

# Closest Point Pair

You are given  $N$  points on a plane and your task is to find a pair of points with the smallest euclidean distance between them.

All points will be unique and there is only one pair with the smallest distance.

## Input

First line of input will contain  $N$  ( $2 \leq N \leq 50000$ ) and then  $N$  lines follow each line contains two integers giving the  $X$  and  $Y$  coordinate of the point. Absolute value of  $X, Y$  will be atmost  $10^6$ .

## Output

Output 3 numbers  $a$   $b$   $c$ , where  $a, b$  ( $a < b$ ) are the indexes (0 based) of the point pair in the input and  $c$  is the distance between them. Round  $c$  to 6 decimal digits.

See samples for more clarification.

### Input:

```
5
0 0
0 1
100 45
2 3
9 9
```

### Output:

```
0 1 1.000000
```

### Input:

```
5
0 0
-4 1
-7 -2
4 5
1 1
```

### Output:

```
0 4 1.414214
```