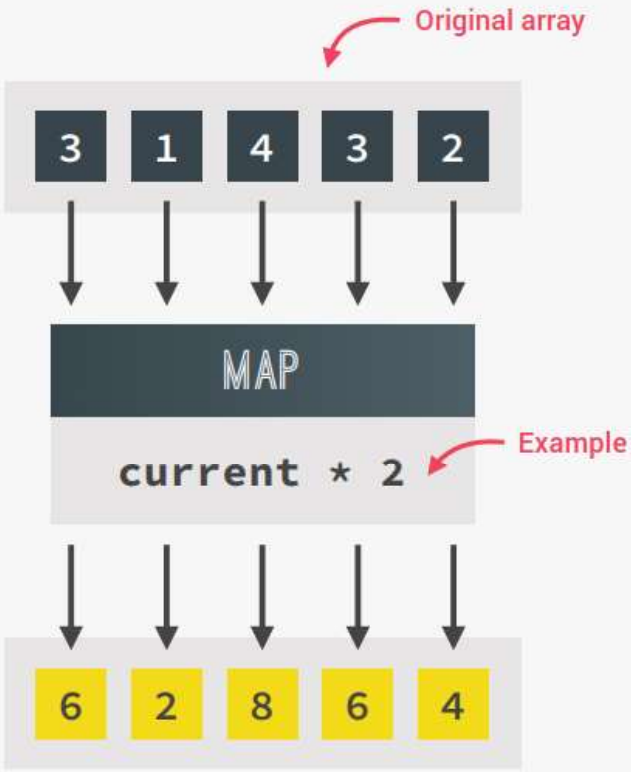
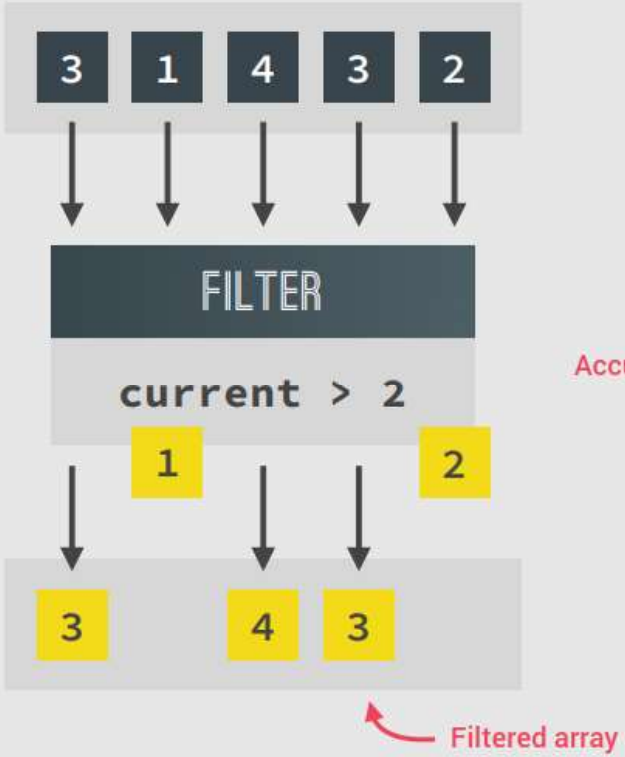
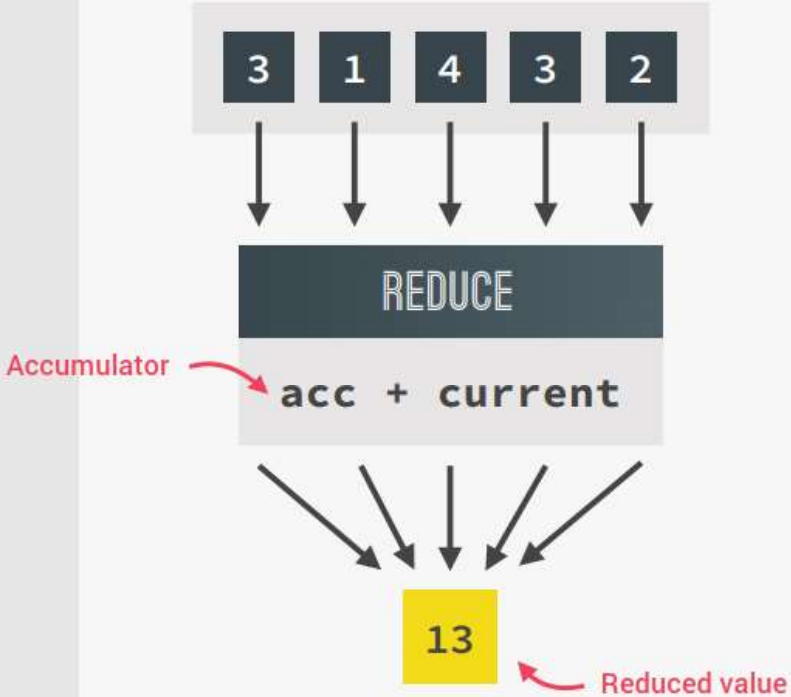
DATA TRANSFORMATIONS WITH MAP, FILTER AND REDUCE



- `map` returns a **new array** containing the results of applying an operation on all original array elements



- `filter` returns a **new array** containing the array elements that passed a specified **test condition**



- `reduce` boils ("reduces") all array elements down to one single value (e.g. adding all elements together)

WHICH ARRAY METHOD TO USE? 🤔

"I WANT...:"

To mutate original array

- Add to original:
  - `.push` *(end)*
  - `.unshift` *(start)*
- Remove from original:
  - `.pop` *(end)*
  - `.shift` *(start)*
  - `.splice` *(any)*
- Others:
  - `.reverse`
  - `.sort`
  - `.fill`

A new array

- Computed from original:
  - `.map` *(loop)*
- Filtered using condition:
  - `.filter`
- Portion of original:
  - `.slice`
- Adding original to other:
  - `.concat`
- Flattening the original:
  - `.flat`
  - `.flatMap`

An array index

- Based on value:
  - `.indexOf`
- Based on test condition:
  - `.findIndex`

An array element

- Based on test condition:
  - `.find`

Know if array includes

- Based on value:
  - `.includes`
- Based on test condition:
  - `.some`
  - `.every`

A new string

- Based on separator string:
  - `.join`

To transform to value

- Based on accumulator:
  - `.reduce`

(Boil down array to single value of any type: number, string, boolean, or even new array or object)

To just loop array

- Based on callback:
  - `.forEach`

(Does not create a new array, just loops over it)