Lazar got lost somewhere in the Cartesian plane, containing n straight lines. The only way to escape is by moving through a special point – a beautiful point. A point is called beautiful if it is an intersection point of at least $\left⌊\frac{n}{4}\right⌋$ lines and it has integer coordinates. Your task is to find a beautiful point and save Lazar.

**Input**

The first line of the file **intersection.in** contains an integer n – the number of straight lines. The next n lines comprise of 2 pairs of integers – the coordinates of the points, which denote the respective line: $(x\_{1},y\_{1})$ and ($x\_{2}$, $y\_{2}$).

**Output**

On the first line of the file **intersection.out** print 2 integers – the coordinates of the beautiful point. On the next line print m – the number of lines which define the beautiful point. The last line should contain m numbers – the indexes of the lines that you have chosen.

**Constraints**

**It is guaranteed that a beautiful point exists.**

$$8\leq n\leq 10^{5}$$

$$-10^{9}\leq x\_{1}, y\_{1}, x\_{2}, y\_{2}\leq 10^{9}$$

$$\left⌊\frac{n}{4}\right⌋\leq m\leq n$$

**Time limit: 0.3 sec.**

**Memory limit: 256 MB**

**Sample test**

|  |  |
| --- | --- |
| **Input (intersection.in)** | **Output (intersection.out)** |
| 124 7 2 78 9 3 38 2 5 26 4 0 58 5 1 28 12 6 61 8 3 35 3 8 014 15 8 77 4 4 69 8 5 63 8 9 4 | 5 336 8 9 |