

Exercises

Resource Name: The Quick Python Book 3rd Edition

Chapter: #15

Step: #3

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TRY THIS: INSTANCE VARIABLES

```
class Rectangle:  
    def __init__(self):  
        self.height = 6  
        self.width = 4
```

TRY THIS: INSTANCE VARIABLES AND METHODS

```
class Rectangle:
    def __init__(self, height, width):
        self.height = height
        self.width = width

    def area(self):
        return self.height * self.width
```

TRY THIS: CLASS METHODS

```
class Circle:
    pi = 3.14
    circle = []

    def __init__(self, radius):
        self.radius = radius
        self.__class__.circle.append(self)

    def area(self):
        return Circle.pi * self.radius * self.radius

    def circle_circumference(self):
        return self.radius * Circle.pi * 2

    @class_method
    def final_ans(temp):
        sum = 0
        for t in temp.circle:
            sum = sum + t.circle_circumference ()
        return sum
```

TRY THIS: INHERITANCE

```
class Shape:
    def __init__(self, a, b):
        self.a = a
        self.b = b

class Rectangle(Shape):
    def __init__(self, a, b):
        super().__init__(a, b)
```

- 1) Squares are a subset of the rectangles, so a square can inherit from a triangle.
- 2) Each shape has its own area formula so putting the area function in the class Shape isn't ok.

TRY THIS: PRIVATE INSTANCE VARIABLES

```
class Rectangle():  
    def __init__(self, x, y):  
        self.__x = x  
        self.__y = y
```

TRY THIS: PROPERTIES

```
class Rectangle():
    def __init__(self, a, b):
        self.__a = a
        self.__b = b

    @property
    def a(self):
        return self.__a

    @a.setter
    def a(self, a_updated):
        if a_updated >= 0:
            self.__a = a_updated

    @property
    def b(self):
        return self.__b

    @b.setter
    def b(self, b_updated):
        if b_updated >= 0:
            self.__b = b_updated

rectangle = Rectangle(14, 16)
print(rectangle.a, rectangle.b)
rectangle.a = 15
rectangle.b = 17
print(rectangle.a, rectangle.b)
```

LAB 15: HTML CLASSES

The file is uploaded to my GitHub.