Mcs260, Spring 2011, Lowman, Week4 Lab

Purpose of lab is mostly to practice using functions.

- Create a directory for your lab project. Inside this directory:

    - create a file named README (not readme, not README.txt) that contains information about you, the lab, course, TA etc. In addition include any comments (less is more) that would be useful to anyone who wants to use your program.

    - in addition to the file named README, make a directory to hold the code for the python program that is described below.

    - when finished you will tar and zip the directory for your lab and send your zipped tarball to your TA.

- Your TA will give general instructions for writing and submitting your lab project. You are to write a python program that will solve the problem described below.

- The following formula gives the distance between two points (x_1, y_1) and (x_2, y_2) in the Cartesian plane.

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

Given the center and a point on the circle, you can use this formula to find a radius of the circle. Write a complete python program that prompts the user to enter the center and a point on the circle. The program should then output the circle's radius, diameter, circumference and area. Your program must have at least the following functions:

1. `main:` contains the main part of the program that calls other functions to perform tasks.

2. `distance:` This function takes as its parameters four numbers that represent two points in the plane and returns the distance between them.

3. `radius:` This function takes as its parameters four numbers that represent the center and a point on the circle, calls the function `distance` to find the radius of the circle, and return the circle's radius.

4. `circumference:` This function takes as its parameter a number the represents the radius of the circle and returns the circle's circumference.

5. `area:` This function takes as its parameter a number that represents the radius of the circle and returns the circle's area.