Object Oriented Programming

Homework Assignment

####Problem 1 Fill in the Line class methods to accept coordinate as a pair of tuples and return the slope and distance of the line.

In [18]:
```
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 float((y2-y1))/(x2-x1)
```

In [19]:
```
coordinate1 = (3,2)
coordinate2 = (8,10)

li = Line(coordinate1,coordinate2)
```

In [20]:
```
li.distance()
```

Out[20]:
```
9.433981132056603
```

In [21]:
```
li.slope()
```

Out[21]:
```
1.6
```

####Problem 2

Fill in the class

In [31]:
```
class Cylinder(object):

    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
```

In [32]:
```
c = Cylinder(2,3)
```

In [34]:
```
c.volume()
```

Out[34]: 56.52

In [35]:
```
c.surface_area()
```

Out[35]: 94.2

In [ ]: