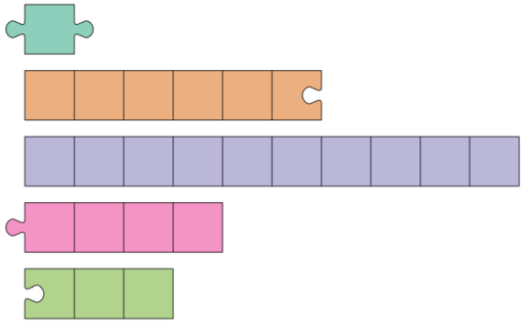
Problem D
Puzzle Pieces

Time Limit: **2 seconds**
Mem limit: **512 Megabytes**

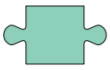
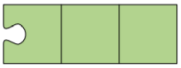
You are given n pieces of $1 \times a$ puzzle (one dimensional puzzle) as shown in the figure below.



Each piece has two heads which can be one of three types: **"in"**, **"out"**, or **"none"**.

- The "**in**" type means that the border of the head is **concave**.
- The **"out"** type describe a **convex** border.
- The "**none**" type denotes a **straight** border.

For example,

	This piece has two **"out"** heads, or two **convex** heads.
	This piece has an **"in"** head on the left and a **"none"** head on the other side.

There are a few rules for you:

1. You cannot reverse these pieces, in other words, you cannot swap left and right borders of any piece.
2. Any **"in"** head can be connected with any **"out"** head and vice versa.
3. You cannot connect pieces that have **"none"** heads.

You have to connect many pieces (possibly one), one after another, in order to achieve a single large piece of length L. Both heads of this combined piece must be **"none"** type. You wonder how many different sets of pieces that you can build up the large piece of length L, using **all** the pieces in the set. Because the number of different sets could be large, you have to calculate it modulo $10^9 + 7$.

Note: You should count the number of sets of pieces, not the number of ways of connecting them.

Input

The first line contains two integers n and L – the number of puzzle pieces and the desire length of the large piece $(1 \le n \le 300, 1 \le L \le 300)$.

The following n lines contain the description of the pieces. Each line contains an integer and two strings a_i, l_i and r_i — the length of the piece, type of its left head, and type of its right head, respectively $(1 \le a_i \le L; l_i, r_i \in \{\text{“}\texttt{in}\text{”}, \text{“}\texttt{out}\text{”}, \text{“}\texttt{none}\text{”}\})$. String “`in`” denotes concave border, “`out`” — convex, “`none`” — straight.

Output

Output a single integer — the number of sets of pieces, such that you can build the desired large piece using the given pieces, modulo $10^9 + 7$.

Sample Input

Sample Output

Sample Input	Sample Output
5 10 1 out out 6 none in 10 none none 4 out none 3 in none	3
4 5 1 none out 1 in out 2 in out 1 in none	1

Explain

The following figure explains the first sample test. There are three sets of pieces as illustrated in the figure.