

Shokry and Strings

Shokry loves strings very much that he wants to distinguish every string he sees. So, he decided to give every string a special value, he calls it "String Value".

Consider that every character has a value corresponding to its order in the Alphabetical order (A = 0, B = 1, C = 2... etc.). He looks at each character in the string from left to right, takes the sum of the values of all the characters, putting into consideration that every time a character appears one more time, its value increases by 1. Let's call this sum X. And the String Value is the uppercase letter corresponding to the number (X % 26) followed by the size of the string. (For more clarification, take a look at the examples).

Given a string S, calculate the String Value for that string.

Input

The first line contains a single integer T ($1 \leq T \leq 10$) – the number of test cases, followed by T lines. Each line contains a string S, consisting of uppercase letters. ($1 \leq |S| \leq 10^5$)

Output

For each test case print the answer to the problem.

Example

Input:

```
1
ABBCDD
```

Output:

```
M6
```

Note:

In the first test case, the values of the characters in the string will be:

```
A = 0
B = 1
B = 2 (Value of B increased by one, because it appeared again)
C = 2
D = 3
D = 4 (Value of D increased by one, because it appeared again)
```

The sum $X = 0 + 1 + 2 + 2 + 3 + 4 = 12$

The letter corresponding to $12 \% 26$ is 'M'. Then the String Value will be M6.