Data Structures Assignment-4

E) Count the Interactions

For the city parade there are N people standing in a line at different positions. Person i is standing at position x_i and has wealth w_i. Additionally person i can see the person standing at a distance at most r_i from him.

A person with wealth W only interacts with people whom he can see and those who have wealth in the range $W - K$ to $W + K$.

Given the arrangement of people in the parade, tell how many pairs of people would interact with each other.

Input

First line contains two integers N and K, the number of people and wealth difference for interaction.

The next N lines contain 3 integers each, x_i, w_i, r_i

Output

Output a single integer which is the total number of interactions.

Constraints

$1 \leq N \leq 100000$, number of people
$1 \leq K \leq 20$
$0 \leq x_i, w_i, r_i \leq 10^9$

Sample Input 1

```
3 2
3 6 1
7 3 10
10 5 8
```

Sample Output 1

```
1
```

Sample Explanation 1

The first person can see the second, but second can't see the first. The first person can't see the third. The second and the third robot can see each other and their wealths don't differ more than 2. Hence, only one interaction will happen.

Limits

Time: 4 second

Memory: 256 MB