# Algorithms Advanced with C#: Exam

Please submit your solutions (source code) to all the below-described problems in [Judge](https://judge.softuni.org/Contests/4059).

## Eco-Friendly Highway Construction

Suppose you are the manager of a construction company that has been hired to build a new **highway network connecting several towns** in a rural area.

However, you have been informed that some of the towns are located in areas with difficult terrain or environmental restrictions, making it **more expensive** to build highways in those areas.

Your goal is to **connect all the towns minimizing the total cost** of building the highways.

### Input

* + The first line will contain a positive integer **n** (1 <= **n** <= 10^4), representing the number of connections.
  + On the following **n** lines you will receive details about each connection in the following format: **"{town1} {town2} {cost} {environmentCost}"**.
    - **cost** (1 <= **cost** <= 10^9), representing the cost of building a highway between the towns **town1** and **town2**.
    - There will also be **an optional integer argument** - **environmentCost** (0 <= **environmentCost** <= 10^9) for each highway, representing the additional environmental restriction cost of building the highway.

### Output

* + The output should consist of a single integer, representing the minimum cost of building highways to connect all towns, taking into account the environmental restriction cost and it should be printed in the following format: **"Total cost of building highways: {totalCost}"**.

### Constraints

* + It is guaranteed that there is at least one possible way to connect all the towns using highways.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  A B 2 1  B C 3  C D 4 1 | Total cost of building highways: 11 |
| 5  A B 2 3  B C 3  C D 4  A C 2  B D 1 | Total cost of building highways: 6 |