

ECMAScript 2019

Key	Value
Name	ECMAScript 2019
Short name	ES2019
Was finalized in	June 2019

Feature list

#	Name	Desc
1	MAJOR Array.prototype.{flat, flatMap}	flatten array
2	MAJOR Object.fromEntries	create object from entries
3	String.prototype.{trimStart, trimEnd}	trim white spaces
4	Symbol.prototype.description	add desc to a Symbol
5	Optional catch binding	a way to omit the error in catch
6	Array.prototype.sort() is guaranteed to be stable	keep same order for equal items
7	Revised Function.prototype.toString()	keep original function declaration including comments, spaces

Source: https://exploringjs.com/es2018-es2019/ch_overview.html

1. Array.prototype.{flat, flatMap}

arr.flat(depth) - default depth is 1

```
[1, 2, [3, 4]].flat(0); // [1, 2, [3, 4]]
[1, 2, [3, 4]].flat(1); // [1, 2, 3, 4]

[1, 2, [[3], 4]].flat(1); // [1, 2, [3], 4]
[1, 2, [[3], 4]].flat(2); // [1, 2, 3, 4]

[1, 2, , 4, 5].flat(); // [1, 2, 4, 5] as empty slot is removed
```

arr.flatMap(mapFn) - similar to the call map() first, then flat(1). But slightly more efficient

```
[5, 20]
  .map(x => [x, x * 2]) // [ [5, 10], [20, 40] ]
  .flat(1); // [5, 10, 20, 40]
```

```
[5, 20].flatMap(x => [x, x * 2]); // [5, 10, 20, 40]
```

2. Object.fromEntries

Create new object from entries.

```
const student = {
  id: 1,
  name: 'Easy Frontend',
}

// ES2017
const entries = Object.entries(student);
// [
//   ['id', 1],
//   ['name', 'Easy Frontend'],
// ]

// ES2019
Object.fromEntries(entries);
// {
//   id: 1,
//   name: 'Easy Frontend',
// }
```

3. String.prototype.{trimStart, trimEnd}

Easy to remove redundant whitespaces at the beginning / end of a string.

```
// ES5
' Easy Frontend '.trim(); // 'Easy Frontend'

// ES2019
'Easy Frontend'.trimStart(); // 'Easy Frontend'
' Easy Frontend '.trimStart(); // 'Easy Frontend '

'Easy Frontend'.trimEnd(); // 'Easy Frontend'
' Easy Frontend '.trimEnd(); // ' Easy Frontend'
```

4. Symbol.prototype.description

```
const sym = Symbol('description goes here');
sym.description; // 'description goes here'
sym.toString(); // 'Symbol(desc)'
```

5. Optional catch binding

Able to omit the error in catch clause if we don't need it.

```
function parseStudentFromJSON(str) {
  try {
    return JSON.parse(str);
  } catch (error) {
    // in case of failed to parse, simply return undefined
    return undefined;

    // error is unused 😞
  }
}
```

```
function parseStudentFromJSON(str) {
  try {
    return JSON.parse(str);
  } catch {
    // in case of failed to parse, simply return undefined
    return undefined;
  }
}
```

6. Array.prototype.sort() is guaranteed to be stable

Guaranteed to keep the same order for equal items.

```
[
  { id: 1, name: 'Alice' },
  { id: 3, name: 'John' },
  { id: 2, name: 'Bob' },
  { id: 4, name: 'Alice' },
].sort((s1, s2) => {
  if (s1.name > s2.name) return 1;
  if (s1.name < s2.name) return -1;

  return 0;
});

// output
// [
//   { id: 1, name: 'Alice' },
//   { id: 4, name: 'Alice' },
//   { id: 2, name: 'Bob' },
//   { id: 3, name: 'John' },
// ]
```

7. Revised Function.prototype.toString()

ES2019 introduced a change to the return value to **avoid stripping comments** and **other characters like whitespace**, exactly representing the function as it was defined.

```
function /* this is bar */ bar() {}  
  
// BEFORE  
bar.toString() //'function bar() {}'  
  
// ES2019  
bar.toString() // 'function /* this is bar */ bar () {}'
```

Source: <https://flaviocopes.com/es2019/>

```
// for built-in function  
Math.trunc.toString();  
// function trunc() { [native code] }
```

Tham khảo

- <https://flaviocopes.com/es2019/>
- <https://exploringjs.com/es2018-es2019/toc.html>
- <https://www.digialocean.com/community/tutorials/js-es2019>
- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/flat
- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/flatMap

Khoá học Javascript cho người mới bắt đầu 2021 🎉

- Tác giả: **Hậu Nguyễn** - Founder Easy Frontend
- Khoá học chỉ được published trên Udemy, không thông qua trung gian.
- Khoá học không bán dạng videos upload trên Google Drive hay bất cứ hình thức nào tương tự.
- Khoá học có nhóm discord để hỗ trợ trong quá trình học tập.

☎️ Liên hệ tác giả để được hỗ trợ:

- ✅ Facebook: <https://www.facebook.com/nvhauesmn/>
- ✅ Fanpage: <https://www.facebook.com/learn.easyfrontend>
- ✅ Youtube Channel: <https://www.youtube.com/easyfrontend>