define function and call it

In [2]:
```python
def printHello():
    print("hello")


printHello()
printHello()
```

```
hello
hello
```

function with parameters

In [4]:
```python
def printMyName( name ):
    print( name )

myName = "ahmed"
printMyName(myName)
```

```
ahmed
```

function with default values for parameters

In [5]:
```python
def printTheName( name = 'ahmed' ):
    print( name )

printTheName()
```

```
ahmed
```

In [6]:
```python
printTheName("ahmed khalifa")
```

```
ahmed khalifa
```

function with return

```
In [7]:  def addTwoNumber(x,y):
             z = x + y
             return z

         a = addTwoNumber(5,5)
         print(a)
```

```
10
```

function with reference value

```
In [13]:  myList = [1,2,3,4,5]
          for i in myList:
              print(i)
```

```
1
2
3
4
5
```

```
In [15]:  def addItemsToList(yourList):
              yourList.insert(0,0)

          addItemsToList(myList)
          for i in myList:
              print(i)
```

```
0
1
2
3
4
5
```

primitive value VS reference value

```
In [16]:  variable = 10
          print(variable)
```

```
10
```

```
In [21]:  def testchangeValue(myVariable):
              myVariable = 100

          testchangeValue(variable)
          print(variable)
```

```
10
```

global vs local variable

In [20]:
```python
#global variable
x = 10
print(x)
```

10

In [24]:
```python
def global_VS_local():
    #local variable
    x = 100

global_VS_local()
print(x)   #global variable
```

10

local variable : define inside function and can not use inside anthor funcions

global variable : define in main program and can use inside any funcions

In [26]:
```python
globalVar = 10
def test1(x1):
    print(x1)

def test2(x2):
    print(x2)

test1(globalVar)
test2(globalVar)
```

10
10

In [27]:
```python
def test3():
    localVariable = 123
    print(localVariable)

def test4():
    #localVariable is undefined
    print(localVariable)

test3()
test4()
```

```
123

---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-27-ceafc627ffab> in <module>()
      7
      8 test3()
----> 9 test4()

<ipython-input-27-ceafc627ffab> in test4()
      4
      5 def test4():
----> 6     print(localVariable)
      7
      8 test3()

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

Variable-length arguments

In [32]:
```python
def add(x , *list):
    print("this is x : ")
    print(x)
    for i in list:
        print("this is list item :")
        print(i)

add(1,2)
```

```
this is x :
1
this is list item :
2
```

In [33]: `add(1,2,3,4,5,6,7,8,9)`

```
this is x :
1
this is list item :
2
this is list item :
3
this is list item :
4
this is list item :
5
this is list item :
6
this is list item :
7
this is list item :
8
this is list item :
9
```

In [ ]: