



Range Cover (cover)

In this task you are given in input N different ranges and a number K . Each range is defined as a pair of integers $[\text{start}, \text{end}]$, where both start and end are included in the range. Your goal is to count how many integers are contained in exactly K of these ranges.

For example, given $K = 3$ and $N = 6$ ranges: $[3, 10]$, $[0, 5]$, $[6, 13]$, $[1, 15]$, $[13, 19]$ and $[15, 18]$, only 10 integers are covered exactly by $K = 3$ ranges, in particular:

- 3 is covered by the ranges: $[3, 10]$, $[0, 5]$ and $[1, 15]$
- 4 is covered by the ranges: $[3, 10]$, $[0, 5]$ and $[1, 15]$
- 5 is covered by the ranges: $[3, 10]$, $[0, 5]$ and $[1, 15]$
- 6 is covered by the ranges: $[3, 10]$, $[6, 13]$ and $[1, 15]$
- 7 is covered by the ranges: $[3, 10]$, $[6, 13]$ and $[1, 15]$
- 8 is covered by the ranges: $[3, 10]$, $[6, 13]$ and $[1, 15]$
- 9 is covered by the ranges: $[3, 10]$, $[6, 13]$ and $[1, 15]$
- 10 is covered by the ranges: $[3, 10]$, $[6, 13]$ and $[1, 15]$
- 13 is covered by the ranges: $[6, 13]$, $[1, 15]$ and $[13, 19]$
- 15 is covered by the ranges: $[1, 15]$, $[13, 19]$ and $[15, 18]$

All the other indexes are covered by less than $K = 3$ ranges.

Input data

The first line of the input contains two space-separated integers \mathbf{N} and \mathbf{K} representing the number of ranges available and the number of index of overlapping ranges to find.

The next \mathbf{N} lines contain two space-separated integers each, representing the starting and the ending point of the coordinates (included).

Output data

The output must contain only one integer, representing how many indexes are covered by exactly \mathbf{K} ranges.

Scoring

For each of the test cases the program will be tested, the following constraints are met:

- Subtask 1 (40 points): $N = 10$ and ranges are between 0 and 10.
- Subtask 2 (40 points): $N = 100$ and ranges are between 0 and 10 000.
- Subtask 3 (20 points): $N = 10\,000$ and ranges are between 0 and 10^{15} .

Examples

input	output
6 3 3 10 0 5 6 13 1 15 13 19 15 18	10

Explanation

The numbers covered with 3 different ranges are: 3, 4, 5, 6, 7, 8, 9, 10, 13 and 15.