# Problem ID: mobius

On your journey from Asia to North America, you were in a hurry and unfortunately took the wrong gate. Realizing this too late, you ended up on a flight to the International Space Station. As the next flight back to Earth is scheduled for next month, you have some spare time and start experimenting with small geckos.

You take an ordinary strip of paper and place geckos all over it on both sides – in zero gravity it is easy for them to stick to the paper. The geckos can move around their side of the strip without any problems, but they cannot switch to the other side. After a short while, the geckos start to play a game of last-gecko-standing. Two geckos start a fight until one of them loses adhesion and flies around uncontrollably. These fights continue until no two geckos can meet anymore.[1]

After a few tests, you go one step further: You stop restricting yourself to one strip of paper and glue some of the paper strips' ends together to form paper networks with larger and even twisted surfaces. The two sides of your paper strips have two distinct colors – red and yellow. You take the papers one by one and add them to your network. For this, you take one end of the strip and fix it on top of one connection point with the yellow side facing away from the point. Then you take the other end and glue it to a gluing point as well, but this time you decide whether to have the red or yellow side facing away.

At every connection point, you arrange the strips glued there in a star-like manner as shown below. Naturally, geckos can switch there between all connected strips, but they can never switch around the edge of a strip to the opposite side. After the fights, all geckos remaining on paper strips are declared winners, and you wonder how many winners your network will have.
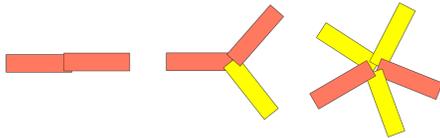
(a) Star-like gluing points with two, three and five strips connected and different colors facing upwards.
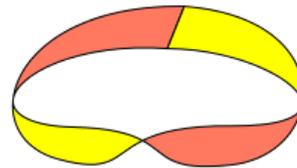
(b) The first sample input. Only one gecko will survive on this loop.

Input

The input consists of:

- One line with two integers n, g ($1 \le n \le 200\,000, 1 \le g \le 100\,000$) giving the number of paper strips and the number of junctions where strips are glued together.

- n lines, each with a character t and two integers a and b ($1 \le a, b \le g$, $t \in \{$S$,$D$\}$), describing a paper strip where one end is glued to the ath junction with the yellow side facing away, and the other end is glued to the bth junction with the *same* (S) or a *different* (D) color facing away from the point.

You may safely assume that at least two ends meet at every junction.

Output

Print the number of geckos to be declared winners.

Sample Input 1	Sample Output 1
1 1 D 1 1	1

Sample Input 2	Sample Output 2
2 2 D 1 2 D 1 2	2

Sample Input 3	Sample Output 3
2 2 S 1 2 D 2 1	1

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[1]No geckos were harmed during the experiments. Submissions are tested with imaginary geckos.