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Array Manipulation ★

Problem

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Editorial

Starting with a 1-indexed array of zeros and a list of operations, for each operation add a value to each the array element between two given indices, inclusive. Once all operations have been performed, return the maximum value in the array.

Example $n = 10$ $queries = [[1, 5, 3], [4, 8, 7], [6, 9, 1]]$

Queries are interpreted as follows:

```
a b k
1 5 3
4 8 7
6 9 1
```

Add the values of k between the indices a and b inclusive:

```
index->  1 2 3  4  5 6 7 8 9 10
         [0,0,0, 0, 0,0,0,0,0, 0]
         [3,3,3, 3, 3,0,0,0,0, 0]
         [3,3,3,10,10,7,7,7,0, 0]
         [3,3,3,10,10,8,8,8,1, 0]
```

The largest value is **10** after all operations are performed.**Function Description**Complete the function `arrayManipulation` in the editor below.`arrayManipulation` has the following parameters:

- `int n` - the number of elements in the array
- `int queries[q][3]` - a two dimensional array of queries where each `queries[i]` contains three integers, a , b , and k .

Returns

- `int` - the maximum value in the resultant array

Input FormatThe first line contains two space-separated integers n and m , the size of the array and the number of operations.Each of the next m lines contains three space-separated integers a , b and k , the left index, right index and summand.**Constraints**

- $3 \leq n \leq 10^7$
- $1 \leq m \leq 2 * 10^5$
- $1 \leq a \leq b \leq n$
- $0 \leq k \leq 10^9$

Sample Input

```
5 3
1 2 100
2 5 100
3 4 100
```

Sample Output

200

Explanation

After the first update the list is 100 100 0 0 0.

After the second update list is 100 200 100 100 100.

After the third update list is 100 200 200 200 100.

The maximum value is **200**.

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Language

Python 3



```
9 #
10 # Complete the 'arrayManipulation' function below.
11 #
12 # The function is expected to return a LONG_INTEGER.
13 # The function accepts following parameters:
14 # 1. INTEGER n
15 # 2. 2D_INTEGER_ARRAY queries
16 #
17
18 def arrayManipulation(n, queries):
19     # Write your code here
20
21 if __name__ == '__main__':
22     fptr = open(os.environ['OUTPUT_PATH'], 'w')
23
24     first_multiple_input = input().rstrip().split()
25
26     n = int(first_multiple_input[0])
27
28     m = int(first_multiple_input[1])
29
30     queries = []
31
32     for _ in range(m):
33         queries.append(list(map(int, input().rstrip().split())))
34
35     result = arrayManipulation(n, queries)
36
37     fptr.write(str(result) + '\n')
```

Line: 40 Col: 1

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