

## Problem I. Count Subarrays

**Time limit** 1000 ms

**Code length Limit** 50000 B

**OS** Linux

You are given a permutation  $P$  of length  $N$ .

For each  $1 \leq i \leq N$ , find the number of subarrays of  $P$  with sum  $i$ .

**Note that in a permutation of length  $N$ , each integer from 1 to  $N$  appears exactly once.**

### Input Format

The first line contains an integer  $T$ , the number of test cases.

The first line of each test case contains a positive integer  $N$  – the length of  $P$ .

The second line contains  $N$  space separated distinct integers,  $P_1, P_2 \dots P_N$  – denoting the permutation  $P$ .

### Output Format

For each test case, output on a new line,  $N$  space-separated integers, where the  $i^{th}$  integer denotes the number of subarrays with sum  $i$ .

### Constraints

- $1 \leq T \leq 10^5$
- $1 \leq N \leq 10^5$
- $1 \leq P_i \leq N$
- $P_i \neq P_j$  if  $i \neq j$
- The sum of  $N$  over all test cases won't exceed  $2 \cdot 10^5$ .

### Sample

Input	Output
3 1 1 2 1 2 3 3 1 2	1 1 1 1 1 2

## Explanation

### Test case 1:

- Only possible subarray with sum 1 is  $[1]$ .

### Test case 2:

- Only possible subarray with sum 1 is  $[1]$ .
- Only possible subarray with sum 2 is  $[2]$ .

### Test case 3:

- Only possible subarray with sum 1 is  $[1]$ .
- Only possible subarray with sum 2 is  $[2]$ .
- Subarrays with sum 3 are  $[3]$  and  $[1, 2]$ .