Master of Linear Algebra

There are m vectors $\bm{v}_i (i = 1, \cdots, m)$ in $\mathbb{R}^n$, where each vector $\bm{v}_i$ has a **value** c_i. Each vector $\bm{v}_i$ consists of only a consecutive interval of standard basis vectors $\bm{e}_{l_i} \dots \bm{e}_{r_i}$. In other words, there exist $1 \le l_i \le r_i \le n$ such that $\bm{v}_i = \bm{e}_{l_i} + \bm{e}_{l_i+1} + \bm{e}_{l_i+2} + \cdots + \bm{e}_{r_i}$, i.e.

$$\bm{v}_i = (0, \cdots, 0, \underbrace{1, \cdots, 1}_{\text{from } l_i \text{ to } r_i}, 0, \cdots, 0).$$

It means that the l_i-th entry to r_i-th entry of $\bm{v}_i$ are 1, and others are 0.

Now your task is to select a linearly independent subset S of vectors $\bm{v}_i$, maximizing the sum of the value (the c_i's) of the selected vectors.

- Linear independence: The vectors $\bm{v}_1, \bm{v}_2, \cdots, \bm{v}_m$ are said to be **linearly independent** if there do not exist scalars $a_1, \cdots, a_m$, which are not all zero, such that

$$\sum_{i=1}^{m} a_i \bm{v}_i = \bm{0}.$$

Input format

The first line contains two integers m, n separated by space, denoting there are m vectors $(1 \le m \le 600000, 1 \le n \le 200000)$.

Then follow m lines, the i-th of which contains 3 integers l_i, r_i, c_i separated by space, denoting the i-th vector is $\bm{v}_i = \sum_{j=l_i}^{r_i} \bm{e}_j$ and has value $c_i (1 \le c_i \le 10^9)$.

It is guaranteed that for any $1 \le i, j \le n$ and $i \ne j$, either $l_i \ne l_j$ or $r_i \ne r_j$ holds.

Output format

Output an integer denoting the maximum sum of values of linearly independent vectors.

Examples

Input 1

```
6 4
1 1 10
2 3 15
4 4 5
3 4 30
2 4 21
2 2 31
```

Output 1

```
86
```

Sample 1 Explanation

The vectors are

$$\bm{v}_1 = (1, 0, 0, 0),$$
$$\bm{v}_2 = (0, 1, 1, 0),$$
$$\bm{v}_3 = (0, 0, 0, 1),$$
$$\bm{v}_4 = (0, 0, 1, 1),$$
$$\bm{v}_5 = (0, 1, 1, 1),$$
$$\bm{v}_6 = (0, 1, 0, 0).$$

Choose four vectors $\{\bm{v}_1, \bm{v}_2, \bm{v}_4, \bm{v}_6\}$. The answer is $10 + 15 + 30 + 31 = 86$.

Input 2

```
18 12
5 7 747599713
3 4 757926887
3 6 382811701
4 6 97461676
4 9 710404753
2 9 487547197
2 6 596396727
2 2 608843003
4 4 845337000
4 7 18671691
11 11 135958130
11 12 452842130
1 12 528936929
1 5 812188014
6 8 535007878
12 12 617497619
9 12 737458124
6 12 583189872
```

Output 2

```
7469683842
```

Sample 2 Explanation

Choose 11 vectors
$\{\bm{v}_1, \bm{v}_2, \bm{v}_5, \bm{v}_7, \bm{v}_8, \bm{v}_9, \bm{v}_{12}, \bm{v}_{14}, \bm{v}_{16}, \bm{v}_{17}, \bm{v}_{18}\}$
.

提交与评分

本题的评分由 OJ 分数（60%）和线下 check （40%）两部分构成。线下 check 会在此次作业结束时间之后进行。

注：线下 check 也带有检查学术诚信的含义，当然这不是唯一的手段。如果被认定为抄袭， OJ 的分数也会作废，并且会有惩罚。**特别强调，抄袭来自 generative AI 的代码和抄袭网上的代码是同等处理的，我们建议您在写作业时关闭一切generative AI 工具。**