

## 4704 Stringer

Imagine a list of strings that are all built from the first  $N$  letters of the alphabet, which all have a predetermined number of 'a's, a predetermined (but possibly different) number of 'b's, and so on. Imagine that it's sorted in alphabetical order, and numbered, starting at 0. What's the  $K$ -th string in the list?

For example, look at all strings of 'a's and 'b's ( $N = 2$ ) with 2 'a's and 3 'b's:

0: aabbb	5: babab
1: ababb	6: babba
2: abbab	7: bbaab
3: abbba	8: bbaba
4: baabb	9: bbaaa

If  $K = 5$ , then the  $K$ -th string in the list would be 'babab'.

### Input

Input will consist of multiple datasets. Each dataset consists of two lines.

On the first line are two integers,  $N$  ( $1 \leq N \leq 20$ ) and  $K$  ( $0 \leq K < m$ ), where  $N$  is the number of letters of the alphabet used,  $K$  is the index of the list element that should be found, and  $m$  (not given explicitly in the input) denotes the number of strings make up the list.

$m$ , the number of strings in the list may be very, very large (too large to permit generating the whole list), but the input will be chosen so that  $m$  and  $K$  will each fit in a 32 bit integer.

On the second line will be  $N$  non-negative integers, which represent the number of 'a's, the number of 'b's and so on. The sum of these integers is guaranteed to be at least 1 and no greater than 50.

End of input is indicated by a line with two zeros.

### Output

Output each answer string on its own line. Do not print any extra white space. Do not print any blank lines between answers.

### Sample Input

```
2 5
2 3
3 0
2 3 1
0 0
```

### Sample Output

```
babab
aabbbc
```