Python Randy's Rectangle Calculator Functions

Time required: 60 minutes

- Comment each line of code as shown in the tutorials and other code examples.

- Follow all directions carefully and accurately.

- Think of the directions as minimum requirements.

Pseudocode

1. Write pseudocode for the exercise

2. Save it in a document

3. Submit with the assignment

Requirements

The program will ask the user to enter the width and length of a rectangle, then display the rectangle's area and perimeter.

1. Create a Python program named **rectangle_calculator_functions.py**

2. Create each of the following functions.

3. Call each function from the **main()** function.

program_title() – Print a nice program title.

get_length() - This method will ask the user to enter the rectangle's length then return that value as a double.

get_width() - This function will ask the user to enter the rectangle's width then return that value as a double.

get_area() - This method should accept the rectangle's length and width as arguments and return the rectangle's area. The area is calculated by multiplying the length by the width.
Area of a rectangle: **Area = length * width**

get_perimeter() - This method should accept the rectangle's length and width as arguments and return the rectangle's perimeter. The perimeter is calculated by adding the length and the width then multiplying by 2.
Perimeter of a rectangle: **Perimeter = 2 (length + width)**

display_results() - This function should accept the rectangle's length, width, area, and perimeter as arguments and display them in an appropriate message on the screen.

TODO Outline of Program

You can use the following TODO outline to get started with your program.

```python
"""
    Name: rectangle_calculator_functions.py
    Author:
    Created:
    Purpose: Python program with functions to calculate
    the area and perimeter of a rectangle
"""


# TODO: Create main method to call all functions


# TODO: Function to print nice program title


# TODO: Function to get and return user input as float for length


# TODO: Function to get and return user input as float for width


# TODO: Function to calculate and return area of rectangle
# Math formula: a = lw
# Pass in length and width as arguments


# TODO: Function calculate and return perimeter of rectangle
# Math formula: p = 2(l+w)
# Pass in length and width as arguments


# TODO: Display results
# Pass in length, width, area, perimeter as arguments
# Use f-strings to format float to 2 decimal places
# use comma , as a 1,000's separator


# TODO: Call main method
```

F-strings formatting example:

```python
print(f" Perimeter: {perimeter:,.2f}")
```

```
: indicates formatting codes are coming up
, comma formats 1,000 separators
.2f formats a float to 2 decimal places
```

Example run:

```
-------------------------------------------------
|      Randy's Rectangle Calculator in Python     |
| Calculate the area and perimeter of a Rectangle |
-------------------------------------------------
Enter length: 201.56
Enter width: 250.123
Width:     250.123
Length:    201.56
Area:      50,414.79
Perimeter: 903.37
```

Assignment Submission

1. Attach the pseudocode.

2. Attach the program files.

3. Attach screenshots showing the successful operation of the program.

4. Submit in Blackboard.