

## Problem L. Birthday

Time limit: 2 seconds  
Memory limit: 512 megabytes

Bogdan received a birthday gift: a board game called “Subsegment sum”. This entertaining game consists of  $n$  two-sided cards. An integer is written on each side of each card. The cards are arranged in a row on the table and are indexed from 1 to  $n$ , left to right. After the arrangement the cards can be turned over, but not swapped.

The player receives tasks, each task is a pair of numbers  $l$  and  $r$ . After receiving a task, the player places each card with index from  $l$  to  $r$ , inclusive, some side up. The target is to make the sum of the numbers on the upper sides of cards with index from  $l$  to  $r$ , inclusive, as large as possible.

Bogdan became bored with achieving maximum sums, so he decided to make the game harder. Now Bogdan selects a number  $k$ , and when he solves the task for cards from  $l$  to  $r$ , inclusive, he places these cards with some side up in such a way that the sum of the numbers on their upper sides was as large as possible, but not divisible by  $k$ . If Bogdan is able to solve this task, he denotes the received maximum sum as  $f(l, r)$ . If he is unable to select sides to make the sum on the upper sides indivisible by  $k$ , he considers  $f(l, r) = 0$ .

After some playing, Bogdan started thinking about the following problem. He wants to calculate the sum of  $f(l, r)$  for all possible pairs  $l$  and  $r$ , in other words, calculate  $\sum_{1 \leq l \leq r \leq n} f(l, r)$ .

Help Bogdan find this sum. Since the answer can be very large, calculate it by modulo  $10^9 + 7$ .

### Input

The first line contains two integers  $n$  and  $k$  ( $1 \leq n \leq 5 \cdot 10^5$ ;  $1 \leq k \leq 10^9$ ).

Each of the next  $n$  lines contains a description of a card on the table: two integers  $a_i$  and  $b_i$  ( $1 \leq a_i, b_i \leq 10^9$ ) — the numbers written on two sides of the card with index  $i$ .

### Output

Output one integer, the answer taken modulo  $10^9 + 7$ .

### Examples

standard input	standard output
3 3 1 2 2 3 3 1	23
5 5 4 1 4 2 2 3 2 4 1 5	130