Project 4

Write a Rectangle class in Python language, allowing you to build a rectangle wi4th length and width attributes.Create a Perimeter() method to calculate the perimeter of the rectangle and a Area() method to calculate the area of the rectangle. Create a method display() that displays the length, width, perimeter and area of an object created using an instantiation on rectangle class. Create a Parallelepiped child class inheriting from the Rectangle class and with a height attribute and another Volume() method to calculate the volume of the Parallelepiped.

Step 1: Create a class file and create the Rectangle class. Initialize the Rectangle class by passing the following parameters: self, length, width. The length and width will be from the input of the user which we will be declared in the main function of the main file.

Step 2: Create a method called perimeter. This method will t` ke the classes' length and width and add them together. Then, it will multiply this result by 2 and store it in a variable called perim. The method will return the perim variable.

Step 3: Create a method called area. This method will take the classes' length and width and multiply them together. Then, it will store it in a variable called calc_area. The method will return the calc_area variable.

Step 4: Create a method called display This method will return an f string that says “the length is (length from class), the width is (width from class), the perimeter is (calls the perimeter method), and the area is (calls the area method).

Step 5: Create a Parallelepiped class. Initialize the Parallelepiped by passing in the Rectangle class. This will make the Parallelepiped class inherit the methods from the Rectangle class. Initialize the Parallelepiped class by passing the following parameters: self, length, width. Make sure to attach the parent class by calling super and initiating it with the length and width variables. The length and width will be from the input of the user which we will be declared in the main function of the main file.

Step 7: Create a method called volume. This method will receive the user’s input of height, length, and width. It will then take the height, width, and length and multiply them all together. The method will return the result of this multiplication as the volume.

Step 8: Create a main file. Within this file, create a function named main. In this function. Ask the user for two inputs, a length and width. From the user’s input, create two variables; user_length, user_width. Then, create a variable named shape_1 which will be initialized by calling the rectangle method and passing in the user_length, and user_width. Then, print the display method from the Rectangle class. Additionally, declare a variable named shape_2. This will be initialized by calling the Parallelepiped class and passing in the user_length, and

user_width. It will also ask the user to input a height and pass it as a parameter to the Parallelepiped class. Then, print the volume method from the Rectangle class.

Step 11: Call the main func to initialize the program. Make sure that the Rectangle and Parallelepiped classes are imported from the file classes.