Singing

Wen Yuen “Peanut”, a famed vocalist and leader of the Peanut Choir, was practicing the notes for his latest concert, “*L’arachide d’excréments*”. Unfortunately, Wen Yuen’s voice had deteriorated over his career, and he can no longer perform the sudden pitch jumps he was so famous for. The manuscript consists of N notes, each in bar B_i and with a pitch P_i. There are B bars, and every note in a bar has a distinct pitch. Due to his decreased vocal dexterity, he can only sing a note in each bar, and can only sing a note if the difference between the pitch of previous note and the current note is within K. In order to remain relevant and not get kicked out of the choir, he wants to find how many different songs he can sing from bar 1 to B.

Limits

$1 \leq N, B \leq 1\ 000\ 000$

$1 \leq K, P_i \leq 1\ 000\ 000\ 000$

Input

The first line will contain three integers, N, K and B.

The next N lines will contain 2 integers B_i and P_i , the bar and pitch the i^{th} note is in.

Output

Output the number of different note sequences from bar 1 to bar B he can sing modulo 1000000007

Sample Input

```
12 2 5
1 1
```

```
1 3
1 5
2 2
2 4
2 7
3 3
3 8
4 5
4 10
5 7
5 8
```

Sample Output

```
5
```

Peanut can sing the sequences

1 - 2 - 3 - 5 - 7

3 - 2 - 3 - 5 - 7

3 - 4 - 3 - 5 - 7

5 - 4 - 3 - 5 - 7

5 - 7 - 8 - 10 - 8

As such, he can sing *5* different sequences.

Subtasks

Subtask 1 (2 points)

Each bar will have 0 or 1 notes.

Subtask 2 (31 points)

$K, P \leq 1\,000\,000$

Subtask 3 (67 points)

No additional constraints apply.