

Lab 3 Problem (Classes)

Step 1: Define a class called `Room` that represents `Room` objects. A `Room` object has a name. It also has a length and a breadth, which are the dimensions of the room. Below is the starter code for the `Room` class. Type this code in your IDE (VScode):

```
class Room:
    def __init__(self, name, length, breadth):
        self._name = name
        self._length = length
        self._breadth = breadth
```

Step 2: Now we need to fill out more of the class. In addition to the `init()` method, the `Room` class must also define the following three methods:

`get_name(self)` – returns the name of a `Room` object

`get_length(self)` – returns the length of a `Room` object

`get_breadth(self)` – returns the breadth of a `Room` object

Define the three methods above in your `Room` class.

Step 3: We would also like to have a method that computes the area of a `Room` object. The area is the length times the breadth. Define a method called `compute_area(self)` that will return the area a `Room` object.

`compute_area(self)` – returns area of a `Room` object

Step 4: Below is a main program that creates three room objects. Type in the code for main shown below:

```
def main():
    liv = Room("myLivingRoom", 14, 20)
    bd1 = Room("firstBR", 10, 12)
    bd2 = Room("secondBR", 10, 9)

main()
```

Step 5: Add print statements to your `main()` program to do the following:

Print the name and area of the `liv` `Room` object.

Print the sum of the areas of the `bd1` and `bd2`. In the print statement, include the string "The two bedrooms have a combined area of:"

ANS:

```
class Room:
    def __init__(self, name, length, breadth):
        self._name = name
        self._length = length
        self._breadth = breadth

    def get_name(self):
        return self._name

    def get_length(self):
        return self._length

    def get_breadth(self):
        return self._breadth

    def compute_area(self):
        return self._length * self._breadth

def main():

    liv = Room("myLivingRoom",14,20)
    bd1 = Room("firstBR", 10,12)
    bd2 = Room("secondBR", 10,9)

    print(liv.get_name(),liv.compute_area())
    b_areas = bd1.compute_area() + bd2.compute_area()
    print("The two bedrooms have a combined area of:", b_areas)

main()
```