Problem B
Batching Badges
Time limit: 2 seconds

It is the year 2075. While organizing your archives, you rediscovered a collection of badges from the 2025 ICPC Regional contests, originally distributed by the Universal Cup organization.



A complete UCup badge set.
In this problem, however, we only consider a subset of three colors.

Your badges come in three distinct colors only: Ultramarine (`u`), Crimson (`c`), and Periwinkle (`p`). A complete souvenir pack is defined as four badges appearing in the exact order: Ultramarine, then Crimson, then Ultramarine, then Periwinkle (`ucup`).

Your collection consists of $4n$ badges arranged in a row. You vividly recall that in 2025, this arrangement was a **perfect batch**:

- The sequence could be partitioned into n disjoint subsequences (i.e., using each badge in exactly one subsequence), such that each subsequence formed a complete souvenir pack (`ucup`).

However, over the last 50 years, some badges have faded, making their colors indistinguishable. These positions are represented by `?`.

Given the current state of the badge sequence S, calculate the number of ways to restore the faded colors (`?`) to one of `u`, `c`, or `p`, such that the resulting sequence is a perfect batch. As the answer may be large, output it modulo $998\,244\,353$.

Note that a subsequence can be derived from a string by removing zero or more characters without changing the order of the remaining characters. For example, `ucp`, `c`, and `ucup` are subsequences of the string `ucup`, while `uucp` is not a subsequence of the string `ucup`.

Input

The first line contains an integer n ($1 \le n \le 50$).

The second line contains a string S of length $4n$ consisting of characters `u`, `c`, `p`, and `?`.

Output

Output the number of ways to replace every `?` in S with one of `u`, `c`, or `p`, so that the resulting string represents a perfect batch, taken modulo $998\,244\,353$.

Sample Input 1

```
1
????
```

Sample Output 1

```
1
```

Sample Input 2

```
1
ucup
```

Sample Output 2

```
1
```

Sample Input 3

```
1
uucp
```

Sample Output 3

```
0
```

Sample Input 4

```
1
uu?u
```

Sample Output 4

```
0
```

Sample Input 5

```
2
????????
```

Sample Output 5

```
11
```

Sample Input 6

```
4
u???c???u???p???
```

Sample Output 6

```
437
```