F - 1122 Subsequence 2

Editorial (/contests/abc433/tasks/abc433_f/editorial)

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 500 points

Problem Statement

You are given a string S consisting of digits.

A string T is called a **1122-string** if it satisfies all of the following conditions. (The definition is the same as in Problem C.)

- T is a non-empty string consisting of digits.
- $|T|$ is even, where $|T|$ denotes the length of string T.
- All characters from the 1-st through the $\frac{|T|}{2}$-th character of T are the same digit.
- All characters from the $(\frac{|T|}{2}+1)$-th through the $|T|$-th character of T are the same digit.
- Adding 1 to the digit of the 1-st character of T gives the digit of the $|T|$-th character.

For example, `1122`, `01`, and `444555` are 1122-strings, but `1222` and `90` are not 1122-strings.

Find the number, modulo 998244353, of **(not necessarily contiguous) subsequences** of S that are 1122-strings.

Two subsequences are counted separately if they are extracted from different positions, even if they are identical as strings.

Constraints

- S is a string consisting of digits with length between 1 and 10^6, inclusive.

Input

The input is given from Standard Input in the following format:

S

Output

Output the number, modulo 998244353, of subsequences of S that are 1122-strings.

Sample Input 1 Copy

```
1122
```

Copy

Sample Output 1 Copy

```
5
```

Copy

The following five subsequences satisfy the condition.

- 12 extracted from the 1-st and 3-rd characters of S
- 12 extracted from the 1-st and 4-th characters of S
- 12 extracted from the 2-nd and 3-rd characters of S
- 12 extracted from the 2-nd and 4-th characters of S
- 1122 extracted from the 1-st through 4-th characters of S

Thus, output 5.

Note that two subsequences are counted separately if they are extracted from different positions, even if they are identical as strings.

Sample Input 2 Copy

```
2025
```

Copy

Sample Output 2 Copy

```
0
```

Copy

There may be no subsequence that is a 1122-string.

Sample Input 3 Copy

```
0777468889971
```

Copy

Sample Output 3 Copy

```
30
```

Copy

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