Online-4 (A1 & A2)

January 2024, CSE 106

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Problem Statement

In this assignment, you will implement an algorithm to interleave the first half of a queue with the second half using only queue operations.

Input queue: [1, 2, 3, 4, 5, 6]
Output queue: [1, 4, 2, 5, 3, 6]

Here, the first half of the queue ([1, 2, 3]) is interleaved with the second half ([4, 5, 6]). The elements should be stored in the original queue in this interleaved manner.

Restrictions:

- **You can only use one additional queue (besides the original queue) for the interleaving process.**

- Only queue operations (like enqueue, dequeue, size, etc.) are allowed.

- You must maintain the relative order when interleaving the elements as shown in the example.

Input Format

The input will be provided in a file. The first line of the file contains one integer, which represents the number of test cases. For each test case, the next line contains an integer that specifies how many elements will be added to the queue. The following line contains the integers to be inserted into the queue.

Sample Input

```
2
6
1 2 3 4 5 6
4
1 2 3 4
```

Example Output

```
1 4 2 5 3 6
1 3 2 4
```