

Week 5 Classes and Class Inheritance

Exercise 1: Defining Classes

1,2,3

In [13]:

```
class Item:
    def __init__(self, Description,Number,UnitPrice):
        self.Description = Description
        self.Number = Number
        self.UnitPrice = UnitPrice
        print("Item Created New Item", Description)

    def PrintItemInfo(self):
        print(self.Description, self.Number,self.UnitPrice)

    def __str__(self):
        return self.Description
```

4,5,6,7

In [16]:

```
Apple = Item("Apple",1,0.5)
Kiwi = Item("Kiwi",2,1)
Banana = Item("Banana",2,0.20)
ShoppingList = [Apple, Kiwi, Banana]
print(Apple.__str__())
print(str(Apple))
```

```
Item Created New Item Apple
Item Created New Item Kiwi
Item Created New Item Banana
```

In [15]:

```
list(map(lambda x: print(str(x)),ShoppingList))
sum(list(map(lambda x: x.Number*x.UnitPrice,ShoppingList)))
```

```
Apple
Kiwi
Banana
```

Out[15]:

2.9

In [17]:

```
# alternatively if you want to use loop
Total = 0
for item in ShoppingList:
    print(str(item))
    Total += item.UnitPrice*item.Number

print(Total)
```

Apple
Kiwi
Banana
2.9

In [6]:

```
class SpecialItem(Item):
    def __init__(self, Description, Number, UnitPrice, SpecialInfo):
        Item.__init__(self, Description, Number, UnitPrice) #alternatively you could user
the super() method to call from the parent class
        self.SpecialInfo = SpecialInfo
    def __str__(self): # override __str__() function
        return self.Description, self.SpecialInfo
    def PrintItemInfo(self): # overide the __str__()
        print(self.Description, self.Number, self.UnitPrice, self.SpecialInfo)
```

In [23]:

```
Paracetamol = SpecialItem("Paracetamol",1,1,"Take two tablets every 6 hours")
Candles = SpecialItem("Candles",20,0.1,"Fire harzard")
ShoppingList.append(Paracetamol)
ShoppingList.append(Candles)
```

Item Created New Item Paracetamol
Item Created New Item Candles

Finally let's print all the Item info from the list

In [25]:

```
for items in ShoppingList:
    items.PrintItemInfo()
```

Apple 1 0.5
Kiwi 2 1
Banana 2 0.2
Paracetamol 1 1 Take two tablets every 6 hours
Candles 20 0.1 Fire harzard

In []: