

Problem K

KIT Finding

Time limit: 2 seconds

“*Find the Fox*” is a recent book that contains 200 pages of word search puzzles comprising only the letters ‘F’, ‘O’ and ‘X’. The special feature of the book is that there is only a single occurrence of the word “FOX” throughout all of its pages.



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Recall that in a word search the goal is to find hidden words (only one hidden word in this case) in a grid of letters. The words can occur horizontally or vertically or diagonally, as well as forwards or backwards, allowing for a total of 8 different reading directions.

For this year’s NWERC, we want to create a baby version of “*Find the Fox*”. Your goal in this problem, therefore, is to create a word search grid with given dimensions and containing each of the letters ‘K’, ‘I’ and ‘T’ a given number of times. Similar to the original book, this grid should contain exactly one occurrence of the word “KIT”.

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I K I I T
K K T K T
I T I T I
K T T K I
```

Figure K.1: Illustration of Sample Output 1. Flip page for the solution.

Input

The input consists of:

- One line with five integers h , w , k , i , and t ($3 \leq h, w \leq 100$, $k, i, t \geq 1$, $k + i + t = h \cdot w$), where h and w are the height and width the word search grid should have, and k , i , and t specify the required number of occurrences of ‘K’, ‘I’ and ‘T’, respectively.

Output

Output a word search grid according to the given rules. It can be shown that such a word search grid always exists.

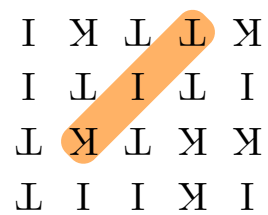
If there are multiple valid solutions, you may output any one of them.

Sample Input 1

4 5 6 7 7

Sample Output 1IKIIT
KKTKT
ITITI
KTTKI**Sample Input 2**

3 3 1 7 1

Sample Output 2III
KIT
III

A 4x5 grid of letters. The letters are arranged as follows:
Row 1: I, K, L, L, K
Row 2: I, L, I, L, I
Row 3: L, K, L, K, K
Row 4: L, I, I, K, I
A thick orange diagonal line highlights the letters at positions (1,4), (2,3), and (3,2), which are 'L', 'I', and 'K' respectively.