

Mindtree Ltd Full-stack Developer ...

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☆ Closest Random Points



In many real world applications the problem of finding pair of closest points arises. In the real world, data is usually distributed randomly. Given n points on a plane that are randomly generated with uniform distribution, find the squared shortest distance between pairs of these points.



For example, there are 3 points with x coordinates x = [0, 1, 2] and y = [0, 1, 4]. The points have xy coordinates (0, 0), (1, 1) and (2, 4). The closest points are (0, 0) and (1, 1), and their squared shortest distance is $(1-0)^2 + (1-0)^2 = 2$.

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Function Description

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Complete the function closestSquaredDistance in the editor below. The function should return a long integer denoting the squared shortest distance between the pairs of points.

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closestSquaredDistance has the following parameter(s):

x: An integer array, of size n, where x[i] denotes the x coordinate of the ith point.

y: An integer array, of size n, where y[i] denotes the y coordinate of the i^{th} point.

Constraints

- 2 < n
- either $n \le 1000$ or $n = 10^5$
- values of x[i] and y[i] are randomly generated with uniform distribution from the range [0, 10^9 -1]

Input Format Format for Custom Testing

Sample Case 0

Sample Input

3

10

15

3 0

10

Sample Output

125

Explanation

There are 3 points in the input: (0,0), (10,10), (15,20). The closest squared Euclidean distance among pairs of these points is between (10,10) and (15,20) which is $(15-10)^2 + (20-10)^2 = 125$

Sample Case 1

Sample Input

77

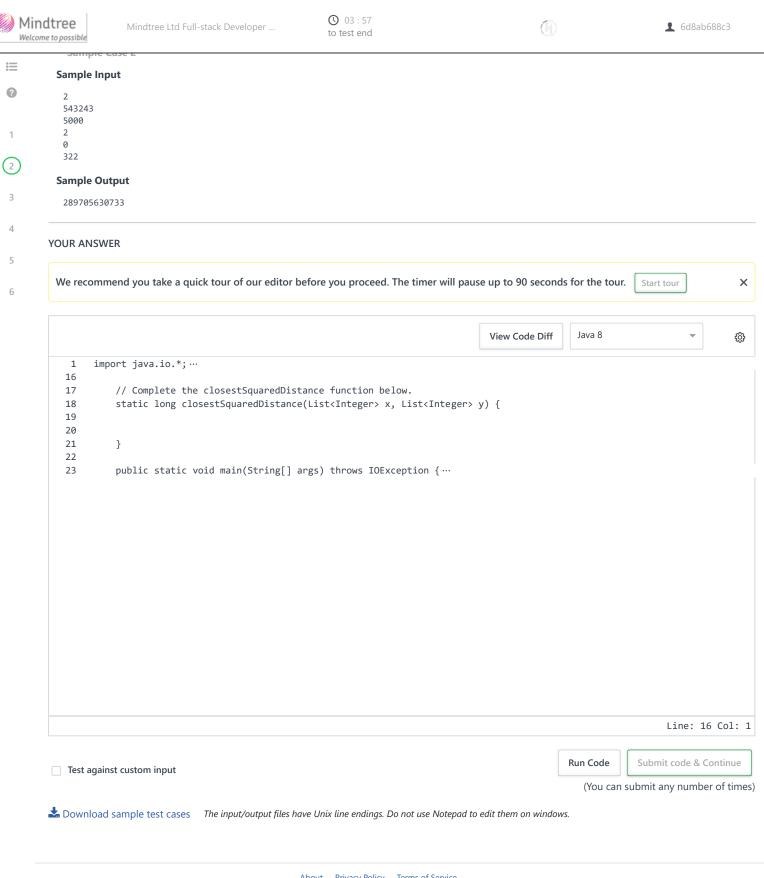
1000

992 1000000

0

1000 500

Sample Output



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