

# Lab\_01

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```
In [1]: print('Hello World')
```

Hello World

```
In [2]: number = 10
        type(number)
```

Out[2]: int

```
In [3]: number = 10.5
        type(number)
```

Out[3]: float

```
In [4]: text = 'Hi Genius'
        type(text)
```

Out[4]: str

```
In [5]: my_Friends = ['murtaza', 'sajjad', 'abrar']
        type(my_Friends)
```

Out[5]: list

```
In [6]: my_Friends = ['murtaza', 'sajjad', 'abrar']
        my_Friends[0]
```

Out[6]: 'murtaza'

```
In [7]: my_Friends = ['murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar']
        my_Friends[0:3]
```

Out[7]: ['murtaza', 'sajjad', 'abrar']

```
In [8]: my_Friends = ['murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar']
        my_Friends[:4]
```

Out[8]: ['murtaza', 'sajjad', 'abrar', 'gulab']

```
In [9]: my_Friends = ['murtaza','sajjad','abrar','gulab','jabbar']  
my_Friends[4:]
```

```
Out[9]: ['jabbar']
```

```
In [10]: my_Friends = ['murtaza','sajjad','abrar','gulab','jabbar']  
my_Friends.index('abrar'),my_Friends.index('jabbar')
```

```
Out[10]: (2, 4)
```

```
In [11]: mixedList = ['abrar','bilal',12.5,4]  
type(mixedList),mixedList[-1]
```

```
Out[11]: (list, 4)
```

```
In [12]: mixedList = ['abrar','bilal',12.5,4]  
type(mixedList[-1])
```

```
Out[12]: int
```

```
In [13]: listOne = [1,2,3,4,5]  
listTwo = [6,7,8,9,10]  
NewList = listOne+listTwo  
NewList
```

```
Out[13]: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

```
In [14]: list = []  
listOne = [1,2,3,4,5]  
listTwo = [6,7,8]  
list.append(listOne)  
list.append(listTwo)  
list
```

```
Out[14]: [[1, 2, 3, 4, 5], [6, 7, 8]]
```

```
In [15]: my_Friends = ['murtaza','sajjad','abrar','gulab','jabbar']  
my_Friends.append('mansoor')  
my_Friends
```

```
Out[15]: ['murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar', 'mansoor']
```

```
In [16]: l1 = [1,2,3]  
l2 = [2,6,8]  
l1.extend(l2)  
l1
```

```
Out[16]: [1, 2, 3, 2, 6, 8]
```

```
In [17]: my_Friends = ['murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar']
my_Friends.sort()
my_Friends
```

```
Out[17]: ['abrar', 'gulab', 'jabbar', 'murtaza', 'sajjad']
```

```
In [18]: number = [1,2,3,4,5,7,8,5,9,0]
number.count(5)
```

```
Out[18]: 2
```

```
In [19]: my_Friends = ('murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar')
type(my_Friends)
```

```
Out[19]: tuple
```

```
In [20]: my_Friends = {'murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar'}
type(my_Friends)
```

```
Out[20]: set
```

```
In [21]: my_Friends = ['murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar']
my_Friends[0] = 'ali jamali'
my_Friends
```

```
Out[21]: ['ali jamali', 'sajjad', 'abrar', 'gulab', 'jabbar']
```

```
In [22]: my_Friends = ('murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar')
my_Friends[0] = 'ali jamali'
my_Friends
```

```
-----
TypeError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_2108\2827351864.py in <module>
      1 my_Friends = ('murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar')
----> 2 my_Friends[0] = 'ali jamali'
      3 my_Friends
```

```
TypeError: 'tuple' object does not support item assignment
```

```
In [24]: my_Friends = {'murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar'}
my_Friends[0]
```

```
-----
TypeError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_2108\3330517423.py in <module>
      1 my_Friends = {'murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar'}
----> 2 my_Friends[0]

TypeError: 'set' object is not subscriptable
```

```
In [25]: my_Friends = ['murtaza', 'sajjad', 'abrar', 'gulab', 'jabbar']
len(my_Friends)
```

Out[25]: 5

```
In [26]: number = [1,2,3,4,5,7,8,5,9,0]
max(number),min(number)
```

Out[26]: (9, 0)

```
In [27]: number = [1,2,3,4,5,7,8,5,9,0]
sum(number)
```

Out[27]: 44

```
In [31]: number = [1,2,3,4,5,7,8,5,9,0]
del list
list(number)
```

Out[31]: [1, 2, 3, 4, 5, 7, 8, 5, 9, 0]

```
In [33]: f = 0
nf = 0
for k in range(10):
    print(k, ' is number row')
    f = f + 1
nf = nf + 1
print('Number in for loop= ', f, 'number not in for loop= ', nf)
```

```
0 is number row
1 is number row
2 is number row
3 is number row
4 is number row
5 is number row
6 is number row
7 is number row
8 is number row
9 is number row
Number in for loop= 10 number not in for loop= 1
```

```
In [34]: k = 0
while True:
    k = k + 3
    if k > 36:
        print('The limit number has come')
        break
    else:
        print(k, ' The limit number has not come yet')

k
```

```
3 The limit number has not come yet
6 The limit number has not come yet
9 The limit number has not come yet
12 The limit number has not come yet
15 The limit number has not come yet
18 The limit number has not come yet
21 The limit number has not come yet
24 The limit number has not come yet
27 The limit number has not come yet
30 The limit number has not come yet
33 The limit number has not come yet
36 The limit number has not come yet
The limit number has come
```

Out[34]: 39

```
In [35]: def BMI(height, Weight):
    height_m = height/3.281
    print('Your BMI is = ', Weight/height_m**2)
    BMI(6, 65)
```

Your BMI is = 19.436735138888892

# Exercise Task 1

Define “names” and “height” lists that contain name and height of your friends respectively. Find the total number of entries in list, maximum height, and minimum height with their names and find the average height of your friends.

```
In [36]: names = ['sajjad', 'abrar', 'mansoor', 'manoj', 'usama']
height = [6, 5.5, 5.7, 5.6, 5.6]
print('Number of entries in both lists ', len(names), len(height))
print('Maximum height and Minumumm height is given respectively from list ', max(height), min(height))

for x in height:
    if x == max(height):
        print('Friend with max height ', x, ' is', names[height.index(x)])
    elif x == min(height):
        print('Friend with min height ', x, ' is', names[height.index(x)])

average = sum(height)/len(height)
print('The average height is = ', average)
```

```
Number of entries in both lists  5 5
Maximum height and Minumumm height is given respectively from list  6 5.5
Friend with max height  6 is sajjad
Friend with min height  5.5 is abrar
The average height is =  5.68
```

# Exercise Task 2

Develop a BMI function in python programming language that gets the weight and height as inputs and show that whether input user is underweight, normal weight, overweight or obese.

```
In [7]: def BMI(height,Weight):
height_m = height/3.281
BMI = Weight/height_m**2
print('Your BMI is = ', BMI)
if(BMI < 18.5):
    print('Underweight')
elif(18.5 < BMI < 24.9 ):
    print('Normal Weight')
else:
    print('OverWeight')

print('Enter Height in feet')
height1 = input()
print('Enter Weight in KG')
Weight1 = input()

height12 = int(height1)
Weight12 = int(Weight1)
BMI(height12,Weight12)
```

```
Enter Height in feet
6
Enter Weight in KG
65
Your BMI is = 19.436735138888892
Normal Weight
```

## Exercise Task 3

Write a function that takes input a number, which is temperature in degree Celsius and return the temperature in kelvin and Fahrenheit.

```
In [5]: def Temp(cal):
k = cal + 273.15
fa = cal*1.8 + 32
print('Temperature in Kelvin = ', k)
print('Temperature in Farenhite = ', fa)
print('Enter Value in celsius = ')
cal1 = input()
cal12 = int(cal1)

Temp(cal12)
```

```
Enter Value in celsius =
100
Temperature in Kelvin = 373.15
Temperature in Farenhite = 212.0
```

## Exercise Task 4

Create a list of even numbers and odd numbers with the help of for loop and append function.  
Than combine both lists together.

```
In [1]: list1 = []
list2 = []
finalList = []
for x in range(10):
    if x%2 == 0:
        list1.append(x)
    elif x%2 != 0:
        list2.append(x)
print('List 1 has even elements = ',list1)
print('List 2 has Odd elements = ', list2)
finalList = list1 + list2
print('Final List will be = ', finalList)
```

List 1 has even elements = [0, 2, 4, 6, 8]

List 2 has Odd elements = [1, 3, 5, 7, 9]

Final List will be = [0, 2, 4, 6, 8, 1, 3, 5, 7, 9]