Garment Rush

Mr Bob works in a garment store. The garment store has garments placed as a big stack. Whenever a customer requests Bob to see some garment from the stack, he locates the garment in the stack, removes it carefully and shows it to the customer.

Sadly, the customer never buys the garment and Bob places the garment at the top of the stack.

Because there are so many requests by the customer, Bob would like to keep track of the position of each garment from the top of the stack i.e it is sufficient to know for each garment how many garments are placed above it.

Each garment is identified by a garment number printed on the garment.

Help Bob in keeping track of the position of each garment from the top of the stack. Help him with the Garment Rush!

Each time Bob removes a garment from the stack, you should output the number of garments that were placed above it before it was removed.

Input

On the first line a positive integer: the number of test cases(at most 100).

After that per test case -

- one line with two integers n and m(1 <= n, m, <=100,000) : The number of garments in the stack and the number of customer requests.
- one line with m integers a1, a2, … am (1<=ai <=n) representing the garment number of garments requested by the customer.

Initially, it is assumed that the initial stack contains the garments with garment number 1, 2, 3,... n in increasing order, where the garment with garment number 1 is the the topmost garment.

Output

Per test case: one line with m integers, where the i-th integer gives the number of garments above the garment with garment number ai, immediately before this garment is removed from the stack.

Note : After each customer request ai, the movie box with label ai is placed at the top of the stack.

Time Limit : 2 sec

Input	Output
2 3 3 3 1 1 5 3 4 4 5	2 1 0 3 0 4

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