Python course materials

# Object Oriented Programming

## Homework Assignment

#### Problem 1

Fill in the Line class methods to accept coordinates as a pair of tuples and return the slope and distance of the line.

class Line(object):  
   
 def \_\_init\_\_(self,coor1,coor2):  
 self.coor1 = coor1  
 self.coor2 = coor2  
   
 def distance(self):  
 x1,y1 = self.coor1  
 x2,y2 = self.coor2  
 return ((x2-x1)\*\*2 + (y2-y1)\*\*2)\*\*0.5  
   
 def slope(self):  
 x1,y1 = self.coor1  
 x2,y2 = self.coor2  
 return (y2-y1)/(x2-x1)

coordinate1 = (3,2)  
coordinate2 = (8,10)  
  
li = Line(coordinate1,coordinate2)

li.distance()

9.433981132056603

li.slope()

1.6

#### Problem 2

Fill in the class

class Cylinder:  
   
 def \_\_init\_\_(self,height=1,radius=1):  
 self.height = height  
 self.radius = radius  
   
 def volume(self):  
 return self.height\*3.14\*(self.radius)\*\*2  
   
 def surface\_area(self):  
 top = 3.14 \* (self.radius)\*\*2  
 return (2\*top) + (2\*3.14\*self.radius\*self.height)

c = Cylinder(2,3)

c.volume()

56.52

c.surface\_area()

94.2