

F. Choose a Square

time limit per test: 6 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Petya recently found a game "Choose a Square". In this game, there are n points numbered from 1 to n on an infinite field. The i -th point has coordinates (x_i, y_i) and cost c_i .

You have to choose a square such that its sides are parallel to coordinate axes, the lower left and upper right corners belong to the line $y = x$, and all corners have integer coordinates.

The score you get is the sum of costs of the points covered by the selected square minus the length of the side of the square. Note that the length of the side can be zero.

Petya asks you to calculate the maximum possible score in the game that can be achieved by placing exactly one square.

Input

The first line of the input contains one integer n ($1 \leq n \leq 5 \cdot 10^5$) — the number of points on the field.

Each of the following n lines contains three integers x_i, y_i, c_i ($0 \leq x_i, y_i \leq 10^9, -10^6 \leq c_i \leq 10^6$) — coordinates of the i -th point and its cost, respectively.

Output

In the first line print the maximum score Petya can achieve.

In the second line print four integers x_1, y_1, x_2, y_2 ($0 \leq x_1, y_1, x_2, y_2 \leq 2 \cdot 10^9, x_1 = y_1, x_2 = y_2, x_1 \leq x_2$) separated by spaces — the coordinates of the lower left and upper right corners of the square which Petya has to select in order to achieve the maximum score.

Examples

input	Copy
6 0 0 2 1 0 -5 1 1 3 2 3 4 1 4 -4 3 1 -1	
output	Copy
4 1 1 3 3	

input	Copy
5 3 3 0 3 3 -3 0 2 -1 3 1 3 0 0 -2	
output	Copy
0 1 1 1 1	

Note

The field corresponding to the first example:

Educational Codeforces Round 73 (Rated for Div. 2)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0

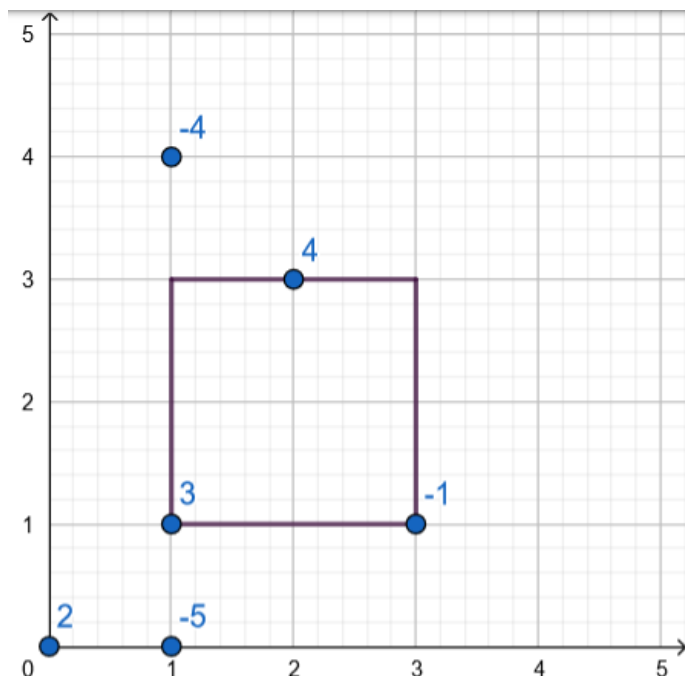
Choose file: 未选择任何文件

Submit

→ Problem tags

data structures sortings

No tag edit access



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