

Area of a Circle in the Coordinate Plane

The goal of this project is to compute and display the area of a circle, in the coordinate plane, given the coordinates of a point on the perimeter of the circle and the coordinates of the center of the circle.

The plan:

1. import the math module
2. The area of this specific circle is the distance from the center to a point times pi
3. The radius is the distance from the center to a point on the circle
4. The area of a circle is equal to the value of pi times the radius squared
5. `main()` will:
 - a. ask the user for the necessary coordinates
 - b. compute the area of the specific circle
 - c. display the specific radius and area of the circle

Specifically:

- The first step is to find the radius of the circle, which is the distance between the two points. The distance between two points, given by the coordinates (x_1, y_1) and (x_2, y_2) . By the Pythagorean theorem, the distance is:

$$distance = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

The first step is to consider what a `distance` function should look like in Python. In other words, what are the inputs (parameters) and what is the output (return value)? In this case, the two points are the inputs, which we can represent using four parameters. The return value is the distance, which is a floating-point value.

TEST THIS FUNCTION TO MAKE SURE IT WORKS!!

- Second, write a function `circle_area` that takes `radius` as a parameter and returns the area of the circle with that radius.

TEST THIS FUNCTION TO MAKE SURE IT WORKS!!

- Next, write a function that takes two points, the center of the circle and a point on the perimeter, and computes the area of the circle. Assume that the center point is stored in the variables `x_center` and `y_center`, and the perimeter point is in `x_perim` and `y_perim`.

TEST THIS FUNCTION TO MAKE SURE IT WORKS!!

- Finally write the main function to get the user input and display the output.

Sample Output:

```
Please enter the x-coord of the center of the circle: 5
Please enter the y-coord of the center of the circle: -10
Please enter the x-coord of a point on the circle: 6
Please enter the y-coord of a point on the circle: 12
```

```
With a center at (5.0, -10.0) and point at (6.0, 12.0)
The radius of this circle is 22.02 units.
The area of this circle is 1523.67 units.
```