



3180 - Explore Tibet

Europe - Central - 2004/2005

After having to reinstall your computer 42 times on the same day, you decided to take a short break - you will spend the next 5 years (or more) in Tibet. The population of China is very unevenly distributed: in the eastern coastal areas the population density can be above 400 people per square kilometer, while in the western plateaus there are less than 10 people per square kilometer. But no part of China is more sparsely populated than Tibet, where 2.3 million people share 1.2 million square kilometers. You hope that in the small villages and monasteries of Tibet, no one will ask you to fix their computer.

But which village should you choose? Looking at the map of Tibet, you see a large number of interesting places. You want to go to a place where you can visit many monasteries. Each village has a number of monasteries. Your plan is that you go from village to village to visit as many monasteries as possible. However, you can only travel 30 kilometers a day, and it is not safe to spend the night in the wilderness. Thus, depending on your initial position, you can visit only some of the villages. Therefore, you have to choose your initial position (the village where you start your holiday) carefully, if you want to maximize the number of monasteries that can be visited.

A final note: Tibet enjoys an average of 3,000 hours of sunshine a year, so don't forget your sun glasses and suntan cream!

Input

The input contains several blocks of test cases. Each case begins with a line containing an integer $1 \leq n \leq 1000$, the number of villages. The next n lines contain three integers each: the two coordinates of the village (in kilometers), and the number of monasteries in the village. The coordinates are between 0 and 20000, the number of monasteries in a village is at most 1000. The input is terminated by a block with 0 villages.

Output

For each test case you have to output two integers on a line (separated by spaces). The first integer identifies the village where you want to go (this number is between 1 and n), and the second integer is the number of monasteries that can be visited starting from this location. If there is more than one village that minimizes the number of reachable monasteries, then choose the one that has the smallest index.

Sample Input

```
6
100 100 8
0 0 10
0 10 3
10 30 4
1000 1000 4
100 128 3
0
```

Sample Output

2 17

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Special Thanks: Chen Danqi, Feng Xiao