Make Many KUPC

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

There is a string S of length N consisting of uppercase English letters. You may perform the following operation on S any number of times.

- Choose a quadruple of integers (i, j, k, l) such that $1 \leq i < j < k < l \leq |S|$, $S_i =$ `K`, $S_j =$ `U`, $S_k =$ `P`, and $S_l =$ `C`. Replace all of S_i, S_j, S_k, S_l with `X`, and earn $(i \times j \times k \times l)$ yen.

Find the maximum amount of money that can be earned in total, modulo 998244353.

Input

The first line contains an integer N. ($1 \leq N \leq 5 \times 10^5$)

The second line contains a string S of length N consisting of uppercase English letters.

Output

Print the answer.

Examples

standard input	standard output
10 KKUPCUCAPC	1164
4 TUNA	0
30 KUCCKCKKPUKUPCUCPUCKPCKKUUPCPK	619704

Note

Note that you are asked for the remainder of the maximum value, not the maximum possible remainder.

For the first example, you can earn 1164 yen by performing the following operations.

- Choose $(i, j, k, l) = (1, 3, 4, 7)$. You earn $1 \times 3 \times 4 \times 7 = 84$ yen. Then $S =$ `XKXXCUXAPC`.
- Choose $(i, j, k, l) = (2, 6, 9, 10)$. You earn $2 \times 6 \times 9 \times 10 = 1080$ yen. Then $S =$ `XXXXCXXXAXX`.

It can be proven that it is impossible to earn more than 1164 yen, so print 1164.

For the second example, no operation can be performed even once, so print 0.