

Problem 2634: Filter Elements from Array

Problem Information

Difficulty: [Easy](#)

Acceptance Rate: 0.00%

Paid Only: No

Problem Description

Given an integer array

arr

and a filtering function

fn

, return a filtered array

filteredArr

The

fn

function takes one or two arguments:

arr[i]

- number from the

arr

i

- index of

arr[i]

filteredArr

should only contain the elements from the

arr

for which the expression

fn(arr[i], i)

evaluates to a

truthy

value. A

truthy

value is a value where

Boolean(value)

returns

true

Please solve it without the built-in

Array.filter

method.

Example 1:

Input:

```
arr = [0,10,20,30], fn = function greaterThan10(n) { return n > 10; }
```

Output:

```
[20,30]
```

Explanation:

```
const newArray = filter(arr, fn); // [20, 30] The function filters out values that are not greater than 10
```

Example 2:

Input:

```
arr = [1,2,3], fn = function firstIndex(n, i) { return i === 0; }
```

Output:

```
[1]
```

Explanation:

fn can also accept the index of each element In this case, the function removes elements not at index 0

Example 3:

Input:

```
arr = [-2,-1,0,1,2], fn = function plusOne(n) { return n + 1 }
```

Output:

```
[-2,0,1,2]
```

Explanation:

Falsey values such as 0 should be filtered out

Constraints:

$0 \leq \text{arr.length} \leq 1000$

-10

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$\leq \text{arr}[i] \leq 10$

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Code Snippets

JavaScript:

```
/*
 * @param {number[]} arr
 * @param {Function} fn
 * @return {number[]}
 */
var filter = function(arr, fn) {

};
```

TypeScript:

```
type Fn = (n: number, i: number) => any

function filter(arr: number[], fn: Fn): number[] {

};
```

Solutions

JavaScript Solution:

```
/**  
 * Problem: Filter Elements from Array  
 * Difficulty: Easy  
 * Tags: array  
 *  
 * Approach: Use two pointers or sliding window technique  
 * Time Complexity: O(n) or O(n log n)  
 * Space Complexity: O(1) to O(n) depending on approach  
 */  
  
/**  
 * @param {number[]} arr  
 * @param {Function} fn  
 * @return {number[]}  
 */  
var filter = function(arr, fn) {  
  
};
```

TypeScript Solution:

```
/**  
 * Problem: Filter Elements from Array  
 * Difficulty: Easy  
 * Tags: array  
 *  
 * Approach: Use two pointers or sliding window technique  
 * Time Complexity: O(n) or O(n log n)  
 * Space Complexity: O(1) to O(n) depending on approach  
 */  
  
type Fn = (n: number, i: number) => any  
  
function filter(arr: number[], fn: Fn): number[] {  
  
};
```