

|

verb

preposition

JavaScript.

I laugh at JavaScript.

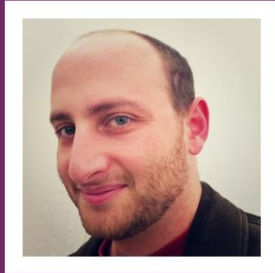
verb

preposition

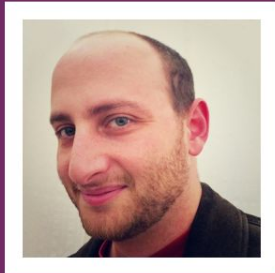
I am scared of JavaScript.

verb

preposition



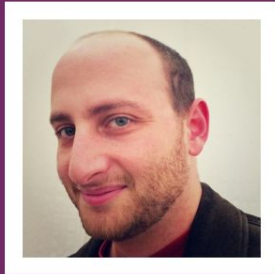
Idan Gazit
@idangazit



Idan Gazit
@idangazit



HEROKU



Idan Gazit
@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) {
          xzyzy(e, function(f) {
            boom(f, function(g) {
              // Callback hell
            })
          })
        })
      })
    })
  })
})
})
```



Caution!

Ongeluckige Voyagie,
Van't
SCHIP BATAVIA,
Nae de Oost-Indien.

Gebleven op de Abrolhos van Frederick Houtman, op de
hooghte van 28 $\frac{1}{2}$ graet/by-Zuyden de Linie Aequinoctiael.
Opgebaren onder den C. FRANCOYS PELSERT.

Verbatende /

Soo 't berongelucken des Schips / als de groutwelicke
Moorderijen onder 't gebergde Scheeps-volck / op 't Eplant
Bataviaes Kerck-hof hooggeballen ; nebens de Straffe de Wandda-
digers overgekomen. Geschiet in de jaren 1628. en 1629.

Nevens

Een Treur-bly-eynde Ongheluck, des Oost-Indische Com-
pagnies Dienaers in 't jaer 1636. weder-varen, in 't Co-
nincklijke 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 aen sijn grootste Heeren des rijcks / in
sijn Conincklijk Hof tot Espahan.

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



Tot AMSTERDAM,

Voor JAN JANSZ. 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)
***Monkey** (FF)
Squirrelfish (Safari)
Chakra (IE)

PACKAGING

by-hand
bower

NPM

Browsers

Node

ENGINES

V8 (Chrome) **V8** (Node)
***Monkey** (FF)
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%	100%	5%	4%	21%	52%	97%	97%	66%	96%	59%	5%	10%	25%	54%		
Tracur	Babel + core-js ^[2]	Closure	TypeScript + 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	2/2	2/2	2/2	2/2	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	
	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	7/7	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	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	0/5	5/5	5/5	5/5	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	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	9/15	15/15	15/15	15/15	0/15	0/15	0/15	0/15	15/15	15/15	10/15	15/15	11/15	0/15	0/15	0/15	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	5/6	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	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	9/9	9/9	9/9	8/9	9/9	9/9	9/9	0/9	0/9	7/9	7/9	9/9	9/9	7/9	9/9	8/9	0/9	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	0/4	4/4	4/4	4/4	2/4	4/4	4/4	0/4	0/4	0/4	0/4	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	0/5	0/5	0/5		
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	0/5	5/5	5/5	5/5	0/5	0/5	0/5	0/5	5/5	5/5	2/5	2/5	0/5	0/5	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	22/22	22/22	22/22	19/22	22/22	22/22	22/22	0/22	0/22	0/22	0/22	22/22	22/22	12/22	21/22	19/22	0/22	0/22	0/22	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	24/24	24/24	24/24	21/24	24/24	24/24	24/24	0/24	0/24	0/24	0/24	24/24	24/24	14/24	24/24	21/24	0/24	0/24	0/24	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	23/23	18/23	23/23	23/23	23/23	0/23	0/23	0/23	0/23	23/23	23/23	12/23	23/23	18/23	0/23	0/23	0/23	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	2/2	0/2	0/2	0/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	0/2	0/2	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	0/2	2/2	2/2	2/2	2/2	0/2	0/2	0/2	0/2	2/2	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	1/16	16/16	16/16	16/16	2/16	1/16	1/16	9/16	16/16	16/16	8/16	16/16	10/16	1/16	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	10/12	12/12	12/12	12/12	12/12	12/12	0/12	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	0/12	0/12		
Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Flag	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	0/13	13/13	13/13	13/13	0/13	0/13	0/13	9/13	13/13	13/13	7/13	12/13	0/13	0/13	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	16/24	24/24	24/24	24/24	0/24	0/24	0/24	0/24	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	6/8	8/8	8/8	8/8	0/8	0/8	0/8	0/8	8/8	8/8	6/8	8/8	7/8	0/8	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	27/27	27/27	27/27	0/27	27/27	27/27	27/27	0/27	0/27	0/27	20/27	27/27	27/27	16/27	27/27	0/27	0/27	0/27	16/27	0/27	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	18/46	46/46	46/46	46/46	8/46	18/46	23/46	43/46	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	19/19	19/19	19/19	18/19	19/19	19/19	19/19	0/19	0/19	13/19	17/19	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	19/19	19/19	19/19	18/19	19/19	19/19	19/19	0/19	0/19	13/19	17/19	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	12/12	12/12	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	0/12	6/12	9/12	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	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	0/11	5/11	8/11	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	0/34	34/34	34/34	34/34	0/34	0/34	0/34	0/34	34/34	34/34	27/34	34/34	0/34	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	0/20	20/20	20/20	20/20	0/20	0/20	0/20	0/20	20/20	20/20	14/20	16/20	0/20	0/20	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	6/8	8/8	8/8	8/8	0/8	0/8	4/8	7/8	8/8	8/8	4/8	8/8	0/8	0/8	0/8	8/8	5/8	5/8	6/8		
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	11/12	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	0/12	10/12	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	3/26	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	3/26			
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	1/4	0/4	3/4	4/4	4/4	4/4	4/4	4/4	4/4	1/4	2/4	3/4	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	12/17	17/17	17/17	17/17	6/17	17/17	17/17	17/17	3/17	3/17	2/17	6/17	17/17	17/17	5/17	17/17	14/17	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	0/2	0/2	0/2	2/2	2/2	2/2	2/2	2/2	2/2	0/2	0/2	0/2	0/2	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	9/10	10/10	10/10	10/10	0/10	0/10	1/10	10/10	10/10	10/10	9/10	10/10	10/10	0/10	1/10	2/10	9/10				
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	1/6	6/6	6/6	6/6	0/6	0/6	0/6	0/6	6/6	6/6	6/6	6/6	5/6	0/6	0/6	0/6	1/6				
10/11	11/11	5/11	9/11	7/11	0/11	10/11	10/11	9/11	10/11	10/11	10/11	10/11	11/11	11/11	11/11	8/11	11/11	11/11	11/11	0/11	0/11	0/11	9/11	11/11	11/11	6/11	11/11	8/11	0/11	0/11	0/11	8/11				
7/10	10/10	8/10	10/10	7/10	0/10	10/10	10/10	8/10	10/10	10/10	10/10	10/10	9/10	9/10	9/10	10/1																				

Traceur	Babel + core-js ^[1]	Closure	Type-Script + 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	
28%	66%	36%	57%	23%	4%	11%	52%	17%	44%	50%	52%	4%	91%	55%	78%	78%	6%	44%	75%	75%	4%	7%	32%	55%	3%	3%	7%	6%	44%
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	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
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	2/3	3/3	3/3	3/3	0/3	0/3	3/3	3/3	0/3	0/3	0/3	2/3	3/3	3/3
No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	Yes
No	No	Yes	No	No	No	No	Yes	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	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	No	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
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	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	Yes
No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	No	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	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	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	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	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	0/2	0/2	0/2	2/2
0/2	2/2	0/2	2/2	0/2	0/2	0/2	2/2	0/2	0/2	0/2	0/2	2/2	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	0/2	0/2	0/2	0/2
3/3	3/3	3/3	2/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	3/3	0/3	3/3	3/3	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	2/2	2/2	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	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	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	Yes	Yes	Yes	No	No	No	No	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	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	16/16	10/16	10/16	10/16	16/16	16/16	16/16	16/16	10/16	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	0/4	0/4	0/4	2/4	0/4	0/4	0/4	0/4	4/4	
Yes	No	No	No	No	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	

0 preset

experimental Javascript features" setting under about:flags

features" flag

ightly.

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

ES-whatever



BABEL



ES5

Polyfills?

Polyfutures

Polyfills?

PolyfuturesTM ® ©

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 }  
}
```

New Shiny

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

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) {  
          xyzy(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

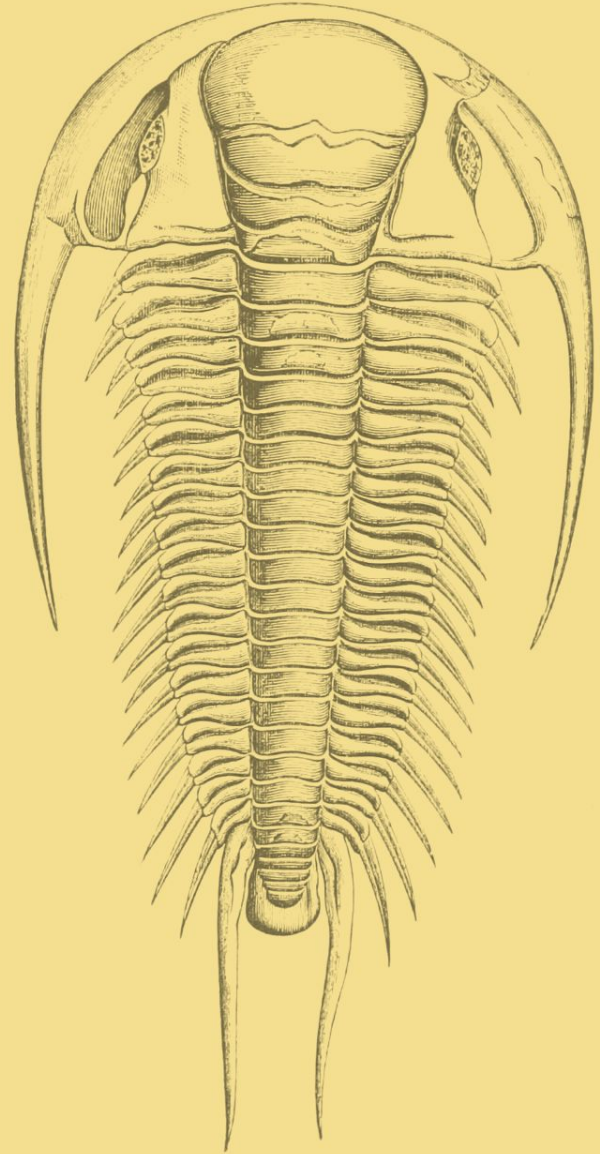
Tooling & Culture



“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

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

```
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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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.

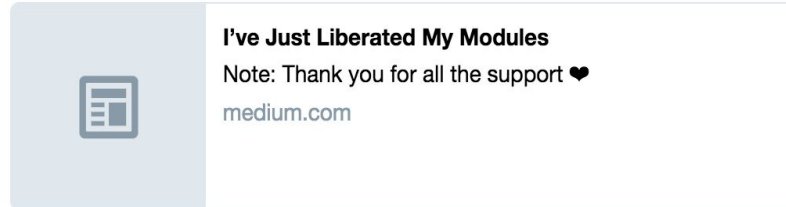
← ↻ 107 ❤️ 105 ⋮

[View other replies](#)



Laurie Voss @seldo · Mar 23

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



← ↻ 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

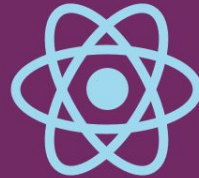
The screenshot shows the RunKit web interface. At the top left, there are three colored window control buttons (red, yellow, green) and a plus sign in the top right corner. The main heading is "Data Visualizing" in a large, bold, black font. To the right of the heading is a search bar with a magnifying glass icon and the text "npm". Below the heading, there are three dropdown menus: "node 0.12", "version: master", and "publish". A code editor area contains a single line of code, with a line number "1" on the left. Below the code editor is a prompt: "type some code and press shift + return to run". The output area shows a rendered HTML document with a dropdown menu set to "Body (Rendered HTML)". The rendered content includes a bulleted list:

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

Below the list, there is a paragraph of text: "ed for illustrative examples in documents. You without prior coordination or asking for". At the bottom right of the output area, there are icons for zooming in and out, editing, and deleting.

*let's talk*

# FRAMEWORKS



# REACT

*tastes like Django*



*ember*<sup>®</sup>

*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?*

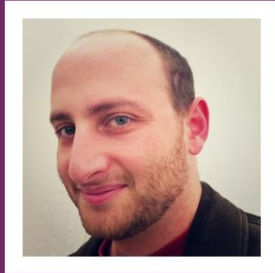
*What's **next** ?*

|

*verb*

*preposition*

JavaScript.



Idan Gazit  
*@idangazit*