You stumble into the refreshment tent for some much needed nutrition, but you discover jars of candy instead.

On each table is one jar and a list of names and numbers. Apparently people have been making guesses about how much candy is in each jar. Now we need to know whose guesses were closest.

problem 4

Candy Count

5 points

Write a program to determine the winner(s) with the closest guesses to the number of candies in each jar.

Input

Input for each jar begins with an integer C (C < 1000) describing the actual candy count for that jar.
The next line contains the number of people P (P < 30) guessing.

The following P lines contain the guess and name of the person. The guess is an integer G (G < 1000). A single space will separate the guess from the name. The name will consist only of uppercase and lowercase letters A-Z. Names will not contain any spaces.

Example 1:
```
480
4
90 John
400 Melinda
560 Chuck
173 Miika
```

Example 2:
```
362
5
123 Miika
456 John
321 Chuck
400 Melinda
314 David
```

Output

Output the name of the winner (the one with the closest guess for the jar.) If multiple people are just as close to the actual candy count, output their names in the order they appear in the input, separated by spaces.

Example 1:
```
Melinda Chuck
```

Example 2:
```
Melinda
```