

Run to the presses

After deciding the winning sticker, Sinf and NI decided to race to see who gets to keep the sticker. Knowing that NI is faster, SINF is planning to take a few shortcuts along the path.

The map contains N street corners and M bidirectional streets, the starting line is at the stree corner 1 and the finish line at the Nth street corner. There is always a path between these street corners.

Can SINF win the race?

Input Format

The first line contains the time it takes NI to reach the end (T). The second line contains the number of street (N) corners followed by the number of streets (M), separated by a space. The following M lines contain the origin (Oi), destination (Di) and time (ti) it takes to go through that street

Constraints

$$1 \leq T \leq 100000$$

$$2 \leq N \leq 100000$$

$$1 \leq M \leq 100000$$

$$1 \leq t \leq 1000$$

Output Format

Who wins the race (SINF or NI, all uppercase).

Sample Input 0

```
12
6 6
1 2 6
1 3 3
2 5 4
3 4 2
4 5 1
5 6 5
```

Sample Output 0

```
SINF
```

Sample Input 1

```
600
10 15
9 6 525
5 1 333
9 2 528
6 5 561
```

```
6 7 105
6 8 203
4 8 609
7 3 525
4 10 447
1 4 331
4 1 761
4 7 184
5 10 565
6 9 16
2 3 853
```

Sample Output 1

```
NI
```