# DICTIONARY

- using dictionary operations https://www.w3schools.com/python/python_ref_dictionary.asp (https://www.w3schools.com/python/python_ref_dictionary.asp)

In [5]:

```
dict_1 = {'name':'caleb', 'score': 23, 'fruit': "orange"}
print(dict_1)
```

```
{'name': 'caleb', 'score': 23, 'fruit': 'orange'}
```

In [22]:

```
data = {'score' : [1,2,3,4], 'name' : ['caleb', 'you', 'I', 'them']}
```

In [29]:

```
name = ['caleb', 'you', 'I', 'them']
score = [1,2,3,4]
data = {'name' : name, 'score' : score}
data
```

Out[29]:

```
{'name': ['caleb', 'you', 'I', 'them'], 'score': [1, 2, 3, 4]}
```

In [8]:

```
#creating a dictionary and naming it dict_1
dict_1={'one':1,'two':2,'three':3,'four':4,'five':5}
type(dict_1)
```

Out[8]:

```
dict
```

In [11]:

```
#creating a dictionary and naming it dict_2
dict_2={"name" : ['a','b','c','d','e','f'], "score" : [1,2,3,4,5,6]}
```

In [13]:

```
dict_2.keys()
```

Out[13]:

```
dict_keys(['name', 'score'])
```

In [15]:

```
dict_2.values()
```

Out[15]:

```
dict_values([['a', 'b', 'c', 'd', 'e', 'f'], [1, 2, 3, 4, 5, 6]])
```

In [ ]:

```
#values is used to obtain the actual list
dict_1.values()
```

In [ ]:

```
#keys
dict_1.keys()
```

In [16]:

```
#pop removes the specified item from a dictionary
dict_1.pop('three')
```

Out[16]:

```
3
```

In [17]:

```
dict_1
```

Out[17]:

```
{'one': 1,
 'two': 2,
 'four': 4,
 'five': 5,
 'six': 6,
 'seven': 7,
 'eight': 8,
 'nine': 9,
 'ten': 10}
```

In [ ]:

```
dict_1
```

In [ ]:

```
#popitem removes the last element on a list
dict_1.popitem()
```

In [ ]:

```
dict_1
```

In [ ]:

```
#
dict_3 = dict_1.copy()
```

In [ ]:

```
#
print("Dict_3:",dict_3,'\n\nDict_1: ',dict_1,"\n\nDict_2:",dict_2)
```

In [19]:

```
dict_1.update(dict_2)
```

In [20]:

```
print(dict_1)
```

```
{'one': 1, 'two': 2, 'four': 4, 'five': 5, 'six': 6, 'seven': 7, 'ei
ght': 8, 'nine': 9, 'ten': 10, 'name': ['a', 'b', 'c', 'd', 'e',
'f'], 'score': [1, 2, 3, 4, 5, 6]}
```

In [ ]:

```
dict_1.clear()
```

In [ ]:

```
dict_1
```

# Assignment

In [ ]:

```
list_2=[1,2,3,4,5,6,7,8,9,10]
```

In [ ]:

```
list_10=[10,9,8,7,6,5,4,3,2,1]
```

In [ ]:

```
d1=zip(list_2,list_10)
# d1 = dict(d1)
# d1
```

In [ ]:

```
print(dict(d1))
```

In [ ]:

```
dict_4={1:2,3:4,5:6,7:8}
```

In [ ]:

```
dict_5={2:1,3:2,4:3,5:4}
```

In [ ]:

```
dict_4.update((dict_5))
```

In [ ]:

```
dict_4
```

In [ ]:

```
dict_5={'history' : 'my life story',  'Status' : 'Married', 'Hub' : 'EOA'}
dict_5
```

In [ ]:

```
dict_5.values()
```

In [ ]:

```
print(dict_5['history'])
```

# Loops in python

- for loop
- while loop

In [36]:

```
list_1 = [0,3,4,52,11,90]
for number in list_1:
    print(number*2)
```

```
0
6
8
104
22
180
```

In [7]:

```
#creation of for loop
for i in range(1,11):
    print(i)
```

```
1
2
3
4
5
6
7
8
9
10
```

In [12]:

```
b=0
while b != 5:
    print('cool', b)
    b+=1
```

```
cool 0
cool 1
cool 2
cool 3
cool 4
```

In [4]:

```
b=40
while b>8:
    print(b)
    b-=5
```

```
40
35
30
25
20
15
10
```

In [13]:

```
l_1 = [1,'d',9,0,4,3,1]
for item in l_1:
    print(item)
```

```
1
d
9
0
4
3
1
```

In [48]:

```
a = int(input("enter a number: "))
if a == 4:
    print('correct')
else:
    print("wrong")
```

```
enter a number: 3
wrong
```

In [49]:

```
print("heloo")
```

```
heloo
```

In [41]:

```
#first was the creation of dict and then looping it automatically resulting i
d2 = {"one":2,2:3,4:5,6:7,8:9}
for i in d2.values():
    print(i)
```

```
2
3
5
7
9
```

In [8]:

```
#using the for loop to get the keys of the dictionary specifying the key been
for i in d2.keys():
    print(i)
```

```
1
2
4
6
8
```

In [9]:

```
#using the for loop to get the values of the dictionary specifying the value
for i in d2.values():
    print(i)
```

```
2
3
5
7
9
```

In [10]:

```
#instatiating b with value 0
b=0
#creating the conditional loop(while b not equal to 5)
while b!=5:
# if b!=5,print(cool)
    print('cool')
#incrementing the value of b for every print operation
    b+=1
```

```
cool
cool
cool
cool
cool
```

In [ ]:

```
#Endless or infinite loop
# b=0
# while b!=5:
#     print('cool')
```

In [11]:

```
for i in d2.keys():
    print(i)
```

```
1
2
4
6
8
```

In [19]:

```
n=8
while n>4:
    print(n)
    n-=1
    for i in range(n):
        print(i)

```

```
8
0
1
2
3
4
5
6
7
0
1
2
3
4
5
6
0
1
2
3
4
5
0
1
2
3
```

In [21]:

```
a=2
a+=1
a
```

Out[21]:

```
3
```

In [16]:

```
for i in range(4):
    print(i)
```

```
0
1
2
3
```

In [20]:

```
my_list=[1,2,3,4,5]
for item in my_list:
    print(item-2)

```

```
-1
0
1
2
3
```

In [21]:

```
for i in range(100,121):
    print(i)
```

```
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
```

In [22]:

```
new_list=[]
for item in my_list:
    new_list.append(item+2)
print(new_list)
```

```
[3, 4, 5, 6, 7]
```

In [23]:

```
your_list=[]
for item in my_list:
    your_list.append(item**2)

print(your_list)
```

```
[1, 4, 9, 16, 25]
```

In [25]:

```
our_list=[]
for item in my_list[0:2]:
    our_list.append(item**2)

for item in my_list[2:]:
    our_list.append(item+item)

print(our_list)

```

```
[1, 4, 6, 8, 10]
```

In [26]:

```
my_list
```

Out[26]:

```
[1, 2, 3, 4, 5]
```

In [27]:

```
d4={'one':1,'two':2,'three':3,'four':4,'five':5,'six':6,'seven':7,'eight':8,'n
print(type(d4))
```

```
<class 'dict'>
```

In [28]:

```
f9=[]
for item in d4.keys():
    f9.append(item)
print(f9)

```

```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'ni
ne', 'ten']
```

In [29]:

```
e8=[]
for item in d4.values():
    e8.append(item)
print(e8)

```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

In [30]:

```
b=40
while b>=10:
    print('my loop is running',b)
    b-=2
```

```
my loop is running 40
my loop is running 38
my loop is running 36
my loop is running 34
my loop is running 32
my loop is running 30
my loop is running 28
my loop is running 26
my loop is running 24
my loop is running 22
my loop is running 20
my loop is running 18
my loop is running 16
my loop is running 14
my loop is running 12
my loop is running 10
```

# conditional statements

In [51]:

```
score = int(input("enter your score: "))
if (score>=10) and (score==5):
    print('good grade')
else:
    print("try again")
```

```
enter your score: 5
try again
```

In [54]:

```
age = int(input('Enter your age :'))
if (age >= 18) and (age<=24 or age>=31):
    print("congratulations you've been accepted")
else:
    print("sorry you are underage for this class")
```

```
Enter your age :30
sorry you are underage for this class
```

In [36]:

```
Samuel=int(input('Input your score: '))
Blessing=int(input('Input your score: '))
if Samuel>Blessing:
    print("Congrats Samuel you have gotten the scholarship")
else:
    print("Congrats Blessing you have gotten the scholarship")


```

```
Input your score: 12
Input your score: 21
Congrats Blessing you have gotten the scholarship
```

In [60]:

```
print("hello word\nHow are you doing today!")
```

```
hello word
How are you doing today!
```

In [63]:

```
first_person = input('Enter your name:  ')
first_score = int(input('Input your score: '))

second_person = input('\nyour name:'  )
second_score= int(input('Input your score: '))

if first_score>second_score:
    print("Congrats {} you have gotten the scholarship".format(first_person))
elif first_score == second_score:
    print("everyone is to retake the test")
else:
    print(f"Congrats {second_person} you have gotten the scholarship")


```

```
Enter your name:  caleb
Input your score: 21

your name:victor
Input your score: 20
Congrats caleb you have gotten the scholarship
```

In [15]:

```
def test(first_name, second_name):
    first_score = int(input(f"{first_name}: Enter Your score :"))
    second_score = int(input(f"{second_name}: Enter your scorre :"))
    if first_score>second_score:
        return ("Congrats {} you have gotten the scholarship".format(first_nar
    elif first_score == second_score:
        return ("everyone is to retake the test")
    else:
        return (f"Congrats {second_name} you have gotten the scholarship")
```

In [16]:

```
1 test("caleb", 'joe')
```

```
caleb: Enter Your score :11
joe: Enter your scorre :12
```

Out[16]:

```
'Congrats joe you have gotten the scholarship'
```

In [41]:

```
1 name = input("enter your name: ")
2 print("your name is {}, thanks".format(name))
```

```
enter your name: caleb
your name is caleb, thanks
```

# Funtions in Python

A function is a block of code which only runs when it is called. You can pass data, known as parameters, into a function. A function can return data as a result.

In [2]:

```
1 def nam():
2     return 'hello world!'
```

In [3]:

```
1 nam()
```

Out[3]:

```
'hello world!'
```

In [5]:

```
1 def add(x):
2     return 2+x
```

In [9]:

```
1 add(3)
```

Out[9]:

```
5
```

In [11]:

```
1 import math as m
```

In [12]:

```
1 m.sqrt(4)
```

Out[12]:

```
2.0
```