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Question 1: Reverse a List

Problem Statement:

Given an array of integers, reverse the given array in place using an index and loop rather than a built-in function.

Example

arr = [1, 3, 2, 4, 5]

Return the array [5, 4, 2, 3, 1] which is the reverse of the input array.

Function Description

Complete the function reverseArray in the editor below. reverseArray

has the following parameter(s):

int arr[n]: an array of integers Return

int[n]: the array in reverse order

Constraints

1 ≤ n ≤ 100

0 < arr[i] ≤ 100

Input Format For Custom Testing

The first line contains an integer, n, the number of elements in arr.

Each line i of the n subsequent lines (where 0 ≤ i < n) contains an integer, arr[i].

Sample Input For Custom Testing 5

1

3

2

4

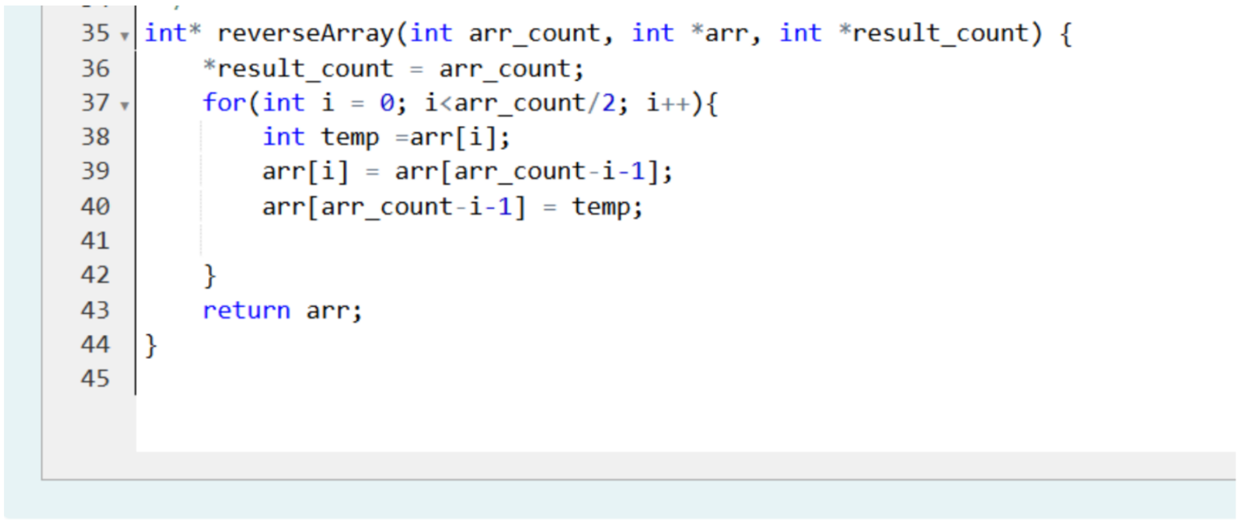
5

Sample Output

5 4 2 3 1

Explanation

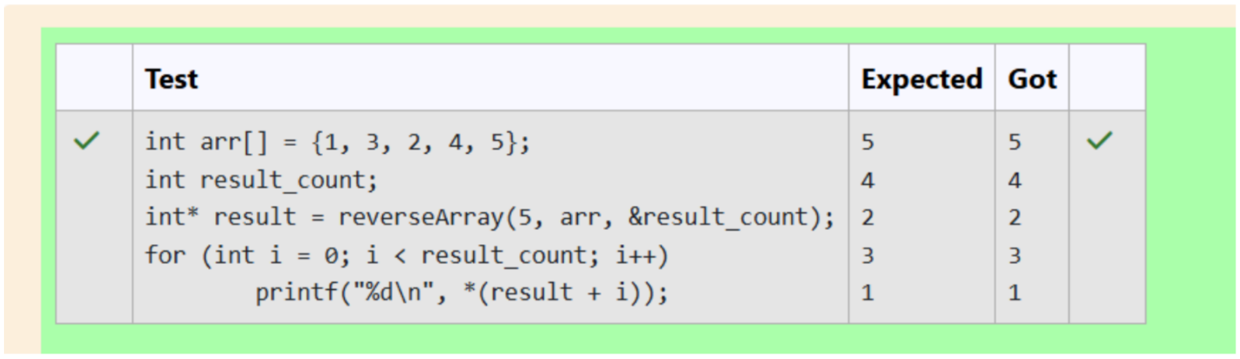
The input array is [1, 3, 2, 4, 5], so the reverse of the input array is [5, 4, 2, 3, 1].



```c
int* reverseArray(int arr_count, int *arr, int *result_count) {
    *result_count = arr_count;
    for(int i = 0; i<arr_count/2; i++){
        int temp =arr[i];
        arr[i] = arr[arr_count-i-1];
        arr[arr_count-i-1] = temp;

    }
    return arr;
}

```



	Test	Expected	Got	

✓	`int arr[] = {1, 3, 2, 4, 5};`
	`int result_count;`
	`int* result = reverseArray(5, arr, &result_count);`
	`for (int i = 0; i < result_count; i++)`
	`        printf("%d\n", *(result + i));`
		5
		4
		2
		3
		1
			5
			4
			2
			3
			1
				✓

Question 2: Maximize the Value

Rearrange an array of integers so that the calculated value U is maximized. Among the

arrangements that satisfy that test, choose the array with minimal ordering. The value of U for an array with n elements is calculated as:

U = arr[1]×arr[2]×(1÷arr[3])×arr[4]×...×arr[n-1] × (1÷arr[n]) if n is odd (or)

U = arr[1]×arr[2]×(1÷arr[3])×arr[4]×...×(1÷arr[n-1]) × arr[n] if n is even

The sequence of operations is the same in either case, but the length of the array, n, determines whether the calculation ends on arr[n] or (1÷arr[n]). Arrange the elements to maximize U and the items are in the numerically smallest possible

order.

Example: arr = [5, 7, 9, 21, 34]

To maximize U and minimize the order, arrange the array as [9, 21, 5, 34, 7] so U = 9 × 21 × (1÷5) × 34 × (1÷7) = 183.6. The same U can be achieved using several other orders, e.g. [21, 9, 7, 34, 5] = 21 × 9 × (1÷7) × 34 × (1÷5) = 183.6, but they are not in the minimal order.

Function Description: Complete the function rearrange in the editor below.

rearrange has the following parameter(s): int arr[n]: an array of integers Returns: int[n]:

the elements of arr rearranged as described

Constraints: 1 ≤ n ≤ 105, 1 ≤ n ≤ 109

Input Format For Custom Testing: The first line contains an integer, n, the number of elements in arr. Each line i of the n subsequent lines (where 1 ≤ i ≤ n) contains an integer, arr[i].

Sample Input For Custom Testing

STDIN Function

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4 → arr[] size n = 4 1

→ arr = [1, 2, 3, 4]

2

3

4

Sample Output

2

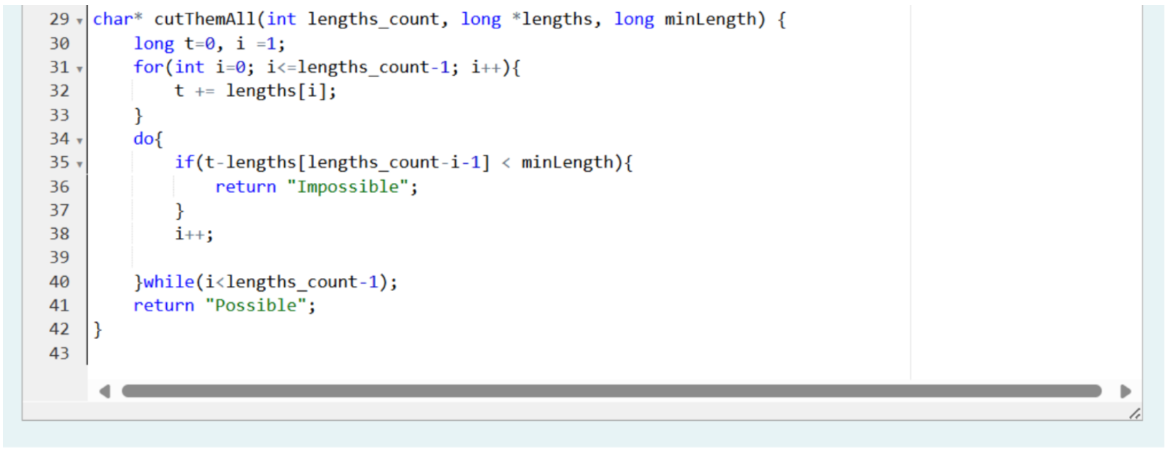
3

1

4

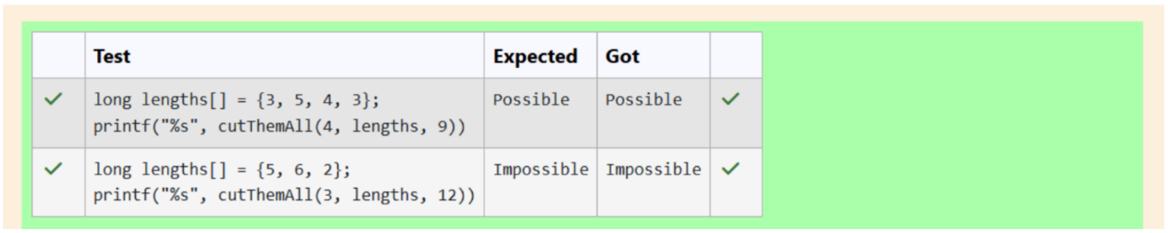
Explanation

U = 2×3×(1÷1)×4 = 24. All other arrangements where U = 24 are numerically higher than this array, e.g. [2, 3, 1, 4] < [3, 4, 1, 2].



```
char* cutThemAll(int lengths_count, long *lengths, long minLength) {
    long t=0, i =1;
    for(int i=0; i<=lengths_count-1; i++){
        t += lengths[i];
    }
    do{
        if(t-lengths[lengths_count-i-1] < minLength){
            return "Impossible";
        }
        i++;

    }while(i<lengths_count-1);
    return "Possible";
}
```



	Test	Expected	Got	
✓	`long lengths[] = {3, 5, 4, 3};` `printf("%s", cutThemAll(4, lengths, 9))`	Possible	Possible	✓
✓	`long lengths[] = {5, 6, 2};` `printf("%s", cutThemAll(3, lengths, 12))`	Impossible	Impossible	✓