DSA Lab 4 Set 2 | **SubLinkedLists**

Create a linked list to store integers. The linked list supports the following operations:

- Push: Inserting a node at the head (first position)
- Pop: Deleting a node from the head (first position). If the list is empty, do nothing.
- Display the linked list
- Check Sublist: Check if the linked list is a sub-list of a given list. A list $A[1..N]$ is a sublist of $B[1..M]$ if for some i and j, $A[1..N]$ == $B[i..j]$. Note that if A == B, then A **is a sublist** of B.

Input

First line contains two integers M and Q, separated by space. M indicates number of nodes in initial linked list and Q indicates the number of queries. Second line contains M space-separated integers, representing values in the initial linked list. Next Q lines contain a query in each line. The query may be one of the following:

- `1 v` : Push value v in the linked list [insert at beginning].
- `2` : Pop node from the linked list [delete from beginning].
- `3` : Display values in the linked list, space separated.
- `4 k` a_1 a_2 a_3 $\ldots$ a_k : Check current list is sublist of another list of size k. This query is followed by k space separated strings in the same line to indicate the values in the other list. Refer to sample for clarity.

Constraints:

Basic Case:

- $1 \leq M \leq 10$
- $1 \leq Q \leq 50$
- $1 \leq \text{integers} \leq 10^6$
- $1 \leq k \leq 10$

Advanced Case:

- $1 \leq M \leq 500$
- $1 \leq Q \leq 500$
- $1 \leq \text{integers} \leq 10^6$
- $1 \leq k \leq 100$

Output

For every display(3) query output space separated values in the list. For every compare(4) query output 1 if the current linked-list is a sublist of the given list, 0 otherwise. The answer for each query must be printed on a separate line.

Sample Test Case

Input:

```
4 6
2 4 8 1
1 5
```

3

2

3

4 5 9 4 2 1 8

4 6 7 2 4 8 1 7

Output:

5 2 4 8 1

2 4 8 1

0

1