

# Tidy up the flower chain!

You are given a flower chain with  $s$  number of flowers which consist of only two different colours. You can refer to two colours using binary numbers 0 and 1. The flowers are attached in a random order.

You are allowed to perform the following operations to the flower chain any number of times (even zero):

- Choose any single flower and remove it.

You have to make the flowers have alternating colours, i. e. after you perform the operations, every two adjacent colours in the flower chain should be different.

Your goal is to calculate two values:

- the minimum number of operations required to make the flower chain have flowers in alternating colours.
- the number of different shortest sequences of operations that make the flower chain alternating. Two sequences of operations are different if, in at least one operation, the chosen flower is different in these two sequences.

## Input Format

The first line contains one integer  $t$ , the number of test cases.

Each test case consists of one line containing the string  $s$  (flower sequence). The string  $s$  consists of characters 0 and/or 1 only.

## Constraints

- $1 \leq t \leq 10^4$
- $1 \leq |s| \leq 2 \times 10^5$

## Output Format

For each test case, print two integers:

- the minimum number of operations you have to perform
- the number of different shortest sequences of operations

Since the second number might be large, print its remainder modulo 998244353.

## Sample Input 0

```
3
10010
111
0101
```

## Sample Output 0

1	2
2	6
0	1