Flowerbed Redecoration

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

Joon-Pyo decorated a flowerbed in front of his home. The flowerbed is in the shape of an $n \times m$ grid, and one flower is planted in each cell. There are 26 colors, one corresponding to each uppercase letter from A to Z. Suddenly, he wanted to redecorate the flowerbed.

The flowerbed is too large to adjust the flowers one by one. He rented some equipment that can lift and rotate a square plot of land with a side length of d. He planned the construction in the following order, expecting the flowerbed to be properly redecorated.

1. Place the equipment so that exactly the flowers in the first d rows and the first d columns are inside.
2. Rotate the $d \times d$ square inside the equipment 90° clockwise. If this square contains flowers from the last d rows and the last d columns, then the construction is finished. Otherwise, if this square does not contain flowers in the last d columns, move the equipment x squares to the right. Otherwise, move the equipment down by y squares and all the way to the left so it contains flowers from the first d columns.
3. Repeat step 2 until construction is finished.

Note that the equipment will never go out of the flowerbed, as x, y, and d are carefully determined before construction begins.

He cannot start construction without knowing the outcome. Write a program that outputs the result.

Input

On the first line, five integers n, m, y, x, and d are given. ($1 \le n \times m \le 10^6$, $1 \le y \le n$, $1 \le x \le m$, $1 \le d \le \min(n, m)$, $\boldsymbol{n \equiv d \pmod{y}}$, $\boldsymbol{m \equiv d \pmod{x}}$).

Each of the next n lines contains exactly m uppercase letters, the current flowerbed.

Output

Output n lines, each containing m uppercase letters, the flowerbed after the planned construction.

Examples

standard input	standard output
4 4 1 1 2 AAAA BBBB AAAA BBBB	BAAA ABBB BAAA BBBA
6 5 1 2 3 RBRCY YBPBR PBRCY CYPBR PBRCY CYPBR	PYRBR CRCBB PPBPY CRCYB YRBCY PYRBR