

Lab 13 - MST

April 26, 2018

Question

You are given a weighted undirected graph of N vertices and M edges. All the edge weights are distinct. You need the weight of the minimum spanning tree, so you perform the *Kruskal's* algorithm. We know that we make the minimum spanning tree by first sorting the edges in the increasing order of their weight, and adding an edge one by one iff it doesn't form a cycle.

Now you are given Q queries. In each query you are given an integer K , $K \in [1, M]$. You have to output when we process first K edges as per the *Kruskal's* algorithm, what is the number of connected components.

Constraints

- $1 \leq N \leq 1e5$
- $1 \leq M \leq \min(2e5, (N * (N - 1))/2)$
- $1 \leq w \leq 1e5$
- $1 \leq Q \leq 1e5$
- $1 \leq K \leq M$

Input Format

- The first line contains 2 integers N, M number of vertices and edges respectively.
- Each of the next M lines contains 3 integers u, v, w , denoting an edge of weight w between u, v .
- Next Line of input gives Q , which is number of Queries.
- Each of the next M lines contains one integer K and you have to output answer corresponding to K .

Sample Test Case 1

Input:

```
5 6
1 2 1
2 3 2
3 4 3
2 5 4
3 5 6
1 5 10
3
5
4
1
```

Output:

```
1
1
4
```

Sample Test Case 2

Input:

5 6
1 2 5
3 4 10
2 3 6
1 3 7
2 5 8
1 5 9
4
1
6
4
2

Output:

4
1
2
3