

# Components in a graph

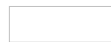
There are  $2N$  values to represent nodes in a graph. They are divided into two sets  $G$  and  $B$ . Each set has exactly  $N$  values. Set  $G$  is represented by  $\{G_1, G_2, \dots, G_N\}$ .  $G$  can contain any value between 1 to  $N$  (inclusive). Set  $B$  is represented by  $\{B_1, B_2, \dots, B_N\}$ .  $B$  can contain any value between  $N + 1$  to  $2N$  (inclusive). Same value can be chosen any number of times.

Here  $(G_1, B_1), (G_2, B_2), \dots, (G_N, B_N)$  represents the edges of the graph.

Your task is to print the number of vertices in the smallest and the largest connected components of the graph.

**Note** Single nodes should not be considered in the answer.

For more clarity look at the following figure.



For the above graph smallest connected component is 7 and largest connected component is 17.

## Input Format

First line contains an integer  $N$ .

Each of the next  $N$  lines contain two space-separated integers,  $i^{th}$  line contains  $G_i$  and  $B_i$ .

## Constraints

- $1 \leq N \leq 15000$
- $1 \leq G_i \leq N$
- $N + 1 \leq B_i \leq 2N$

## Output Format

Print two space separated integers, the number of vertices in the smallest and the largest components.

## Sample Input

```
5
1 6
2 7
3 8
4 9
2 6
```

## Sample Output

```
2 4
```

## Explanation

The number of vertices in the smallest connected component in the graph is 2 i.e. either  $(3, 8)$  or  $(4, 9)$ .  
The number of vertices in the largest connected component in the graph is 4 i.e.  $1 - 2 - 6 - 7$ .