



Practice

Compete

Jobs

Rank

Leaderboard



Buritomath

Dashboard > Functional Programming > Introduction > Compute the Perimeter of a Polygon

Badge Progress [\(Details\)](#)

Points: 75.00 Rank: 9498

Compute the Perimeter of a Polygon

by PRASHANTB1984

Problem

Submissions

Leaderboard

Discussions

You are given the cartesian coordinates of a set of points in a **2D** plane. When traversed sequentially, these points form a Polygon, **P**, which is not self-intersecting in nature. Can you compute the perimeter of polygon **P**?

Input Format

The first line contains an integer, **N**, denoting the number of points.

The **N** subsequent lines each contain **2** space-separated integers denoting the respective **x** and **y** coordinates of a point.

Constraints

- No **2** points are *coincident*, and polygon **P** is obtained by traversing the points in a clockwise direction.
- $3 \leq N \leq 1000$
- $0 \leq x, y \leq 1000$

Output Format

For each test case, print the perimeter of **P** (correct to a scale of one decimal place).

Note: Do not add any leading/trailing spaces or units.

Sample Input

```
4
0 0
0 1
1 1
1 0
```

Sample Output

```
4
```

Explanation

The given polygon is a square, and each of its sides are **1** unit in length. $perimeter(P) = 1 + 1 + 1 + 1 = 4$, so we print **4** on a new line.

f t in

Submissions: [1162](#)

Max Score: 15

Difficulty: Easy

Rate This Challenge:

☆☆☆☆

[More](#)

If you cannot find your favorite language here, please check out the [algorithm domain](#). We support over 40 popular languages.

Current Buffer (saved locally, editable)

Racket



```
1 #lang racket
2 ; Enter your code here. Read input from STDIN. Print output to STDOUT
3
4 (define (polygon-perimeter-iter points n sum)
5   (cond ((= n (length points)) sum)
6         (else (polygon-perimeter-iter
7                 points
8                 (+ n 1)
9                 (+ sum (sqrt
10                        (+
11                          (- (car (list-ref points (remainder (+ n 1) (length points))))
12                            (car (list-ref points n))))
13                          (- (cdr (list-ref points (remainder (+ n 1) (length points))))
14                            (cdr (list-ref points n))))))))))
15
16 (define (polygon-perimeter points) (polygon-perimeter-iter points 0 0))
17
18 (define (read-points n)
19   (cond ((= n 0) '())
20         (else (cons (cons (read) (read)) (read-points (- n 1))))))
21
22 (displayln (polygon-perimeter (read-points (read))))
```

Line: 1 Col: 1

 Upload Code as File Test against custom input

Run Code

Submit Code

Copyright © 2017 HackerRank. All Rights Reserved

Join us on IRC at [#hackerrank](#) on freenode for hugs or bugs.[Contest Calendar](#) | [Interview Prep](#) | [Blog](#) | [Scoring](#) | [Environment](#) | [FAQ](#) | [About Us](#) | [Support](#) | [Careers](#) | [Terms Of Service](#) | [Privacy Policy](#) | [Request a Feature](#)