Black-White Cubic Lattice

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given a cubic lattice of size $N \times M \times L$ such that each lattice point (i, j, k) is either white or black. The coordinates of the lattice point are all positive integers. Let the cost of flipping the color of lattice point (i, j, k) be $a_{i,j,k}$. Find the minimum cost to flip the colors of lattice points such that the bottom left corner $(1, 1, 1)$ is black, the top right corner (N, M, L) is white, and any two different lattice points (i_1, j_1, k_1) and (i_2, j_2, k_2) satisfy at least one of the following conditions.

- $i_1 > i_2$
- $j_1 > j_2$
- $k_1 > k_2$
- (i_1, j_1, k_1) is black.
- (i_2, j_2, k_2) is white.

Input

The first line includes three integers N, M, L ($1 \leq N, M, L \leq 5 \times 10^3$, $2 \leq N \times M \times L \leq 5 \times 10^3$), denoting the size of the lattice. Each of the next $L \times N$ lines contains a string of length M that only consists of `B` and `W`. The initial color of lattice point (i, j, k) is the j-th character of the $(k-1) \times N + i$ line. If the character is `B`, it means the color of the lattice point is black, otherwise it is white. Each of the next $L \times N$ lines contains M non-negative integers not greater than 10^5. The cost of flipping the color of lattice point (i, j, k) is the j-th integer of the $(k-1) \times N + i$ line.

Output

Output the minimum cost.

Example

standard input	standard output
2 2 2 WW WW BB BB 1 1 1 1 2 2 2 2	5