

Problem 2625: Flatten Deeply Nested Array

Problem Information

Difficulty: Medium

Acceptance Rate: 0.00%

Paid Only: No

Problem Description

Given a

multi-dimensional

array

arr

and a depth

n

, return a

flattened

version of that array.

A

multi-dimensional

array is a recursive data structure that contains integers or other

multi-dimensional

arrays.

A

flattened

array is a version of that array with some or all of the sub-arrays removed and replaced with the actual elements in that sub-array. This flattening operation should only be done if the current depth of nesting is less than

n

. The depth of the elements in the first array are considered to be

0

.

Please solve it without the built-in

Array.flat

method.

Example 1:

Input

```
arr = [1, 2, 3, [4, 5, 6], [7, 8, [9, 10, 11], 12], [13, 14, 15]] n = 0
```

Output

```
[1, 2, 3, [4, 5, 6], [7, 8, [9, 10, 11], 12], [13, 14, 15]]
```

Explanation

Passing a depth of n=0 will always result in the original array. This is because the smallest possible depth of a subarray (0) is not less than n=0. Thus, no subarray should be flattened.

Example 2:

Input

arr = [1, 2, 3, [4, 5, 6], [7, 8, [9, 10, 11], 12], [13, 14, 15]] n = 1

Output

[1, 2, 3, 4, 5, 6, 7, 8, [9, 10, 11], 12, 13, 14, 15]

Explanation

The subarrays starting with 4, 7, and 13 are all flattened. This is because their depth of 0 is less than 1. However [9, 10, 11] remains unflattened because its depth is 1.

Example 3:

Input

arr = [[1, 2, 3], [4, 5, 6], [7, 8, [9, 10, 11], 12], [13, 14, 15]] n = 2

Output

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15]

Explanation

The maximum depth of any subarray is 1. Thus, all of them are flattened.

Constraints:

0 <= count of numbers in arr <= 10

5

0 <= count of subarrays in arr <= 10

5

maxDepth <= 1000

-1000 <= each number <= 1000

0 <= n <= 1000

Code Snippets

JavaScript:

```
/**  
 * @param {Array} arr  
 * @param {number} depth  
 * @return {Array}  
 */  
var flat = function (arr, n) {  
  
};
```

TypeScript:

```
type MultiDimensionalArray = (number | MultiDimensionalArray)[];  
  
var flat = function (arr: MultiDimensionalArray, n: number):  
MultiDimensionalArray {  
  
};
```

Solutions

JavaScript Solution:

```
/**  
 * Problem: Flatten Deeply Nested Array  
 * Difficulty: Medium  
 * 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 {Array} arr
* @param {number} depth
* @return {Array}
*/
var flat = function (arr, n) {

};


```

TypeScript Solution:

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