Inclass - Lab (Day 4)

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Let's begin with some hands-on practice exercises

1. User-Define Function:

1. Define the python function to swap first and last value of the given list

Use the list given below:
my_list = [15, 78, 10, 45, 89]

In [1]:
```
# Write your code here
def swaplist(list2):
    size = len(list2)
    temp = list2[0]
    list2[0] = list2[size-1]
    list2[size-1] = temp

    return list2

list2 = [3,6,9,12,15,18]

print(swaplist(list2))
```

```
[18, 6, 9, 12, 15, 3]
```

2. Define the python function which adds two global numeric variables (1204 and 344536)

In [2]:
```
# Write your code here
def addglobnum(a,b):
    sum = a + b
    return sum

n1 = 1204
n2 = 344536

print("The sum of {} and {} is {}".format(n1,n2,addglobnum(n1,n2)))
```

```
The sum of 1204 and 344536 is 345740
```

3. Define the python function to check whether the number 33 is even or odd

In [11]:
```
# Write your code here
def iseven(x):
    if(x%2==0):
        print(x," is a even number")
    else:
        print(x," is a odd number")

x = 33
iseven(x)
```

```
33  is a odd number
```

4. Define the python function to calculate the factorial of the number

In [15]:
```
# Write your code here
def fact(x):
    if(x==0):
        return 1
    elif(x<=1):
        return 1
    else:
        return x * fact(x-1)

x = int(input("Enter a positive integetr: "))
y = fact(x)

print('The factorial of {} is {}'.format(x,y))
```

```
Enter a positive integetr: 7
The factorial of 7 is 5040
```

5. Define a function to add new items(1,2,3) in the empty list

In [16]:
```
# Write your code here
def anetl(n1,n2,n3):
    lst = []
    lst.append(n1)
    lst.append(n2)
    lst.append(n3)
    print(lst)

anetl(1,2,3)
```

```
[1, 2, 3]
```

6. Write a python function to test whether the two words start with the same character or not (take the inputs from the user)

In [8]:
```
# Write your code here
def same(x,y):
    if(x[0].upper() ==y[0].upper()):
        print("The 1st character is same in both the words")
    else:
        print("The 1st character is not the same in both the words")

e = str(input("Enter the 1st word "))
f = str(input("Enter the 2nd word "))

same(e,f)
```

```
Enter the 1st word fayiq
Enter the 2nd word Fantastic
The 1st character is same in both the words
```

7. Check if the string contains a vowel or not (take the inputs from the user)

In [59]:
```
def check_vowels(string):
   # vowels
   vowels = ['A', 'E', 'I', 'O', 'U', 'a', 'e', 'i', 'o', 'u']
   # iterating over the string
   for char in string:
      if char not in vowels:
          print(f"{string}: Not accepted")
          break
      else:
          print(f"{string}: Accepted")
          break
if __name__ == '__main__':
   # initializing strings
   string_1 = "HelloWorld"
   string_2 = "AEiouaieeu"
   # checking the strings
   check_vowels(string_1)
   check_vowels(string_2)
```

```
HelloWorld: Not accepted
AEiouaieeu: Accepted
```

Use the list given below:
my_list = [1,2,3,3,11,34,3,3,4,5]

In [16]:
```
# Write your code here
def unique_values(list1):
    x = []
    for a in list1:
        if a not in x:
            x.append(a)
    return x

print(unique_values([1,2,3,3,11,34,3,3,4,5]))
```

```
[1, 2, 3, 11, 34, 4, 5]
```

9. Find the common characters from the given two strings

Use the strings given below:
string1 = 'Angel'
string2 = 'apple'

In [17]:
```
# Write your code here
def comchar(str1,str2):
    comm_char = []
    for i in range(0,len(str1)):
        for j in range(0,len(str2)):
            if(str1[i].upper() == str2[j].upper()):
                comm_char.append(str1[i])
    print(comm_char)

string1 = 'Angel'
string2 = 'apple'

comchar(string1,string2)
```

```
['A', 'e', 'l']
```

10. Define a function to perform addition, multiplication, and subtraction of the given two numbers

Use the number given below:

a = 15

b = 4

In [19]:
```
# Write your code here
def cal(a,b):
    z = a + b
    x = a - b
    c = a * b
    print(z," is the sum of the two numners")
    print(x," is the diffrence of the two numbers")
    print(c," is the multiplication of the two numbers")

a = 15
b = 4

cal(a,b)
```

```
19  is the sum of the two numners
11  is the diffrence of the two numbers
60  is the multiplication of the two numbers
```

11. Define a function to find the sum of all elements in the list

Use the list given below:

my_list = [34, 34, 55, 2, 56, 45]

In [20]:
```
# Write your code here
def sumlst(lst):
    sum = 0
    size = len(lst)
    for i in range(0,size):
        sum+=lst[i]
    print(sum)

my_list = [34,34,55,2,56,45]
sumlst(my_list)
```

```
226
```

2. Lambda Functions

12. Find the minimum of the two numbers(34 and 78) using the lambda function

In [21]:
```
# Write your code here
minval = (lambda x,y:x if(x<y) else y)
minval(667,45)
```

Out[21]:
```
45
```

2.1 Map Function

13. Calculate the square of each element from the given tuple using the map function

Use the tuple given below:
number = (11, 21, 30, 34)

In [27]:
```
# Write your code here
number = (11, 21, 30, 34)
sqnum2 = ()
sqnum2 = map(lambda x:x**2,number)
print(tuple(sqnum2))
```

```
(121, 441, 900, 1156)
```

14. Read the given sentence and print the length of each word in a sentence in a list using the map function

Use the sentence given below:
sentence = 'Python for Data Science'

In [29]:
```
# Write your code here
sen = "Python for Data Science"
sen_lst = sen.split(" ")
len_lst = []
print(sen_lst)
len_lst = map(lambda x:len(x),sen_lst)
print(list(len_lst))
```

```
['Python', 'for', 'Data', 'Science']
[6, 3, 4, 7]
```

15. Find the remainder of all the numbers present in a list after dividing by 5

Use the list given below:
numbers = [74, 85, 14, 23]

In [28]:
```
# Write your code here
num = [74,85,14,23]
rem_num = []
rem_num = map(lambda x:x%5,num)
print(list(rem_num))
```

```
[4, 0, 4, 3]
```

16. Concatenate elements from the list1 with the corresponding element of list2

Use the list given below:
list1 = ['I', 'felt', 'happy', 'because', 'I', 'saw', 'the', 'others', 'were', 'happy']
list2 = [11,22,33,44,55,66,77,88,99]

In [34]:
```
# Write your code here


list1 = ['I', 'felt', 'happy', 'because', 'I', 'saw', 'the', 'others', 'were',
'happy']
list2 = [11,22,33,44,55,66,77,88,99]

#1st Method

x = zip(list1,list2)
x1 = list(x)
print(x1)
print("\n\n2nd method\n\n")
#2nd method

f1 = []
f1 = map(lambda x,y: x + str(y),list1,list2)
print(list(f1))
```

```
[('I', 11), ('felt', 22), ('happy', 33), ('because', 44), ('I', 55), ('saw',
66), ('the', 77), ('others', 88), ('were', 99)]


2nd method


['I11', 'felt22', 'happy33', 'because44', 'I55', 'saw66', 'the77', 'others8
8', 'were99']
```

17. Find the common elements from the given array using filter method

Use the array given below:
arr1 = ['t','u','t','o','r','i','a','l']
arr2 = ['p','o','i','n','t']

In [12]:
```
# Write your code here
arr1 = ['t','u','t','o','r','i','a','l']
arr2 = ['p','o','i','n','t']
print(list(set(arr1) & set(arr2)))
```

```
['t', 'i', 'o']
```

18. Remove odd numbers from the given list

Use the list given below:
numbers = [21, 23, 443, 355, 743, 823, 110, 1241, 3673, 352, 278, 37, 7]

In [12]:
```
# Write your code here
numbers = [21, 23, 443, 355, 743, 823, 110, 1241, 3673, 352, 278, 37, 7]
odd_num = []
odd_num = filter(lambda x: x % 2 != 0, numbers)
print(list(odd_num))
```

```
[21, 23, 443, 355, 743, 823, 1241, 3673, 37, 7]
```

2.4 Reduce Function

19. Calculate the sum of the numbers from 1 to 100

In [27]:
```
# Write your code here
import functools
import operator

r = [ i for i in range(1,101)]
print(r)
total = functools.reduce(lambda x, y: x+y, r)
print("The total of numbers betwween 1 to 100 is : ",total)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 2
2, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 4
1, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 6
0, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 7
9, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 9
8, 99, 100]
The total of numbers betwween 1 to 100 is :  5050
```

20. Determine the maximum of a given list using reduce function

Use the list given below:
my_list = [47,11,42,102,13]

In [30]:
```
# Write your code here
my_list = [47,11,42,102,13]
max_lst = functools.reduce(lambda x, y: x if x > y else y, my_list)
print(max_lst)
```

```
102
```