- G may not be connected.
- G doesn't have multiple edges and self-loops.

There are n vertices in V, denoted by $1, 2, ..., n$.

Please answer two classes of queries:

- D u : Asking the degree of vertex u in graph G . Print the degree in a line.
- N u v : Asking if u, v are neighboring vertices in graph G . If yes, print a line "Y". Otherwise, print a line "N".

Input

The first line contains three integers n, m and q — the size of V, the size of E and the number of queries.

Each of the following m lines contains two integers u_i and v_i ($1 \leq u_i, v_i \leq n$; $u_i \neq v_i$), being an edge in E.

In the following q lines, each line contains one query described above.

Restrictions

- $2 \leq n \leq 10^5$
- $1 \leq m \leq min(\frac{n(n-1)}{2}, 2 \times 10^5)$
- $1 \leq q \leq 10^6$

Output

For each query, output one line.

Sample Input 1

```
7 5 4
1 2
3 2
1 3
2 6
4 6
D 2
D 5
N 2 1
N 4 7
```

Sample Output 1

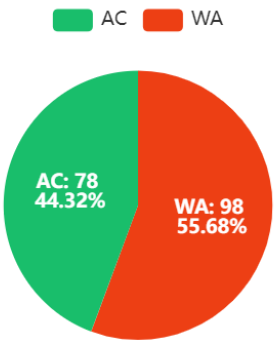
```
3
0
Y
N
```

Submissions
Rankings
View Contest

Information

ID	1
Time Limit	1000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	ta_david
Level	Hidden
Score	100
Tags	Show

Statistic Details



Language: C Theme: Solarized Light

You have solved the problem

Submit for Sample Test

Submit

Contest has ended

Sample Test Input

```
7 5 4
1 2
3 2
1 3
2 6
4 6
D 2
D 5
N 2 1
N 4 7
```

Sample Test Output