Object Oriented Programming Python - Homework

In [ ]:
```
'''

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'''
```

In [ ]:
```

```

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.

In [16]:
```
class Line():

    def __init__ (self, coor1, coor2):

        self.coor1 = coor1
        self.coor2 = coor2
        #self.x1 = coor1[0]
        #self.x2 = coor1[1]
        #self.y1 = coor2[0]
        #self.y1 = coor2[1]

    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))
```

In [17]:
```
# Example Output

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

li = Line(coordinate1, coordinate2)
```

In [18]:
```
li.distance()
```

Out[18]:
```
9.433981132056603
```

In [19]:
```
li.slope()
```

Out[19]:
```
1.6
```

In [ ]:

In [ ]:

Problem 2

Fill in the class.

In [20]:
```
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)
```

In [21]:
```
# Example Output

c = Cylinder(2,3)
```

In [22]:
```
c.volume()
```

Out[22]:
```
56.52
```

In [23]:
```
c.surface_area()
```

Out[23]:
```
94.2
```

In [ ]:

In [ ]:

Challenge

In [158]:
```
class BankAccount():

    def __init__(self, owner, balance):

        self.owner = owner
        self.balance = balance

        if(self.balance < 500):
            print(f'Sorry, {self.owner} you have to deposit at least 500

        else:
            print(f'Welcome to Dutch Bangla Bank. \nThanks, {self.owner}

    def deposit(self, dep_amount):

        self.balance = self.balance + dep_amount
        print(f'Added {dep_amount} TK to the balance \nYour Current Bala

    def withdraw(self, wd_amount):

        if((wd_amount + 500) <= self.balance): # Put minimum 500Tk in yo

            self.balance = self.balance - wd_amount

            if (wd_amount < 500):  # Can't Withdraw less than 500
                print('Sorry! You can\'t withdraw less than 500 TK')

            else:
                print(f'You have successfully withdrawn {wd_amount} TK \

        else:
            print(f'Sorry! You have not Sufficiant Balance, Deposit mini

    def __str__(self):

        return f'Owner : {self.owner} \nBalance: {self.balance}'
```

In [ ]:

In [ ]:

In [159]:
```
# 1. Instantiate the class
account1 = BankAccount('Hridoy Ahmed', 500)
```

```
Welcome to Dutch Bangla Bank.
Thanks, Hridoy Ahmed for creating your account.
```

In [160]:
```
aacount2 = BankAccount('Noob2Pro', 300)
```

```
Sorry, Noob2Pro you have to deposit at least 500 Tk for creating your
account.
```

In [161]:
```
# 2.Print the object
print(account1)
```

```
Owner : Hridoy Ahmed
Balance: 500
```

In [162]:
```
# 3. Show the account owner attribute
account1.owner
```

Out[162]:
```
'Hridoy Ahmed'
```

In [163]:
```
# 4. Show the account balance attribute
account1.balance
```

Out[163]:
```
500
```

In [164]:
```
# 5. Make a series of deposits and withdrawals
account1.deposit(2000)
```

```
Added 2000 TK to the balance
Your Current Balance is 2500 TK
```

In [165]:
```
account1.withdraw(200)
```

```
Sorry! You can't withdraw less than 500 TK
```

In [166]:
```
account1.withdraw(500)
```

```
You have successfully withdrawn 500 TK
Your Current Balance is 1800 TK
```

In [167]:
```
# 6. Make a withdrawal that exceeds the available balance
account1.withdraw(2000)
```

```
Sorry! You have not Sufficiant Balance, Deposit minimum 200 TK and Try
Again
```

In [168]:
```
account1.deposit(55500)
```

```
Added 55500 TK to the balance
Your Current Balance is 57300 TK
```

In [169]:
```
account1.withdraw(50000)
```

```
You have successfully withdrawn 50000 TK
Your Current Balance is 7300 TK
```

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