
DNA

Description

The Hamming distance between two equal-length DNA is the number of positions at which the corresponding symbols are different. For example, "TCGTA" and "CCTTA" 's Hamming Distance is 2. With given N DNA of length M, find the DNA sequence that has the minimum hamming distance of all sequences.

Input

The input consists of N+1 lines. The first line contains two space-separated positive integers, indicating the N number of DNA and its length M. After first line, N DNA sequence will be followed. DNA strand can be regarded as a long string consisting of the four characters A, T, G, and C.

Output

Print, DNA sequence that has the minimum hamming distance of all given sequence and in new line print it's humming distance. If there exists more than one DNA sequence that has the minimum hamming distance of all, print the lexicographically smallest.

Sample:

No.	Sample Input	Sample Output
1	5 8 TATGATAC TAAGCTAC AAAGATCC TGAGATAC TAAGATGT	TAAGATAC 7
2	4 10 ACGTACGTAC CCGTACGTAG GCGTACGTAT TCGTACGTAA	ACGTACGTAA 6