CS 410P

LAB 4L

Purpose

The purpose of this assignment is to give you practice with conditions using if else decision structures.

Problem

Write a program to obtain a pair of X and Y coordinates from the user and find out where it exists in the Cartesian plane coordinate system. You need to print a message indicating the point exists either on an axis or in the appropriate quadrant or origin.

You will have to start writing your decision structures (if statements with either else or elif statements) to check the values of X and Y and print an appropriate message. You can choose to write any type of if statement (one-way, multi-way, nested-if) to get your program to work correctly (Examples of multi-way and nested-if are shown below).

Note: Type conversions can be done using int(), float(), str() functions. An alternate way to covert one type of value to another is to use the "eval" function. For example if you want to accept numeric input from the user which could be either integer or floating point values, eval() can be used as a generic way of converting it to a numeric value.

Sample Output

(-1.0, -2.5) is in Quadrant 3
(0, 4.8) is on the Y-axis
(0, 0) is the Origin

```python
"""
Example using both Multi-way If and Nested If to come up
with a letter grade based on the total points scored
"""
score = eval(input("Enter points scored:"))

if score >= 90:
    letter = 'A'
elif score >= 80:
    letter = 'B'
elif score >= 70:
    letter = 'C'
elif score >= 60:
    letter = 'D'
else:
    letter = 'F'
print("Using Multi-Way If -- Score:", score, "Grade:", letter)

if score >= 90:
    letter = 'A'
else:    # grade must be B, C, D or F
    if score >= 80:
        letter = 'B'
    else:  # grade must be C, D or F
        if score >= 70:
            letter = 'C'
        else:    # grade must D or F
            if score >= 60:
                letter = 'D'
            else:
                letter = 'F'
print("Using Nested If -- Score:", score, "Grade:", letter)
```

Grade Key

A	Name, comments	5
B	Proper inputs and prompts	10
C	Location of (X, Y) computed correctly (-8 per incorrect answer)	56
D	Works correctly for various input values (both integer and floating point inputs)	14
E	Output formatting reasonable	15