Spiral Length

*ch-spiral-length*

# Introduction

This document describes a code challenge that you must complete as candidate for the job that you have applied.

The document is separated in 3 sections:

* **Introduction**, describes the document and the challenge
* **Description**, describes the code challenge in as much detail as possible
* **Evaluation Criteria**, describes the criteria that will be checked on your attempt

## About the Challenge

The challenge is categorised and has some specific properties that you can see here:

|  |  |
| --- | --- |
| **Name** | **Value** |
| **Challenge Name** | Spiral Length |
| **Code Name** | ch-spiral-length |
| **Type** | Algorithmic |
| **Language(s)** | PHP |

# Description

Create a simple function that will calculate the length of a spiral starting from the center and going outwards until it reaches a given point (coordinates).

Assuming that you are in the center of the coordinates (0, 0), you expand the spiral by moving up (y = y + 1) and taking clockwise turns in order to reach a given point.

The spiral can only move one step vertically or horizontally, it cannot go diagonally.

### Input

The function should accept two arguments, x and y, the coordinates of the spiral has to reach.

### Output

The function should return the length of the spiral in blocks.

### Elements

There are no specific elements for this project.

## Examples / Use Cases

Here are some examples which display how the function should count the length of the spiral:

**Legend**

* \*: the center of the spiral. We don’t count it as block
* #: a step taken in the spiral
* -: coordinates that the spiral hasn’t reached yet

**Example 1**

Input: (1, 1)

Spiral:

-##

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Output: 2

**Example 2**

Input: (2, -2)

Spiral:

-####

-####

-#\*##

-####

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Output: 16

### Tests

To perform tests on your code, we are going to check your function against a list of coordinates to see whether it calculates the correct length.

There are no extreme cases in this specific problem.

## Assumptions

* x and y, the given coordinates, are integers within the range [-1000000.. 1000100]
* you don’t have to check for the validity of the inputs
* **You should not use php-ready functions to complete the challenge**

# Evaluation Criteria

This code challenge will be evaluated based on the following criteria:

* *Code compiles or doesn’t generate interpretation errors*
* *Code doesn’t generate any errors, warnings or any other similar problems*
* *Code runs and provides a result each time (doesn’t fall into an infinite loop)*
* *Code examines best and worst case scenarios*