Functions: Local vs Global Variables

Global Variable

In [1]:
```
what_to_say = "Hi"

def say_something():
    print(what_to_say)

say_something()
```

```
Hi
```

Local Variable

In [7]:
```
def greeting():
    greet = "Hello"
    print(greet)

# this code will not run because "greet" in not a global variable
print(greet)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Input In [7], in <cell line: 5>()
      2     greet = "Hello"
      3     print(greet)
----> 5 print(greet)

NameError: name 'greet' is not defined
```

In [10]:
```
def numbers():
    x = 1
    print(x)
    y = 2
    print(y)
    z = 3
    print(z)

numbers()
```

```
1
2
3
```

Functions within Functions

In [14]:
```
def say_something():
    what_to_say = "Hello World"
    now_say_it()


def now_say_it():
    print(what_to_say)


now_say_it()
```

```
Hi
```

Functions withing Functions (Argunment)

In [16]:
```
def say():
    greet = "Hello"
    now_say(greet)

def now_say(content):
    print(content)

say()
```

```
Hello
```

For Loop:

In [21]:
```
cities = ['Karachi','Peshawar','Lahore','Islamabad','Faisalabad']

city = input("Enter City:")

for cit in cities:
    if city == cit:
        print("Found")
```

```
Enter City:Lahore
Found
```

While Loop:

In [25]:
```
user_input = ""
while user_input != 'q':
    user_input = input("Enter 'q' to stop / Enter Anything to Continue: ")
    if user_input == 'q':
        print("Stopped")
```

```
Enter 'q' to stop / Enter Anything to Continue: a
Enter 'q' to stop / Enter Anything to Continue: b
Enter 'q' to stop / Enter Anything to Continue: c
Enter 'q' to stop / Enter Anything to Continue: d
Enter 'q' to stop / Enter Anything to Continue: q
Stopped
```

While Loop: Setting a Flag

In [26]:
```
Keep_loop = True
while Keep_loop == True:
    user_input = input("Enter 'q' to stop / Enter Anything to Continue:")
    if user_input != 'q':
        print(user_input)
    else:
        Keep_loop = False
```

```
Enter 'q' to stop / Enter Anything to Continue:s
s
Enter 'q' to stop / Enter Anything to Continue:f
f
Enter 'q' to stop / Enter Anything to Continue:q
```

Class & Object:

In [27]:
```
class Name:
    first_name = "Ali"

#creating object
obj = Name()
print(obj.first_name)
```

```
Ali
```

The **init**() Function:

The examples above are classes and objects in their simplest form, and are not really useful in real life applications.

To understand the meaning of classes we have to understand the built-in **init**() function.

All classes have a function called **init**(), which is always executed when the class is being initiated.

Use the **init**() function to assign values to object properties, or other operations that are necessary to do when the object is being created:

In [29]:
```
class Person:
    def __init__(self, name,age):
        self.name = name
        self.age = age


obj = Person("Ali",19)
print(obj.name)
print(obj.age)
```

```
Ali
19
```

Assignment - 04

In [67]:
```
def bill_main(monthly_units):
    elec_chrg = electricity(monthly_units)
    print("Electric Charges For", monthly_units, " = ", elec_chrg)

    uniform_chrg = uniform(monthly_units)
    print("Uniform Charges For", monthly_units, " = ", uniform_chrg)

    fuel_chrg = fuel(monthly_units)
    print("Fuel Charges For", monthly_units, " = ", fuel_chrg)

    sales_tax = tax(monthly_units)
    print("Sales Tax For", monthly_units, " = ", sales_tax)

    advance_tax = advance(monthly_units)
    print("Advance Tax Charges For", monthly_units, " = ", advance_tax)

    tv_fee = tv(monthly_units)
    print("Tv Fee For", monthly_units, " = ", tv_fee)
```

```
    tot = total(elec_chrg,uniform_chrg,fuel_chrg,sales_tax,advance_tax,tv_fee)
    print("Total Bill is:", tot)

def electricity(a):
    if a <= 100:
        payAmnt = a* 500
        return payAmnt
    if a <= 200:
        payAmnt= a* 1000
        return payAmnt
    if a <= 300:
        payAmnt= a* 1500
        return payAmnt

def uniform(b):
    if b <= 100:
        unif = b * 100
        return unif
    if b <= 150:
        unif = b * 56
        return unif
    if b <= 200:
        unif = b * 23
        return unif

def fuel(c):
    if c <= 100:
        f = c * 130.5
        return f
    if c <= 200:
        f = c * 140.5
        return f
    if c <= 300:
        f = c * 150.5
        return f


def tax(d):
    if d <= 50:
        t = d * 30
        return t
    if d <= 100:
        t = d * 60
        return t
    if d <= 150:
        t = d * 90
        return t



def advance(e):
    if e <= 100:
        a = e * 10
        return a
    if e <= 200:
        a = e * 20
        return a
    if e <= 300:
        a = e * 30
```

```
        return a

def tv(f):
    if f <= 100:
        tv = f * 10
        return tv
    if f <= 200:
        tv = f * 20
        return tv
    if f <= 300:
        tv = f * 30
        return tv


def total(a,b,c,d,e,f):
    tot = a + b + c + d + e + f
    return tot


bill_main(50)
```

```
Electric Charges For 50  =  25000
Uniform Charges For 50  =  5000
Fuel Charges For 50  =  6525.0
Sales Tax For 50  =  1500
Advance Tax Charges For 50  =  500
Tv Fee For 50  =  500
Total Bill is: 39025.0
```

In [ ]: