

Task: PAF

Palindromic Finder

UFAM Workshop, contest #5. Source file paf.* Available memory: 128 MB.

A word is a palindrome if it does not change after reversing the order of its letters (thus `aba` and `abba` are palindromes, but `abb` is not). Write a program which determine whether a given word s contains a palindrome of length at least 3.

Input

In the first line of the input there is an integer d ($1 \leq d \leq 10$), specifying the number of test cases. The next d lines contain test cases; the i -th of these lines contains a non-empty words consisting of small letters of English alphabet, of length not greater than 10^6 .

Output

On the output you have to write exactly d lines: the i -th line should contains word **TAK** (Polish for *yes*) or **NIE** (Polish for *no*) depending on whether the word from the i -th test case contains a palindrome (consisting of at least three characters) or not.

Example

For the input data:

```
2
caba
aab
```

the correct result is:

```
TAK
NIE
```