

Funny programming contest

Bob is trying to solve many problems.

Today he's trying to do his best at "Funny programming contest". In this contest there is N rounds.

Each round is starting in moment A_i and ends in moment B_i . Rounds can overlap on each other. For each round there is one problem to solve. He can't solve more than one problem at once.

Bob knows that problems are very difficult, so he assumed that he will do each round for more than half of time the round lasts.

He knows start and end time for each round.

Help him figuring out if he can spend as much time as he want for each round.

Input

First line contains number N ($1 \leq N \leq 2 \cdot 10^5$)

In next N lines there are three numbers, a_i, b_i, c_i ($0 \leq a_i < b_i \leq 10^9$, $(b_i - a_i) / 2 < c_i \leq b_i - a_i$), time when round i starts, time when round i end, and time which Bob wants to spend for round i .

Output

Print "YES" if Bob can spend as much time as he wants for each round, otherwise print "NO"

Example

Input:

```
2
1 5 3
1 2 1
```

Output:
YES

Input:

```
2
1 5 3
2 3 1
```

Output:
NO