

## 1. Rotate an Array Right by K Positions

Write a program to rotate an array right by k positions without using any built-in array or rotation

functions. For example, rotating [1, 2, 3, 4, 5] by 2 would give [4, 5, 1, 2, 3].

Instructions: You should implement the logic manually for rotating the array.

```
function rotateArrayRight(arr: number[], k: number): number[] {  
    const s = arr.length;  
    if (s === 0) return arr;  
    k = k % s;  
    const reverse = (start: number, end: number) => {  
        while (start < end) {  
            const temp = arr[start];  
            arr[start] = arr[end];  
            arr[end] = temp;  
            start++;  
            end--;  
        }  
    };  
    reverse(0, s - 1);  
    reverse(0, k - 1);  
    reverse(k, s - 1);  
    return arr; }  
const array = [1, 2, 3, 4, 5];  
const k = 2;
```

```
const rotatedArray = rotateArrayRight(array, k);  
console.log(rotatedArray);
```

Output

1.array=[1,2,3,4,5]

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  
● PS C:\Users\nilof> npm install -g typescript  
changed 1 package in 1s  
● PS C:\Users\nilof> tsc D:\Executions\HashAgile\rotateArray.ts  
● PS C:\Users\nilof> node D:\Executions\HashAgile\rotateArray.js  
[ 4, 5, 1, 2, 3 ]  
○ PS C:\Users\nilof> █
```

2.array=[11,12,14,15,16]

```
● PS C:\Users\nilof> tsc D:\Executions\HashAgile\rotateArray.ts  
● PS C:\Users\nilof> node D:\Executions\HashAgile\rotateArray.js  
[ 15, 16, 11, 12, 14 ]  
○ PS C:\Users\nilof> █
```

3.array=[100,2,4,5,7]

```
● PS C:\Users\nilof> tsc D:\Executions\HashAgile\rotateArray.ts  
● PS C:\Users\nilof> node D:\Executions\HashAgile\rotateArray.js  
[ 5, 7, 100, 2, 4 ]  
○ PS C:\Users\nilof> █
```

4.array=[9,1,2,5,7]

- PS C:\Users\nilof> tsc D:\Executions\HashAgile\rotateArray.ts
- PS C:\Users\nilof> node D:\Executions\HashAgile\rotateArray.js
- PS C:\Users\nilof> [ 5, 7, 9, 1, 2 ]