**Coding Challenge – Problem Statement**

**Dog Shelter:**

Mr. Singhania has opened a shelter for orphan dogs. To ensure their well-being, he hired N expert care-takers. Each care taker works in shifts to cover certain overlapping intervals of day time.

Consider that the shelter is open from time 0 until time 10^9 (1000000000) each day. Each care taker shift can be described by two integers i.e. start time and end time. For example, if start time t=4 and end time t=7 the care taker covers 3 units of time.

Unfortunately, Mr. Singhania had losses in stock market and has to cut down K care takers to cover losses. You need to write a program to calculate the maximum amount of time that can be covered by remaining care takers (after removing K care takers). At least one care taker should be present at any point in this covered time. Below are the input and output file formats for your program.

**Input file caretakers.in:**

The first line is N and K separated by space, where:

: 1≤K≤N

: N≤100000

: K≤100

Each next N lines are start and end times of caretakers (two integers in the range 0…10^9 (1000000000)). Shifts of different caretakers can overlap.

**Output file caretakers.out:**

Single number giving the maximum amount of time that can still be covered after removing K caretakers.

**SAMPLE INPUT:**

3 2

6 13

12 20

7 19

**SAMPLE OUTPUT:**

12

In this example, the below caretakers should be removed 6…13 and 12…20.