

A. Place Your Ad Here

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Ivan Anatolyevich's agency is starting to become famous in the town.

They have already ordered and made n TV commercial videos. Each video is made in a special way: the colors and the soundtrack are adjusted to the time of the day and the viewers' mood. That's why the i -th video can only be shown within the time range of $[l_i, r_i]$ (it is not necessary to use the whole segment but the broadcast time should be within this segment).

Now it's time to choose a TV channel to broadcast the commercial. Overall, there are m TV channels broadcasting in the city, the j -th one has c_j viewers, and is ready to sell time $[a_j, b_j]$ to broadcast the commercial.

Ivan Anatolyevich is facing a hard choice: he has to choose exactly one video i and exactly one TV channel j to broadcast this video and also a time range to broadcast $[x, y]$. At that the time range should be chosen so that it is both within range $[l_i, r_i]$ and within range $[a_j, b_j]$.

Let's define the *efficiency* of the broadcast as value $(y - x) \cdot c_j$ — the total sum of time that all the viewers of the TV channel are going to spend watching the commercial. Help Ivan Anatolyevich choose the broadcast with the maximum *efficiency*!

Input

The first line contains two integers n and m ($1 \leq n, m \leq 2 \cdot 10^5$) — the number of commercial videos and channels, respectively.

Each of the following n lines contains two integers l_i, r_i ($0 \leq l_i \leq r_i \leq 10^9$) — the segment of time when it is possible to show the corresponding video.

Each of the following m lines contains three integers a_j, b_j, c_j ($0 \leq a_j \leq b_j \leq 10^9$, $1 \leq c_j \leq 10^9$), characterizing the TV channel.

Output

In the first line print an integer — the maximum possible *efficiency* of the broadcast. If there is no correct way to get a strictly positive *efficiency*, print a zero.

If the maximum *efficiency* is **strictly** positive, in the second line also print the number of the video i ($1 \leq i \leq n$) and the number of the TV channel j ($1 \leq j \leq m$) in the most effective broadcast.

If there are multiple optimal answers, you can print any of them.

Examples

input

```
2 3
7 9
1 4
2 8 2
0 4 1
8 9 3
```

output

```
4
2 1
```

input

1 1 0 0 1 1 10
output
0

Note

In the first sample test the most optimal solution is to show the second commercial using the first TV channel at time [2, 4]. The efficiency of such solution is equal to $(4 - 2) \cdot 2 = 4$.

In the second sample test Ivan Anatolievich's wish does not meet the options of the TV channel, the segments do not intersect, so the answer is zero.