

ICS Fall 2017
Lab Exercises Week 8

Cuboid & CCuboid(OOP Inheritance)

This problem has two parts.

Part 1: Write a simple `Cuboid` class with the following attributes and methods:

Attributes:

length, width, height (all three are integers)

Methods:

- An initializer `__init__(self, l, w, h)` which sets the `Cuboid` instance's length, width and height from user-provided arguments.
- A method `get_area(self)` which takes no arguments and returns the `Cuboid`'s surface area ($2 \times \text{length} \times \text{width} + 2 \times \text{width} \times \text{height} + 2 \times \text{height} \times \text{length}$)
- A method `get_volume(self)` which takes no arguments and returns the `Cuboid`'s volume ($\text{length} \times \text{width} \times \text{height}$)

Once you have written the class, create one instance of it with a random length, width, and height. Print out the `Cuboid` instance's dimensions (length, width, height), surface area and volume as the following random example:

Length: 2, Width: 18, Height: 1, AREA: 112, VOLUME: 36

Part 2: Inherit the `Cuboid` class and make a `CCuboid` class, which has get/set method to set color: `get_color(self)`, `set_color(self, clr)`. Now print out an instance of this class will additionally print the color as well.

Save your work as **cuboid_student.py**.