In [ ]:
```
Task 4

1. Write a program to create a function show_employee() using the following conditions.
It should accept the employee's name and salary and display both.
If the salary is missing in the function call then assign default value 9000 to salary
```

In [3]:
```
def showEmployee(name,salary):
    print("name: ",name)
    print("salary: ",salary)
showEmployee("Ben",12000)
showEmployee("Jessa",9000)
```

```
name:  Ben
salary:  12000
name:  Jessa
salary:  9000
```

In [ ]:
```
2. Exercise 2: Create an inner function to calculate the addition in the following way
Create an outer function that will accept two parameters, a and b
Create an inner function inside an outer function that will calculate the addition of a and b
At last, an outer function will add 5 into addition and return it
```

In [3]:
```
x=int(input("Enter a number: "))
y=int(input("Enter a number: "))
def add5(x,y):
    def addition(x,y):
        print(x+y)
        addition(x,y)
    print(x+y+5)
add5(x,y)
```

```
Enter a number: 8
Enter a number: 6
19
```

In [15]:
```
#3. Exercise 3: Generate a Python list of all the even numbers between 4 to 30

mylist=[]
for i in range(4,31):
    if i%2==0:
        mylist.append(i)
print(mylist)
```

```
[4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30]
```

In [25]:
```
#4.Exercise 4: Lambda Function to Check if value is in a List
#Given a list, the task is to write a Python program to check if the value exists in the list or not using the lambda function.

l=[1,2,3,4,5]
i=int(input("Enter a number: "))
x=lambda i:l.count(i)
if x(i)==0:
    print("Element is Not Present in the list")
else:
    print("Element is Present in the list")
```

```
Enter a number: 4
Element is Present in the list
```

In [27]:
```
l=[1,2,3,4,5]
i=int(input("Enter a number: "))
x=lambda i:l.count(i)
if x(i)==0:
    print("Element is Not Present in the list")
else:
    print("Element is Present in the list")
```

```
Enter a number: 0
Element is Not Present in the list
```

In [31]:
```
#5: Sort list of tuples with their sum
#Sort the points based on their sum of elements in the tuples

points = [(1, 2), (5, 3), (0, 7), (3, 1)]
print("The list of tuple is ")
print(points)
print("\nThe answer is")
print(sorted(points,key=lambda x:x[0]+x[1]))
```

```
The list of tuple is
[(1, 2), (5, 3), (0, 7), (3, 1)]

The answer is
[(1, 2), (3, 1), (0, 7), (5, 3)]
```

In [42]:
```
#6 :Write a python function, which will find all such numbers between 1000 and 3000 (both included) such that each digit of the n

l=[]
for i in range(1000,3000):
    evendigits=[int(evendigit) for evendigit in str(i)]
    if all(evendigit %2==0 for evendigit in evendigits):
        l.append(i)
print(l)
```

```
[2000, 2002, 2004, 2006, 2008, 2020, 2022, 2024, 2026, 2028, 2040, 2042, 2044, 2046, 2048, 2060, 2062, 2064, 2066, 2068, 2080,
2082, 2084, 2086, 2088, 2200, 2202, 2204, 2206, 2208, 2220, 2222, 2224, 2226, 2228, 2240, 2242, 2244, 2246, 2248, 2260, 2262, 2
264, 2266, 2268, 2280, 2282, 2284, 2286, 2288, 2400, 2402, 2404, 2406, 2408, 2420, 2422, 2424, 2426, 2428, 2440, 2442, 2444, 24
46, 2448, 2460, 2462, 2464, 2466, 2468, 2480, 2482, 2484, 2486, 2488, 2600, 2602, 2604, 2606, 2608, 2620, 2622, 2624, 2626, 262
8, 2640, 2642, 2644, 2646, 2648, 2660, 2662, 2664, 2666, 2668, 2680, 2682, 2684, 2686, 2688, 2800, 2802, 2804, 2806, 2808, 282
0, 2822, 2824, 2826, 2828, 2840, 2842, 2844, 2846, 2848, 2860, 2862, 2864, 2866, 2868, 2880, 2882, 2884, 2886, 2888]
```

In [ ]:
```
7 :
Write a python function that accepts a sentence and calculate and return the number of letters and digits.
Suppose the following input is supplied to the program:
hello world! 123
Then, the output should be:
LETTERS 10
DIGITS 3
```

In [48]:
```
str=input("input s string:"  )
d=l=0
for x in str:
    if x.isdigit():
        d+=1
    elif x.isalpha():
        l+=1
    else:
        pass
print("Letters", l)
print("Digits", d)
```

```
input s string:hello world!123
Letters 10
Digits 3
```

In [1]:
```
#8. MAP:  Write a Python program to convert all the characters into uppercase and lowercase and eliminate duplicate letters from

def change_cases_char(s):
    return str(s).upper(),str(s).lower()
characters={"a","A","b","B","c","C","d","D"}
print("characters are:\n",characters)
result=map(change_cases_char,characters)
print("\nchracters in upper and lower \neliminate duplicate letters:")
print(set(result))
```

```
characters are:
 {'a', 'A', 'C', 'b', 'd'}

chracters in upper and lower
eliminate duplicate letters:
{('D', 'd'), ('B', 'b'), ('A', 'a'), ('C', 'c')}
```

In [6]:
```
#9 MAP:
# Write a Python program to add two given lists and find the difference between them. Use the map() function

l1=[1,2,3,4,5]
l2=[6,7,8,9,0]
print("list:")
print(l1)
print(l2)
result = map(lambda x, y: x + y, l1, l2)
print("\nResult: adding two list")
print(list(result))
```

```
list:
[1, 2, 3, 4, 5]
[6, 7, 8, 9, 0]

Result: adding two list
[7, 9, 11, 13, 5]
```

In [8]:
```
#10 Filter:
#Write a Python program to filter the height and weight of students, which are stored in a dictionary using lambda.

def filterdata(students):
    result = dict(filter(lambda x: (x[1][0], x[1][1]) > (6.0, 70), students.items()))
    return result
students = {'Cierra Vega': (6.2, 70), 'Alden Cantrell': (5.9, 65), 'Kierra Gentry': (6.0, 68), 'Pierre Cox': (5.8, 66)}
print("Original Dictionary:")
print(students)
print("\nHeight> 6ft and Weight> 70kg:")
print(filterdata(students))
```

```
Original Dictionary:
{'Cierra Vega': (6.2, 70), 'Alden Cantrell': (5.9, 65), 'Kierra Gentry': (6.0, 68), 'Pierre Cox': (5.8, 66)}

Height> 6ft and Weight> 70kg:
{'Cierra Vega': (6.2, 70)}
```

In [ ]:
```
#11 Filter:
Write a Python program to remove all elements from a given list present in another list using lambda.
Original lists:
list1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
list2: [2, 4, 6, 8]
Remove all elements from 'list1' present in 'list2:
[1, 3, 5, 7, 9, 10]
```

In [3]:
```
list1=[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
list2=[2, 4, 6, 8]
remover=lambda value:value not in list2
number_filter=list(filter(remover,list1))
print(number_filter)
```

```
[1, 3, 5, 7, 9, 10]
```

In [17]:
```
#12 Reduce:


#Write a Python program to calculate the product of a given list of numbers using lambda.
#list1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
#Product of the said list numbers:
#3628800

import functools
```

```
import functools
def remove_duplicates(nums):
    result = functools.reduce(lambda x, y: x * y, nums, 1)
    return result
nums1 = [1,2,3,4,5,6,7,8,9,10]
print("list1:", nums1)
print("Product of the said list numbers:")
print(remove_duplicates(nums1))
```

```
list1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
Product of the said list numbers:
3628800
```

In [18]:
```
#13 Reduce:
# Write a Python program to multiply all the numbers in a given list using lambda.
#Original list:[4, 3, 2, 2, -1, 18]
#Mmultiply all the numbers of the said list: -864

from functools import reduce
def mutiple_list(nums):
    result =  reduce(lambda x, y: x*y, nums)
    return result
nums = [4, 3, 2, 2, -1, 18]
print ("Original list: ")
print(nums)
print("Mmultiply all the numbers of the said list:",mutiple_list(nums))
```

```
Original list:
[4, 3, 2, 2, -1, 18]
Mmultiply all the numbers of the said list: -864
```

In [22]:
```
#14 Reduce:
#Write a Python program to calculate the average value of the numbers in a given tuple of tuples using lambda.
#Original Tuple:
#((10, 10, 10), (30, 45, 56), (81, 80, 39), (1, 2, 3))
#Average value of the numbers of the said tuple of tuples:
#(30.5, 34.25, 27.0)

def average_tuple(nums):
    result = tuple(map(lambda x: sum(x) / float(len(x)), zip(*nums)))
    return result

nums = ((10, 10, 10), (30, 45, 56), (81, 80, 39), (1, 2, 3))
print ("Original Tuple: ")
print(nums)
print("\nAverage value of the numbers of the said tuple of tuples:\n",average_tuple(nums))
```

```
Original Tuple:
((10, 10, 10), (30, 45, 56), (81, 80, 39), (1, 2, 3))

Average value of the numbers of the said tuple of tuples:
 (30.5, 34.25, 27.0)
```

In [25]:
```
#15:
#Write a Python program to sort a given mixed list of integers and strings using lambda. Numbers must be sorted before strings.
#Original list:[19, 'red', 12, 'green', 'blue', 10, 'white', 'green', 1]
#Sort the said mixed list of integers and strings:[1, 10, 12, 19, 'blue', 'green', 'green', 'red', 'white']

def sort_mylist(mixed_list):
    mixed_list.sort(key=lambda e: (isinstance(e, str), e))
    return mixed_list
```

```
mixed_list = [19,'red',12,'green','blue', 10,'white','green',1]
print(mixed_list)
print("\nSort the said  mixed list of integers and strings:")
print(sort_mylist(mixed_list))
```

```
[19, 'red', 12, 'green', 'blue', 10, 'white', 'green', 1]

Sort the said  mixed list of integers and strings:
[1, 10, 12, 19, 'blue', 'green', 'green', 'red', 'white']
```

In [2]:
```
#16: Write a Python program to count the occurrences of items in a given list using lambda.
#Original list:[3, 4, 5, 8, 0, 3, 8, 5, 0, 3, 1, 5, 2, 3, 4, 2]
#Count the occurrences of the items in the said list:{3: 4, 4: 2, 5: 3, 8: 2, 0: 2, 1: 1, 2: 2}

list1=[3, 4, 5, 8, 0, 3, 8, 5, 0, 3, 1, 5, 2, 3, 4, 2]
dic = dict(map(lambda x: (x, list1.count(x)), set(list1)))
print(dic)
```

```
{0: 2, 1: 1, 2: 2, 3: 4, 4: 2, 5: 3, 8: 2}
```

In [1]:
```
#17: Write a Python program to remove None values from a given list using the lambda function.
#Original list:[12, 0, None, 23, None, -55, 234, 89, None, 0, 6, -12]
#Remove None value from the said list:[12, 0, 23, -55, 234, 89, 0, 6, -12]

list1=[12, 0, None, 23, None, -55, 234, 89, None, 0, 6, -12]
no_none=list(filter(lambda x: x is not None,list1))
print(no_none)
```

```
[12, 0, 23, -55, 234, 89, 0, 6, -12]
```

In [ ]: