C++ PROGRAMMING
WORKSHEET 1

Note: all the problems are from online contests like codeforces, HackerRank and other sources

Task 1(Vanya and Fence):

Vanya and his friends are walking along the fence of height h and they do not want the guard to notice them. In order to achieve this the height of each of the friends should not exceed h. If the height of some person is greater than h he can bend down and then he surely won't be noticed by the guard. The height of the i-th person is equal to a_i.

Consider the width of the person walking as usual to be equal to 1, while the width of the bent person is equal to 2. Friends want to talk to each other while walking, so they would like to walk in a single row. What is the minimum width of the road, such that friends can walk in a row and remain unattended by the guard?

Input

The first line of the input contains two integers n and h ($1 \le n \le 1000$, $1 \le h \le 1000$) — the number of friends and the height of the fence, respectively.
The second line contains n integers a_i ($1 \le a_i \le 2h$), the i-th of them is equal to the height of the i-th person.

Output

Print a single integer — the minimum possible valid width of the road.

Examples

input

```
3 7
4 5 14
```

output

```
4
```

input

```
6 1
1 1 1 1 1 1
```

output

```
6
```

Task 2(Anton and Danik):

Anton likes to play chess, and so does his friend Danik.

Once they have played n games in a row. For each game it's known who was the winner — Anton or Danik. None of the games ended with a tie.

Now Anton wonders, who won more games, he or Danik? Help him determine this.

Input

The first line of the input contains a single integer n ($1 \le n \le 100\,000$) — the number of games played.

The second line contains a string s, consisting of n uppercase English letters 'A' and 'D' — the outcome of each of the games. The i-th character of the string is equal to 'A' if the Anton won the i-th game and 'D' if Danik won the i-th game.

Output

If Anton won more games than Danik, print "Anton" (without quotes) in the only line of the output.

If Danik won more games than Anton, print "Danik" (without quotes) in the only line of the output.

If Anton and Danik won the same number of games, print "Friendship" (without quotes).

Examples

input

```
6
ADAAAA
```

output

```
Anton
```

input

```
7
DDDAADA
```

output

```
Danik
```

input

```
6
DADADA
```

output

```
Friendship
```

Task 3(Petya and Strings):

Little Petya loves presents. His mum bought him two strings of the same size for his birthday. The strings consist of uppercase and lowercase Latin letters. Now Petya wants to compare those two strings lexicographically. The letters' case does not matter, that is an uppercase letter is considered equivalent to the corresponding lowercase letter. Help Petya perform the comparison.

Input

Each of the first two lines contains a bought string. The strings' lengths range from 1 to 100 inclusive. It is guaranteed that the strings are of the same length and also consist of uppercase and lowercase Latin letters.

Output

If the first string is less than the second one, print "-1". If the second string is less than the first one, print "1". If the strings are equal, print "0". Note that the letters' case is not taken into consideration when the strings are compared.

Examples

input

```
aaaa
aaaA
```

output

```
0
```

input

```
abs
Abz
```

output

```
-1
```

input

```
abcdefg
AbCdEfF
```

output

```
1
```