Python – Trapezoid

Purpose

This lab was designed to teach you how to read data from a user, process that data via a function call and output the result.

Description

Write a method called **calc_area** that that takes three arguments as described below and calculates the area of a trapezoid. The function returns the result. The formula for the area is:

area = ½ (base1 + base2) h

Write a second method **ask_user_for_data** that prompts the user for the dimensions of a trapezoid. The function should invoke calc_area method with the provided dimension and return the result.

Use proper structure in your program as outlined below.

```
def calc_area(h=1, base_1=1, base_2=1):
        """ Calculates the area of a trapezoid

        Args:
           h (float): Height of a trapezoid
           base_1 (float): The bottom base
           base_2 (float): The top base

        Returns:
          float: The calculated area of the provided dimensions
        """
        # add your code

def ask_user_for_data():
        # add documentation
        # add your code

def main():

        # basic test cases

        # print("Area is:", calc_area(10.3, 20.9, 3.056))
        # print("Area is:", calc_area(4, 6, 3))
        # print("Area is:", calc_area(1.99, 2.7, 3.4))
        # print("Area is:", calc_area())

        # call ask_user_for data(), invoke calc_area() and print the results
        # repeat

if __name__ == "__main__":
   main()
```

Program Shell

Create a file called trapezoid.py

Sample Execution

```
Area is: 123.37
Area is: 18.00
Area is: 6.07
Area is: 1.00

Enter the height of the trapezoid: 5
Enter the length of the bottom base: 10
Enter the length of the top base: 7
The area is: 42.50

Enter the height of the trapezoid: 9
Enter the length of the bottom base: 10
Enter the length of the top base: 8
The area is: 81.00
```