

Billboard painting

[English](#)

[Vietnamese](#)

A group of K painters has to paint a rectangular billboard of size $1 \times N$. The billboard is divided into N cells of size 1×1 . The cells are numbered from 1 to N in left to right order.

The i -th painter ($1 \leq i \leq K$) is currently standing in front of the cell S_i . He either can paint no cells at all or can paint a consecutive number of cells that must contain the cell S_i . Moreover, he can only paint at most L_i cells, and for each painted cell, he will receive a payment of P_i dollars. Each cell can be painted by at most one person.

Your task is to find a way for the painters to receive the largest amount of payment.

Input

- The first line of the input contains two positive integers N, K ($N \leq 16000$; $K \leq 100$).
- The i -th line of the next K lines contains three positive integers L_i, P_i, S_i ($i = 1, 2, \dots, K$) separated by spaces ($1 \leq P_i \leq 10000$, $1 \leq L_i, S_i \leq N$). The numbers S_1, S_2, \dots, S_K are pairwise distinct.

Output

A single line contains the largest payment that the painters can receive.

Example

Input

```
8 4
3 2 2
3 2 3
3 3 5
1 1 7
```

Output

```
17
```

The first painter will paint the first two cells, the second painter will paint the next two cells, the third one will paint the remaining cells and the last won't have to paint any cells.