Event Hopping 2

In IOI Park, N events will be held soon. The events are numbered from 1 to N. The i-th event ($1 \leq i \leq N$) will start at time $L_i + 0.1$ and finish at time $R_i - 0.1$. Here L_i and R_i are integers.

JOI-kun will attend exactly K events among them. It is forbidden to enter an event after it starts, or to leave an event before it finishes. We ignore the time to move between the locations of events.

JOI-kun wants to attend events with small indices. More precisely, let $a_1, \ldots, a_K$ ($1 \leq a_1 < \cdots < a_K \leq N$) be the indices of the events JOI-kun will attend. Then $(a_1, \ldots, a_K)$ should be the smallest possible sequence in lexicographic order. Here, a sequence $(a_1, \ldots, a_K)$ is smaller than another sequence $(b_1, \ldots, b_K)$ in **lexicographic order** iff there exists j ($1 \leq j \leq K$) satisfying both "$a_\ell = b_\ell$ for every $1 \leq \ell \leq j - 1$" and "$a_j < b_j$."

Write a program which, given the information of the events and the number K of events JOI-kun will attend, determines whether JOI-kun will be able to attend K events or not. If it is possible for JOI-kun to attend K events, the program should calculate the K events JOI-kun will attend.

Input

Read the following data from the standard input. Given values are all integers.

N K
L_1 R_1
$\vdots$
L_N R_N

Output

If JOI-kun will not be able to attend K events, output one line containing `-1` to the standard output.

If JOI-kun will be able to attend K events, output K lines to the standard output. Let $a_1, \ldots, a_K$ ($1 \leq a_1 < \cdots < a_K \leq N$) be the indices of the events JOI-kun will attend. The j-th line ($1 \leq j \leq K$) of output should contain a_j. Here $(a_1, \ldots, a_K)$ should be the smallest possible sequence in lexicographic order.

Constraints

- $1 \leq N \leq 100\,000$.
- $1 \leq K \leq N$.
- $1 \leq L_i < R_i \leq 1\,000\,000\,000$ $(1 \leq i \leq N)$.

Subtasks

1. (7 points) $L_i \leq L_{i+1}$ $(1 \leq i \leq N-1)$.
2. (1 point) $N \leq 20$.
3. (31 points) $N \leq 3\,000$.
4. (61 points) No additional constraints.

Sample Input and Output

Sample Input 1	Sample Output 1
5 4 1 3 2 5 8 9 6 8 10 15	1 3 4 5

There are 2 ways for JOI-kun to attend exactly 4 events.

- JOI-kun will attend the events $1, 3, 4, 5$.
- JOI-kun will attend the events $2, 3, 4, 5$.

Since the sequence $(1, 3, 4, 5)$ is smaller than the sequence $(2, 3, 4, 5)$ in lexicographic order, output $1, 3, 4, 5$.

Sample Input 2	Sample Output 2
4 3 1 4 3 5 4 9 7 10	-1

Since it is impossible for JOI-kun to attend exactly 3 events, output -1.

Sample Input 3	Sample Output 3
10 6 77412002 93858605 244306432 318243514 280338037 358494212 439397354 492065507 485779890 529132783 571714810 632053254 659767854 709114867 718405631 733610573 786950301 815106357 878719468 899999649	1 2 4 6 7 8

This sample input satisfies the constraints of all Subtasks.

Sample Input 4	Sample Output 4
20 16 250732298 258217736 26470443 34965880 252620676 260043105 692063405 697656580 497457675 504191511 391372149 397942668 858168758 867389085 235756850 241022021 585764751 593366541 207824318 217052204 661682908 671226688 886273261 892279963 770109416 778960597 264372562 270395107 176883483 186662376 509929119 519063796 109491630 118520141 162731982 168101507 662727316 668317158 757072772 765493222	1 2 4 5 6 7 8 9 10 11 12 13 14 15 16 17