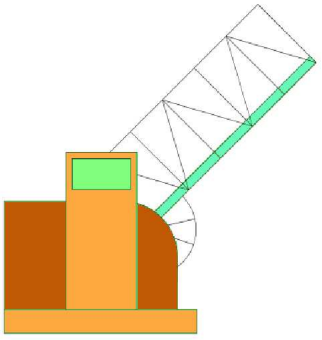
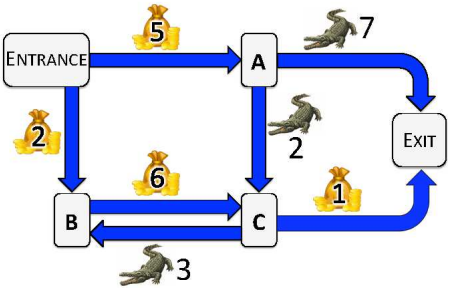
Problem: Mazy Luck

Dirk's next challenge is a dicey game. The game consists in walking through a maze of (one way) corridors, connecting small rooms. Players enter the maze through the Entrance room and leave it from another room, the Exit. At the Entrance, they receive an unlimited credit card with zero balance and have no gold coins.



In each corridor there is:

- either a bag of gold coins;
- or a moat with crocodiles, a (raised) drawbridge and an Automatic Toll Booth. In this case, to cross the corridor, the bridge must be lowered, which happens when the player pays the amount of gold coins written on the corridor walls. If the player does not have enough coins, he can use his credit card to pay the rest.



The amount of coins in a bag or required to lower a bridge varies depending on the corridor. Every time a player walks the same corridor, he finds himself in the same situation: either there is always a bag containing the same number of gold coins, or there is always a raised bridge, which is lowered with the same amount of gold coins. No corridor has both a bag and a bridge.

Each corridor has an arrow painted on the floor indicating the direction in which players are allowed to move. Backtracking is strictly prohibited. The game ends as soon as the player arrives at the Exit (which is reachable from any room). At that moment, the player balance (gold coins possessed minus credit card debt) determines whether the player won, lost, or neither won nor lost money.

Dirk has already decided to enter the game. However, immediately before entering the maze, he asked the organization if he could lose money by misfortune or lack of concentration. Could you answer that question?

With the maze depicted in the figure, the answer is yes. If Dirk goes from the Entrance to room A (collecting 5 gold coins) and then from room A to the Exit (spending 7 gold coins to lower the drawbridge), he loses money.

Task

Given a maze description, the goal is to find out if Dirk can lose money.

Input

The first line of the input has two space separated integers: R, the number of rooms, and C, the number of corridors. Rooms are identified by integers, ranging from 0 to $R-1$. The Entrance is room 0 and the Exit is room $R-1$.

Each of the following C lines contains two distinct space separated integers, i and j, the letter `B` or the letter `C`, and an integer G. The first two numbers indicate that there is a corridor from room i to room j. If the letter is `B`, the corridor has a bag with G gold coins. If the letter is `C`, the corridor has crocodiles and the drawbridge is lowered with G gold coins. It is guaranteed that no corridor starts at the Exit (that is, $i \neq R-1$).

Constraints

$2 \leq R \leq 5\,000$	Number of rooms.
$1 \leq C \leq 50\,000$	Number of corridors.
$1 \leq G \leq 100$	Number of gold coins in a bag or required to lower a bridge.

Output

The output has a single line with: "yes", if Dirk can lose money; "no", if he cannot.

Sample Input 1

```
5 7
1 4 C 7
0 1 B 5
0 2 B 2
1 3 C 2
2 3 B 6
3 2 C 3
3 4 B 1
```

Sample Output 1

```
yes
```

Sample Input 2

```
5 7
1 4 C 5
0 1 B 5
0 2 B 2
1 3 C 2
2 3 B 6
3 2 C 3
3 4 B 1
```

Sample Output 2

```
no
```