Military Institute of Science and Technology
B.Sc. in Computer Science and Engineering
Evaluation (Week-9), Spring 2022
Topic: Depth First Search

Subject: CSE-204, Data Structures and Algorithms-I Sessional

Nowadays the one-way traffic is introduced all over the world in order to improve driving safety and reduce traffic jams. The government of the Dhaka Division decided to keep up with new trends. Formerly all **n** cities of Dhaka were connected by **n** two-way roads in the ring, i.e. each city was connected directly to exactly two other cities, and from each city, it was possible to get to any other city. The government of Dhaka introduced one-way traffic on all **n** roads, but it soon became clear that it was impossible to get from some of the cities to some others. Now for each road is known in which direction the traffic is directed at it, and the cost of redirecting the traffic. What is the smallest amount of money the government should spend on the redirecting of roads so that from every city you can get to any other?

Input:

Input starts with an integer **T (≤ 200)**, denoting the number of test cases.

Each case starts with a blank line and an integer **n (3 ≤ n ≤ 100)** denoting the number of cities (and roads). Next **n** lines contain description of roads. Each road is described by three integers a_i, b_i, c_i **(1 ≤ a_i, b_i ≤ n, a_i ≠ b_i, 1 ≤ c_i ≤ 100)** – road is directed from city a_i to city b_i, redirecting the traffic costs c_i.

Output

For each case of input you have to print the case number and the smallest amount of money the government should spend on the redirecting of roads so that from every city you can get to any other.

Sample Input Output

Input	Output
4	Case 1: 1
	Case 2: 2
3	Case 3: 39
1 3 1	Case 4: 0
1 2 1	
3 2 1	
3	
1 3 1	
1 2 5	
3 2 1	
6	
1 5 4	
5 3 8	
2 4 15	
1 6 16	
2 3 23	
4 6 42	
4	
1 2 9	
2 3 8	

| 3 4 7
 4 1 5 | |