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ES2015+ cheatsheet

A quick overview of new JavaScript features in ES2015, ES2016, ES2017, ES2018 and beyond.

Block scoping

Let
<pre>function fn () { if (true) { } }</pre>
Const
<pre>const a = 1</pre>
let is the new var. Constants work just like let, but can't be reassigned. See: Let and const

New methods

New string methods
<pre>"hello".repeat(3) "hello".includes("ll") "hello".startsWith("he") "hello".padStart(8) // " hello" "hello".padEnd(8) // "hello " "hello".padEnd(8, '!') // hello!!! "\u1E9B\u0323".normalize("NFC")</pre>
See: New methods

Backtick strings

Interpolation
<pre>const message = `Hello \${name}`</pre>
Multiline strings
<pre>const str = ` hello world `</pre>
Templates and multiline strings. See: Template strings

Binary and octal literals

<pre>let bin = 0b1010010 let oct = 0o755</pre>
See: Binary and octal literals

Classes

<pre>class Circle extends Shape {</pre>
Constructor

Exponent operator

```
// Same as: Math.pow(2, 8)
```

<pre>this.radius = radius }</pre>
Methods
<pre>return Math.PI * 2 * this.radius }</pre>
Calling superclass methods
<pre>expand (n) { }</pre>
Static methods
<pre>return new Circle(diameter / 2) } }</pre>
Syntactic sugar for prototypes. See: Classes

Promises

Making promises

```
if (ok) { resolve(result) }
else { reject(error) }
})
```

For asynchronous programming. See: [Promises](#)

Async-await

```
async function run () {
```

Using promises

```
promise
```

Promise functions

```
Promise.all(...)
Promise.race(...)
Promise.reject(...)
Promise.resolve(...)
```

Using promises with finally

```
promise
  .then((result) => { ... })
  .catch((error) => { ... })
```

The handler is called when the promise is fulfilled or rejected.

```
    return [user, tweets]
}
```

async functions are another way of using functions.

See: [async function](#)

Destructuring

Destructuring assignment

Arrays

Objects

```
    title: 'The Silkworm',
    author: 'R. Galbraith'
}
```

Supports for matching arrays and objects. See: [Destructuring](#)

Loops

```
    ...
}
```

The assignment expressions work in loops, too.

Default values

```
const scores = [22, 33]
const [math = 50, sci = 50, arts = 50] = scores
```

```
// Result:
// math === 22, sci === 33, arts === 50
```

Default values can be assigned while destructuring arrays or objects.

Reassigning keys

```
    console.log(`x: ${x}, y: ${y}`)
}
```

```
printCoordinates({ left: 25, top: 90 })
```

This example assigns x to the value of the left key.

Function arguments

```
    console.log(`${greeting}, ${name}!`)
}
```

```
greet({ name: 'Larry', greeting: 'Ahoy' })
```

Destructuring of objects and arrays can also be done in function arguments.

Default values

```
    console.log(`Hi ${name}!`);
}
```

```
greet() // Hi Rauno!
greet({ name: 'Larry' }) // Hi Larry!
```

Object destructuring

Extract some keys individually and remaining keys in the object using rest (...) operator

Spread

Object spread

with Object spread
<pre>const options = { visible: true }</pre>
without Object spread
<pre>const options = Object.assign({}, defaults, { visible: true })</pre>
<p>The Object spread operator lets you build new objects from other objects.</p> <p>See: Object spread</p>

Array spread

with Array spread
<pre>const users = ['rstacruz']</pre>
without Array spread
<pre>const users = admins .concat(editors) .concat(['rstacruz'])</pre>
<p>The spread operator lets you build new arrays in the same way.</p> <p>See: Spread operator</p>

Functions

Function arguments

Default arguments
<pre>return `Hello \${name}` }</pre>
Rest arguments
<pre>// y is an Array</pre>

Fat arrows

Fat arrows
<pre>...)</pre>
With arguments
<pre>...)</pre>

<pre> return x * y.length }</pre>
Spread
<pre>// same as fn(1, 2, 3)</pre>
Default, rest, spread. See: Function arguments

Implicit return
<pre>// No curly braces = implicit return // Same as: numbers.map(function (n) { return n * 2 }) // Implicitly returning objects requires parentheses around the object</pre>
Like functions but with this preserved. See: Fat arrows

Objects

Shorthand syntax

<pre>module.exports = { hello, bye } // Same as: module.exports = { hello: hello, bye: bye }</pre>
See: Object literal enhancements

Getters and setters

<pre>const App = { return this.status === 'closed' }, this.status = value ? 'closed' : 'open' } }</pre>
See: Object literal enhancements

Extract values

Methods

<pre>const App = { console.log('running') } } // Same as: App = { start: function () {⋯} }</pre>
See: Object literal enhancements

Computed property names

<pre>let event = 'click' let handlers = { } // Same as: handlers = { 'onclick': true }</pre>
See: Object literal enhancements

```
const fatherJS = { age: 57, name: "Brendan Eich" }

// [57, "Brendan Eich"]

// [["age", 57], ["name", "Brendan Eich"]]
```

Modules

Imports

<pre>import 'helpers' // aka: require('...')</pre>
<pre>import Express from 'express' // aka: const Express = require('...').default require('...')</pre>
<pre>import { indent } from 'helpers' // aka: const indent = require('...').indent</pre>
<pre>import * as Helpers from 'helpers' // aka: const Helpers = require('...')</pre>
<pre>import { indentSpaces as indent } from 'helpers' // aka: const indent = require('...').indentSpaces</pre>
<p>import is the new require(). See: Module imports</p>

Exports

<pre>export default function () { ... } // aka: module.exports.default = ...</pre>
<pre>export function mymethod () { ... } // aka: module.exports.mymethod = ...</pre>
<pre>export const pi = 3.14159 // aka: module.exports.pi = ...</pre>
<p>export is the new module.exports. See: Module exports</p>

Generators

Generators

For..of iteration

```
function* idMaker () {  
  let id = 0  
  while (true) { yield id++ }  
}
```

```
let gen = idMaker()  
gen.next().value // → 0  
gen.next().value // → 1  
gen.next().value // → 2
```

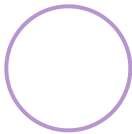
It's complicated. See: [Generators](#)

```
for (let i of iterable) {  
  ...  
}
```

For iterating through generators and arrays. See: [For..of iteration](#)

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