BlockChain

You are a maintainer of the project FartCoin, and have been tasked with ensuring the validity of the blockchain. FartCoin is the first fully centralized blockchain where you are the source of total authority and must manually check the validity of the blockchain. Users will submit their "work" to you, upon which you will approve or reject their work. If approved, the blockchain will be appended to.

FartCoin has a very simple design: the first "block" is simply the string "fartcoin". To add a "block" to the blockchain, the new block must be a nonce that is at least 5 characters, such that when the nonce is appended to the current blockchain, the resulting (whole) blockchain hashes to a prime number. The "hashing algorithm" used by fartcoin is a simple XOR-based hash as follows (using the ASCII values of each character):

```
hash(blockchain):
    hash = 0
    for each char in blockchain:
        hash = hash << 1
        hash = hash ^ char
    return hash
```

Input

The first line of input contains the value $n \leq 2^{10}$. The next n lines will contain the usernames and the nonce that they want to submit, space separated and one per line. The username will be one string of only alphabetic characters with no space. The nonce can contain any character, including spaces. All characters will be valid ASCII.

Output

For each submission, output the name of the individual, whether their nonce has been accepted or rejected, and the total number of accepted submissions so far (including the current submission).

Sample Input

```
8
Joe helloworld?
Bob helloworld!
Carl ohno%
Franklin ilovefartcoin5
Daniel sendmemillions)
Edgar create10coins!
Josh ihatefartcoin123
Zach delallcoinsQ
```

Sample Output

```
Joe rejected 0
Bob accepted 1
Carl rejected 1
Franklin accepted 2
Daniel accepted 3
Edgar rejected 3
Josh rejected 3
Zach accepted 4
```