CSE431/531 (Fall 2022) Programming Assignment 2

Due date: Monday, 12/11/2022

You need to implement either the Kruskal's algorithm or the Prim's algorithm for the minimum spanning tree problem. If you are using Prim's algorithm, an $O(n^2)$-time algorithm is sufficient to pass all test cases.

- **Input format**: You need to read the input from the console. In the first line of the input, we have two positive integers n and m. n is the number of vertices in the graph and m is the number of edges in the graph. The vertices are indexed from 1 to n. You can assume that $1 \leq n \leq 1000$ and $1 \leq m \leq 100000$. In the next m lines, each line contains 3 integers: u, v and w, with $1 \leq u < v \leq n$ and $1 \leq w \leq 10^6$. This indicates that there is an edge (u, v) of weight w. You can also assume that the graph is connected and there are no parallel edges.
- **Output format**: You need to output to the console. For simplicity, you only need to output one line, which contains the total weight of the minimum spanning tree.

Example Input:	**Example Output**:
9 14 1 2 5 1 8 12 2 3 8 2 8 11 3 4 13 3 6 4 3 9 2 4 5 9 4 6 14 5 6 10 6 7 3 7 8 1 7 9 6 8 9 7	42