

Lab10 – OOP Going Further

Lab Objectives

The aim of this worksheet is to introduce you to Object Oriented Programming in Python by getting you to:

- Define your own class
- Write code for class attributes and methods
- Use the class to create and manipulate objects
- Extend code by using inheritance or composition

Question 1

Consider the class Point as defined in the Week 10 Lectures. Using Composition, write a class Segment with the following methods:

- A constructor with optional arguments
- A print method to print a segment
- A method `distance()` to calculate the distance between the two end points of the segment.

Question 2

Consider the class Point and the class Circle as discussed in Week 10 Lectures. Given these two classes, write a class Cylinder with similar methods as those in the class Circle. Do this in two ways:

1. By using inheritance
2. By using composition.

In each case, test your class methods for well-chosen various input data.