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2014-03-20

reduce() and array indices

Labels: [dev](#), [javascript](#), [jslang](#)

This blog post explains how the index works that `Array.prototype.reduce()` passes to its callback.

What indices does the callback receive?

Tobie Langel recently [pointed out](#) something about `Array.prototype.reduce()` that looks odd at first glance (slightly edited by me):

```
> var a = [ 'a', 'b', 'c' ];
> a.reduce(function(x, y, i) { console.log(i) });
1
2
> a.reduce(function(x, y, i) { console.log(i) }, 0);
0
1
2
```

It does make sense if you look at the signature of the `reduce()` callback:

```
function (previousValue, currentElement, currentIndex, array)
```

Therefore, what is logged in the example is the index of `y`.

reduce() and empty arrays

What also suprised me about `reduce()` is that you can only use it for empty arrays if you provide an initial value (like the second variant above). That value becomes the first `previousValue` that the callback is invoked with.

```
> function add(prev, cur) { return prev + cur }
undefined
> [].reduce(add)
TypeError: Reduce of empty array with no initial value
> [].reduce(add, 123)
123
```

More information on reduce()

- The section [“Reduction Methods”](#) of [Speaking JavaScript](#) explains `reduce()` in detail.
- A blog post by Ariya Hidayat covers [“Searching using Array.prototype.reduce”](#).

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Open strong. Be bold. Tell a
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