2						
8/10	9/10	7/10	9/10	7/10	0/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	0/10	0/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10							
0/6	6/6	0/6	6/6	1/6	0/6	1/6	1/6	1/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	0/6	0/6	0/6	0/6	0/6	6/6	6/6	6/6	6/6	6/6	6/6								
10/11	11/11	5/11	9/11	7/11	0/11	10/11	10/11	9/11	10/11</																													

28%	66%	36%	57%	23%	4%	11%	52%	17%	44%	50%	52%	91%	55%	78%	78%	6%	44%	75%	75%	4%	7%	32%	55%	3%	3%	7%	6%	44%
Traceur	Babel + core-js ^[1]	Closure	TypeScript + core-js	es7-shim	IE 11	Edge 13 ^[2]	Edge 14 ^[2]	FF 45 ESR	FF 49	FF 50 Beta	FF 51 Aurora	FF 52 Nightly	CH 54 ^[3]	CH 55 ^[3]	CH 56 ^[3]	SF 9	SF 10	SF TP	WK	Node 0.12	Node 4	Node 6.5	Node 7	AN 4.4	AN 5.0	AN 5.1	iOS 9	iOS 10
2/3	3/3	3/3	2/3	0/3	0/3	0/3	3/3	0/3	0/3	0/3	0/3	3/3	3/3	3/3	0/3	0/3	3/3	3/3	0/3	0/3	0/3	3/3	0/3	0/3	0/3	0/3	0/3	
0/3	3/3	0/3	3/3	2/3	0/3	0/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	0/3	0/3	3/3	3/3	0/3	0/3	0/3	3/3	0/3	0/3	2/3	3/3	
No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	Yes	
No	No	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Flag	Yes	Yes	Yes	No	No	Yes	No	Yes
No	No	No	No	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	Yes
No	Yes	Yes	Yes	No	No	Flag	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No
No	Yes	Yes	Yes	No	No	Flag	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No
No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	Yes
No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	Yes
No	Yes	No	Yes ^[5]	Yes	No	No	Yes	No ^[4]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Flag	Yes	No	No	No	No	
No	Yes	No	Yes ^[5]	Yes	No	No	Yes	No ^[4]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Flag	Yes	No	No	No	No	
0/2	1/2	0/2	1/2	1/2	0/2	0/2	0/2	0/2	0/2	2/2	2/2	2/2	2/2	2/2	2/2	0/2	1/2	2/2	2/2	0/2	0/2	0/2	2/2	0/2	0/2	0/2	0/2	1/2
0/2	2/2	0/2	2/2	2/2	0/2	0/2	0/2	0/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	0/2	0/2	2/2	2/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	2/2
0/2	2/2	0/2	2/2	2/2	0/2	0/2	0/2	0/2	2/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	2/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	2/2
3/3	3/3	3/3	2/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3
0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2
No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No
No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No	No	Yes
No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
0/16	16/16	0/16	16/16	0/16	8/16	12/16	12/16	14/16	16/16	16/16	16/16	10/16	10/16	10/16	16/16	16/16	16/16	16/16	16/16	16/16	10/16	10/16	10/16	6/16	6/16	10/16	16/16	16/16
0/4	0/4	0/4	0/4	0/4	0/4	2/4	4/4	2/4	4/4	4/4	4/4	4/4	2/4	2/4	2/4	0/4	4/4	4/4	4/4	4/4	4/4	0/4	0/4	0/4	0/4	0/4	4/4	
Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	

0 preset

experimental javascript features" setting under about:flags

features" flag

ightly.

with [core-js](#), or when a native ES6 host is used.

in ECMA-262 repo.

ES-whatever



BABEL



ES5

Polyfills?

Polyfutures

Polyfills?

Polyfutures™®©

Browsers Node

ENGINES

V8 (*Chrome*) ----- **V8** (*Node*)
***Monkey** (*FF*)
Squirrelfish (*Safari*)
Chakra (*IE*)

CHAPTER 02

JS can be pretty too

ES2015+ syntax

MODULES

Old and Busted

```
var math = require('lib/math');
```

New Shiny

```
import math from 'lib/math'
```

```
import * as math from 'lib/math'
```

```
import { floor, pi } from 'lib/math'
```

```
import axios from 'axios'-
import _ from 'lodash'-
import moment from 'moment'-
-
import Api from './api'-
import env from '../../util/env'-
import { Addon } from '../../db/models/Addon'-
import rollbar from '../../util/rollbar'-
```

DESTRUCTURING

Arrays

```
const [a, b] = [1, 2, 3] // a == 1, b == 2
```

```
const [a, , b] = [1, 2, 3] // a == 1, b == 3
```

Objects

```
const myObj = {foo: 1, bar: 2, baz: 3}
```

```
const { foo, baz } = myObj
```

```
// foo == 1, baz == 3
```

DEFAULT PARAMETERS

Old and Busted

```
function doThing (foo, bar) {  
  if (foo === undefined) { foo = 5 }  
}  
// Old and Busted
```

New Shiny

```
function doThing (foo=5, bar) { ... }  
// New Shiny
```

TEMPLATE STRINGS

Old and Busted

```
“Hello ” + user.name + “, welcome back!”
```

New Shiny

```
`Hello ${user.name}, welcome back!`
```

Also multiline:

```
`SELECT *  
FROM some_table  
WHERE active=true;`
```

CLASSES

Old and Busted

```
function Car() {  
    this.color = black  
}
```

```
Car.prototype = {  
    drive: function(distance) { ... },  
    stop: function() { ... }  
}
```

```
myCar = new Car()  
myCar.drive(10)  
myCar.color = 'blue'
```

CLASSES

Old and Busted, equivalent

```
let Car = {  
  color: black,  
  drive: function (distance) { ... },  
  stop: function () { ... },  
}
```

```
myCar = {  
  color: 'blue',  
  __proto__: Car,  
}  
myCar.drive(10)
```

CLASSES

New Shiny

```
class Animal {  
    constructor (name) {  
        this.name = name  
    }  
    speak () { // something generic }  
}
```

```
class Dog extends Animal {  
    speak () { // bark }
```

```
const lassie = new Dog('Lassie')  
lassie.speak() // woof!
```

AND MANY MORE...

let and const

Enhanced object literals

“Rest” arguments

Spread arguments

Iterators

Generators

CONVENIENCE IMPROVEMENTS TO CORE LIBRARIES

'foobar'.includes('bar') // true

[1, 2, 3].includes(2) // true

myObjects.entries() // [[k1, v1], [k2, v2], ...]

ARROW FUNCTIONS

$(arg) \Rightarrow \{ \dots \}$

FIVE RULES OF THIS

`function()`

global or undefined

`myObject.function()`

myObject

`new MyThing()`

new object instance

`myFunc.call(aThing)`

aThing (one time)

`myFunc.bind(aThing)`

aThing (returns bound func)

```
function foo () {  
    this.name = 'foo'  
    setTimeout(function sayName () {  
        console.log(this.name)  
    }, 100)  
}  
}
```

```
function bar () {  
    this.name = 'bar'  
    setTimeout(() => {  
        console.log(this.name)  
    }, 100)  
}  
}
```

```
function foo () {  
    this.name = 'foo'  
    setTimeout(function sayName () {  
        console.log(this.name) // not the same this!  
    }, 100)  
} // will print “undefined”
```

```
function bar () {  
    this.name = 'bar'  
    setTimeout(() => {  
        console.log(this.name) // lexical this  
    }, 100)  
} // will print “bar”
```

with body $(a, b) \Rightarrow \{ \text{return } a + b \}$

single expression $(a, b) \Rightarrow (a + b)$

ASYNCHRONY

*promises
async/await*

CALLBACK PATTERN

```
function doSomethingAsync (cb) {  
  try {  
    cb(null, theResult) // do the async thing and invoke cb  
  } catch (err) {  
    cb(err, null)  
  }  
}
```

```
doSomethingAsync(function(err, result) {  
  if (err) { // handle error }  
  else { // use result }  
})
```

```
foo(function (a) {  
  bar(a, function (b) {  
    baz(b, function(c) {  
      qux(c, function(d) {  
        quux(d, function(e) {  
          xyzzy(e, function(f) {  
            boom(f, function(g) {  
              // Callback hell  
            })  
          })  
        })  
      })  
    })  
  })  
})  
})
```

PROMISES

somethingThatReturnsAPromise()

.then((result) => { *// do something with the result* })

.catch((error) => { *// do something with the error* })

PROMISES

```
p = somethingThatReturnsAPromise()
```

```
p
```

```
.then((result) => { // do something with the result })  
.catch((error) => { // do something with the error })
```

```
function logErrors (aPromise) {  
  aPromise.catch((error) => { // log the error somewhere })  
}
```

```
logErrors(p)
```

FATES

Unresolved

Resolved

STATES

Fulfilled

Rejected

Pending

PROMISES

```
p = somethingThatReturnsAPromise()
```

```
p
```

```
.then((result) => { // do something with the result })  
.catch((error) => { // do something with the error })
```

```
function logErrors (aPromise) {  
  aPromise.catch((error) => { // log the error somewhere })  
}
```

```
logErrors(p)
```

FULFILLED

*call all the then()*s

REJECTED

*call all the catch()*s

PROMISE CHAINS

```
p = acquireStroopwafels()
```

```
p
```

```
.then((wafels) => { return addIceCream(wafels) })  
.then((alamode) => { return addSprinkles(alamode) })  
.then((yummy) => {  
    console.log('your stroopwafel sundae is ready')  
})  
.catch((error) => {  
    console.error(`Uh oh, ${error}`)  
})
```

PROMISE CHAINS

```
p = acquireStroopwafels()  
  
p  
.then(addIceCream)  
.then(addSprinkles)  
.then((yummy) => {  
    console.log('your stroopwafel sundae is ready')  
})  
.catch((error) => {  
    console.error(`Uh oh, ${error}`)  
})
```

PROMISE CHAINS

```
p = acquireStroopwafels()
```

```
p
```

```
.then(addIceCream)
```

```
.then(addSprinkles)
```

```
.then((yummy) => {
```

```
    console.log('your stroopwafel sundae is ready')
```

```
})
```

```
.catch((error) => {
```

```
    console.error(`Uh oh, ${error}`)
```

```
})
```



OK, that's better...

*but I still want to pretend that
I'm writing synchronous code.*

ASYNC / AWAIT

```
async function getStroopwafels () {  
    return new Promise((resolve, reject) => {  
        try {  
            const shop = await findAShop()  
            const helper = await findAPersonToGo()  
            resolve(buyStroopwafels(shop, helper))  
        } catch {  
            reject('Unable to acquire. You may now cry.')  
        }  
    }  
}
```

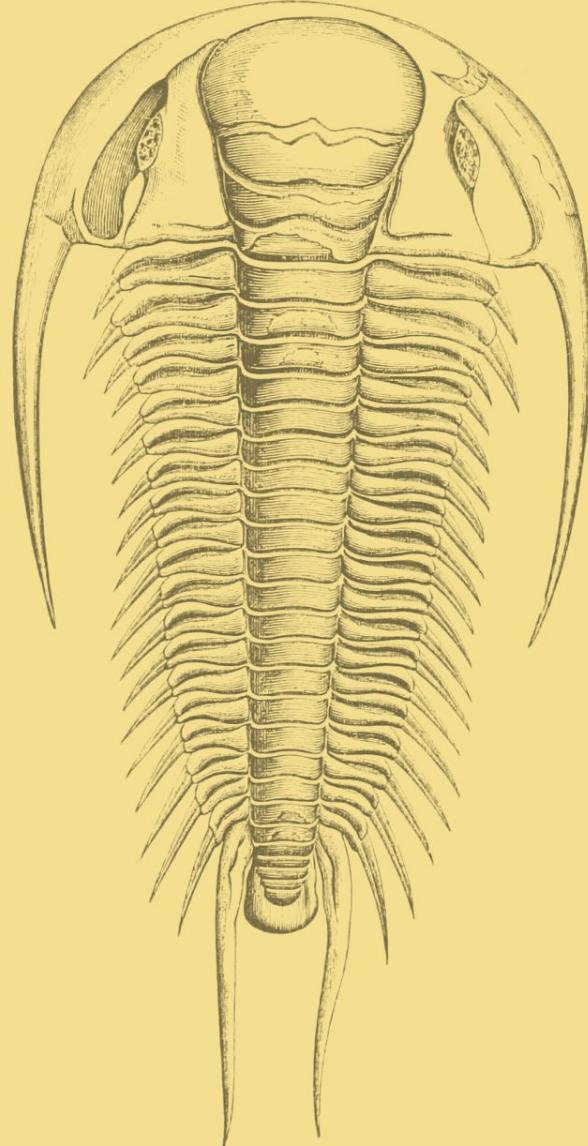
CHAPTER 03

Tooling & Culture



“How it feels to learn JS in 2016”
(google it)

the
**CAMBRIAN
EXPLOSION**
of JavaScript



hyper

MODULARITY

SEMVER

major.minor.patch

Software

How one developer just broke Node, Babel and thousands of projects in 11 lines of JavaScript

Code pulled from NPM – which everyone was using



Careful, careful ... Don't fumble this like the JS world (Credit: Claus Rebler)

23 Mar 2016 at 01:24, [Chris Williams](#)



1323

Updated Programmers were left staring at broken builds and failed installations on Tuesday after someone toppled the Jenga tower of JavaScript.

A couple of hours ago, Azer Koçulu unpublished more than 250 of his modules from [NPM](#), which is a popular package manager used by JavaScript projects to install dependencies.

Koçulu yanked his source code because, we're told, one of the modules was called Kik and that

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Cloud Security Temperature Check

Most read

Want to spy on the boss?
Try this phone-mast-in-an-HP printer



Amazon's very own Linux now available for download



Arch Linux: In a world of polish, DIY never felt so good

```
module.exports = leftpad;

function leftpad (str, len, ch) {
    str = String(str);
    var i = -1;
    if (!ch && ch !== 0) ch = ' ';
    len = len - str.length;
    while (++i < len) {
        str = ch + str;
    }
    return str;
}
```

Software

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More like this[Javascript](#)**Whitepaper Downloads**[Granular recovery of active directory objects](#)[Ur and Penn refuses to give malware the time of day](#)[Tips and tricks for leveraging NetApp storage with Veeam](#)[Top 10 best practices for VMware data availability](#)[Cloud Security Temperature Check](#)**Most read**

Want to spy on the boss?
Try this phone-mast-in-an-HP printer



Amazon's very own Linux now available for download



Arch Linux: In a world of polish, DIY never felt so good



Laurie Voss @seldo · Mar 23

Un-un-publishing is an unprecedented action that we're taking given the severity and widespread nature of breakage, and isn't done lightly.



107



105

...

[View other replies](#)



Laurie Voss @seldo · Mar 23

Full disclosure: the original author un-published his modules on purpose and in protest:



I've Just Liberated My Modules

Note: Thank you for all the support ❤

[medium.com](https://medium.com/@laurievoss/i-ve-just-liberated-my-modules)



73



63

...

[View other replies](#)



Laurie Voss @seldo · Mar 23

This action puts the wider interests of the community of npm users at odds with the wishes of one author; we picked the needs of the many.



23



48

...

[View other replies](#)



Laurie Voss @seldo · Mar 23

Even within npm we're not unanimous that this was the right call, but I cannot see hundreds of builds failing every second and not fix it.



58



95

...

[View other replies](#)



Laurie Voss @seldo · Mar 23

left-pad@0.0.3 is now restored to the registry. Run npm cache clear before attempting your installs again. This sucked and we're sorry.



48



73

...

[View other replies](#)

PACKAGING IS HARD

Thank the flying spaghetti monster for dstufft

virtualenv by default

NPM

“easy_install”

NPM

“pip”

YARN

PEP8

PEP8

haha, no.

ESLint

Many plugins / rulesets

StandardJS

Zero options.



Automatic Semicolon Insertion

avoid semicolons with this one weird trick

`

(

[

backtick

open parens

open bracket

Typing



STATIC TYPING

Flow

Facebook

Easy to gradually add

TypeScript

Microsoft

Used by a number of libraries

Auto-generate docs

... but it overlaps with babel

REPL

node
babel-node

RunKit

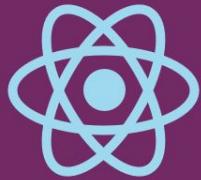
The screenshot shows the RunKit web application interface. At the top, there's a toolbar with red, yellow, and green window control buttons, a plus sign for creating new environments, and a search bar labeled "npm". Below the toolbar, the title "Data Visualizing" is displayed, along with dropdown menus for "node 0.12" and "version: master" with a "publish" button. A large text input field contains the number "1" and the placeholder text "type some code and press shift + return to run". To the right of the input field is a "Body (Rendered HTML)" dropdown menu. Below the input field, there's a list of three items:

- o `require()` any package from npm directly, without installing
- o `await` any promise instead of using callbacks ([example](#))
- o for more info, check out our [welcome document](#)

At the bottom of the screen, there's a footer message: "RunKit is designed for illustrative examples in documents. You can use RunKit in any document without prior coordination or asking for permission." The bottom right corner features standard browser control icons for back, forward, and refresh.

let's talk

FRAMEWORKS



REACT

tastes like Django

ember[®]

tastes like Rails



ANGULAR

tastes like ???

AND MANY MORE...

RxJS

VueJS

Elm

Polymer

Vanilla Web Components

Backbone

Oh I'm using \$FRAMEWORK, you probably haven't
heard of it yet.

let's talk
ORCHESTRATION
and
DEPLOYMENT

TASK RUNNERS

Grunt

Tasks

Gulp

Sources, filters, sinks

Webpack

Code AND static assets (with asset hashing)

Dependency resolution

Loaders and Plugins

Bundle splitting

Hot module replacement

HOT MODULE REPLACEMENT



TASK RUNNERS

Webpack

Somewhat steep learning curve

*How did we get **here**?*

*What does **here** look like?*

*How did we get **here**?*

*What does **here** look like?*

*What's **next** ?*

I

verb

preposition

JavaScript.



Idan Gazit
@idangazit