Problem H
Hand Gestures
Time limit: 1 second

Memory limit: 1024 megabytes

Problem Description

Nowadays, many games are moving toward the gesture control system rather than the old joystick controls. Figure 1 presents an image collection of hand gestures for some English alphabet.
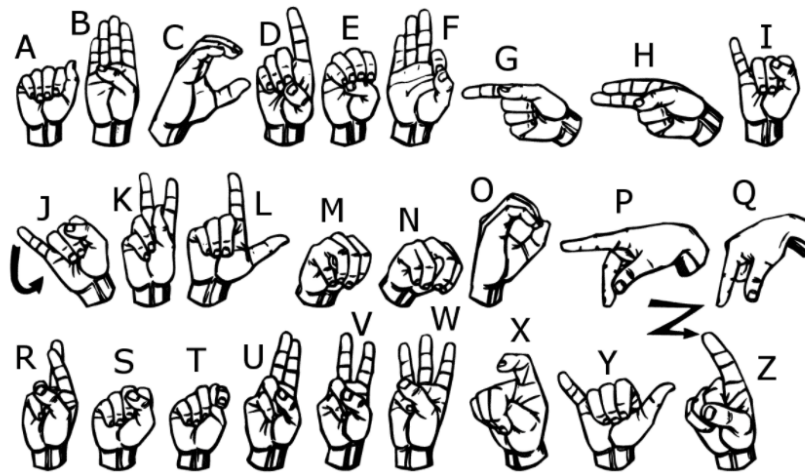

Figure 1: Hand Gestures for the English Alphabet

Hank wants to write a program to recognize English alphabets using sign language. He found that Modified National Institute of Standards and Technology (MNIST) database provides sing language datasets. All samples in a dataset are byte vectors of dimension d. That is, every sample can be represented by a vector $(x_1, x_2, \ldots, x_d)$ where x_i is a byte (from 0 to 255) for $1 \leq i \leq d$. Hank plans to use them to train a model and to test his program. He builds two sets of data. One is for training and another is for testing.

Hank is an outstanding data scientist, but his data processing skill is awful. He accidental puts some of the training data into the testing dataset. This will affect the evaluation result of Hank's program. Please write a program to help Hank to remove the training data from the testing dataset.

Input Format

The first line contains three space-separated positive integers n, m and d. n is the number of the labeled samples in the training data. m is the number of the labeled samples in the testing data. d is the dimension of the labeled samples. Then $n + m$ lines follow. Each of the first n of them represents a labeled sample in the training data, and each the last m of them represents a labeled sample in the testing data. Every labeled sample is a line containing $d+1$ space-separated positive integers $t, x_1, x_2, \ldots, x_d$.

Output Format

For each sample in the testing data, output one line. If the sample is in the training data, print BAD. Otherwise, print GOOD.

Technical Specification

- $1 \le n \le m \le 10^5$
- $0 < m \times d \le 10^6$
- For every sample, $0 \le t \le 25$ and $0 \le x_i \le 255$ for $1 \le i \le d$.

Sample Input 1

```
2 3 4
1 2 3 4 5
6 7 8 9 0
1 2 3 4 5
6 7 8 9 0
9 0 1 2 3
```

Sample Output 1

```
BAD
BAD
GOOD
```