

Contest Duration: 2025-07-26(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250726T2100&p1=248>) - 2025-07-26(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250726T2240&p1=248>) (local time) (100 minutes)

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C - Concat (X-th)

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 300 points

Problem Statement

You are given N strings S_1, \dots, S_N .

For a sequence (A_1, \dots, A_K) of length K where all elements are between 1 and N , inclusive, define the string $f(A_1, \dots, A_K)$ as $S_{A_1} + S_{A_2} + \dots + S_{A_K}$. Here, $+$ represents string concatenation.

When all $f(A_1, \dots, A_K)$ for the N^K sequences are sorted in lexicographical order, find the X -th smallest string.

Constraints

- $1 \leq N \leq 10$
- $1 \leq K \leq 5$
- $1 \leq X \leq N^K$
- S_i is a string consisting of lowercase English letters with length at most 10.
- N, K , and X are all integers.

Input

The input is given from Standard Input in the following format:

2026-01-02 (Fri)

05:27:32 +11:00

$N \quad K \quad X$
 S_1
 \vdots
 S_N

Output

Output the answer.

Sample Input 1

Copy

```
3 2 6
abc
xxx
abc
```

Copy

Sample Output 1

Copy

```
abcxxx
```

Copy

- $f(1, 1) = \text{abcabc}$
- $f(1, 2) = \text{abcxxx}$
- $f(1, 3) = \text{abcabc}$
- $f(2, 1) = \text{xxxabc}$
- $f(2, 2) = \text{xxxxxx}$
- $f(2, 3) = \text{xxxabc}$
- $f(3, 1) = \text{abcabc}$
- $f(3, 2) = \text{abcxxx}$
- $f(3, 3) = \text{abcabc}$

When these are sorted in lexicographical order: abcabc, abcabc, abcabc, abcabc, abcxxx, abcxxx, xxxabc, xxxabc, xxxxxx, the 6-th is abcxxx.

Sample Input 2

Copy

```
5 5 416
a
aa
aaa
aa
a
```

Copy

2026-01-02 (Fri)
05:27:32 +11:00

Sample Output 2

Copy

aaaaaaa

Copy

'#telegram)

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