Guards

Exhibition Hall organizing several events in a year. For each event the organizer employs a security company in order to guard the event.

Task

Write a program that computes the following:

    A. The total cost payed for the guards.

    B. The guard who served for the longest time.

    C. The maximum number of the parallel events.

    D. The longest consecutive period if days where there was no event in the Hall.

Input

The first line of the *standard input* contains two integers separated by space. The first number is the number of events ($1 \leq N \leq 100$), the second number is the number of days ($1 \leq M \leq 300$). The events are identified by the numbers $1, \dots, N$ and the days are identified by the numbers $1, \dots, M$. Each of the next N line contain three space separated integers: F L C. F ($1 \leq F \leq M$) is the first, L ($F \leq L \leq M$) the last day when the guard served and C ($10 \leq C \leq 1000$) is the cost per day that is payed for the service.

Output

Your program must write four lines to the *standard output*. The first line must contain the total cost payed for the guards. The second line must contain the identifier of the guard who served for the longest time. If there are multiple solutions then you must give the smallest identifier. The third line must contain the maximum count of the parallel events. The fourth line must contain the longest consecutive period if days where there was no event in the Hall, given by the first and last day of the period. If there was an event in each day then -1 must be written out. If there are multiple solutions then you can give any of them.

Example

sample input	sample output
6 20	2330
1 3 100	3
19 20 40	3
5 9 200	12 18
6 8 200	
7 11 50	
11 11 100	

1	1	1																	
																		2	2
			3	3	3	3	3												
				4	4	4													
				5	5	5	5	5											
						6													

Limits

Time limit: 0.1 sec.

Memory limit: 32 MiB

Grading

A: 2+2+2+2+2+2+2+2+2+2 points

B: 2+2+2+2+2+2+2+2+2+2 points

C: 3+3+3+3+3+3+3+3+3+3 points

D: 3+3+3+3+3+3+3+3+3+3 points

Total: 20+20+30+30=100

Requirement: 40 point

Final Exam Repair

Date: 2017.01.20. 9:00-11:30

Location: PC-4 laboratory, room # 2.315.