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 [1]:
```
def show_employee(name,salary=9000):
    print("name: ",name)
    print("salary: ",salary)

show_employee("Ben",12000)
show_employee("jessa")
```

```
name:  Ben
salary:  12000
name:  jessa
salary:  9000
```

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]:
```
a=int(input("enter a number: "))
b=int(input("enter a number:" ))
def add5(a,b):
    def addition(a,b):
        print(a+b)
        addition(a,b)
        print(a+b+5)
    add5(a,b)
```

```
enter a number: 3
enter a number:5
```

3: Generate a Python list of all the even numbers between 4 to 30

In [4]:
```
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]
```

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.

In [5]:
```
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: 6
element is not present in the list
```

5: Sort the points based on their sum of elements in the tuples

In [6]:
```
points=[(1,2),(5,3),(0,7),(3,1)]
mylist=[(i+j,(i,j))for (i,j) in points]
x=sorted(mylist,key=lambda mylist:mylist[0])
[y[1] for y in x]
```

Out[6]:
```
[(1, 2), (3, 1), (0, 7), (5, 3)]
```

6 :Write a python function, which will find all such numbers between 1000 and 3000 (both included) such that each digit of the number is an even number.

#Return the results as a list

In [9]:
```
l=[]
for i in range (1000,3001):
    digits=[int(digit)for digit in str(i)]
    if all(digit%2==0 and digit!=0 for digit in digits):
        l.append(i)
l
```

Out[9]:
```
[2222,
 2224,
 2226,
 2228,
 2242,
 2244,
 2246,
 2248,
 2262,
 2264,
 2266,
 2268,
 2282,
```

```
2626,
2628,
2642,
2644,
2646,
2648,
2662,
2664,
2666,
2668,
2682,
2684,
2686,
2688,
2822,
2824,
2826,
2828,
2842,
2844,
2846,
2848,
2862,
2864,
2866,
2868,
2882,
2884,
2886,
2888]
```

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 [13]:
```
l=[]
a=input("enter the sentence: ")
for i in a:
    if i.isnumeric():
        l.append(i)
l
print(len(l),":number of digits")
k=[]
for i in a:
    if i.isalpha():
        k.append(i)
k
print(len(k),":number of letters")
```

```
enter the sentence: 15 july
2 :number of digits
4 :number of letters
```

8: Write a Python program to convert all the characters into uppercase and lowercase and eliminate duplicate letters from a given sequence. Use the map() function

In [18]:
```
a=input("enter the sentence:")
result_1=map(lambda x:x.upper(),a)
result_2=map(lambda x:x.lower(),a)
result_3=set(a)
```

```
enter the sentence:hi anukrishnan
```

In [20]:
```
for i in result_3:
    print(i)
```

```
r
s
h
n
a
u

i
k
```

In [21]:
```
for i in result_2:
    print(i)
```

```
h
i

a
n
u
k
r
i
s
h
n
a
n
```

9: MAP:

Write a Python program to element wise add two given lists and find the difference between them. Use the map() function

In [24]:
```
l_1=[1,2,3,4,8]
l_2=[1,6,5,7,2]
result_1=map(lambda x,y:x+y,l_1,l_2)
list(result_1)
```

Out[24]:
```
[2, 8, 8, 11, 10]
```

In [28]:
```
l_1=[1,2,3,4,8]
l_2=[1,6,5,7,2]
result_2=map(lambda x,y:x-y,l_1,l_2)
list(result_2)
```

Out[28]:
```
[0, -4, -2, -3, 6]
```

10: Filter:

#Write a Python program to filter the height and weight of students, which are stored in a dictionary using lambda.

In [35]:
```
mydict={'cierra vega':(6.2,71),'alden cantrell':(5.9,65),'kierra gentry':(6.0,68),'pierre cox':(5.8,66)}
newdict=filter(lambda i:mydict[i][0]>6 and mydict[i][1]>70,mydict)
for i in newdict:
    print({i:mydict[i]})
```

```
{'cierra vega': (6.2, 71)}
```

11: Filter:

#Write a Python program to remove all elements from a given list present in another list using lambda.

In [36]:
```
list_1=[1,2,3,4,5,6,7,8,9,10]
list_2=[2,4,6,8]
result=filter(lambda x: x not in list_2,list_1)
list(result)
```

Out[36]:
```
[1, 3, 5, 7, 9, 10]
```

12: Reduce:

#Write a Python program to calculate the product of a given list of numbers using lambda.

In [40]:
```
from functools import reduce
list1=[1,2,3,4,5,6,7,8,9,10]
result=reduce(lambda a,b,:a*b,list1)
result
```

Out[40]:
```
3628800
```

13: Reduce: Write a Python program to multiply all the numbers in a given list using lambda.

In [41]:
```
from functools import reduce
list_1=[4,3,2,2,-1,18]
result=reduce(lambda a,b:a*b,list_1)
result
```

Out[41]:
```
-864
```

14: Reduce: Write a Python program to calculate the average value of the numbers in a given tuple of tuples using lambda.

In [44]:
```
a=((10,10,10),(30,45,56),(81,80,39),(1,2,3))
l1=[]
for i in range(0,4):
    k1=a[i][0]
    l1.append(k1)
first=sum(l1)/4

l2=[]
for i in range(0,4):
    k2=a[i][1]
    l2.append(k2)
second=sum(l2)/4

l3=[]
for i in range(0,4):
    k3=a[i][2]
    l3.append(k3)
third=sum(l3)/4

print((first,second,third))
```

```
(30.5, 34.25, 27.0)
```

15:Write a Python program to sort a given mixed list of integers and strings using lambda. Numbers must be sorted before strings.

In [45]:
```
mylist=[19,'red',12,'greeen','blue',10,'white','green',1]
newlist=sorted(mylist,key=lambda x:(isinstance(x,str),x))
newlist
```

Out[45]:
```
[1, 10, 12, 19, 'blue', 'greeen', 'green', 'red', 'white']
```

16: Write a Python program to count the occurrences of items in a given list using lambda.

In [59]:
```
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}
```

17:Write a Python program to remove None values from a given list using the lambda function.

In [1]:
```
l1=[12, 0, None, 23, None,-55, 234, 89, None, 0, 6, -12]
no_none=list(filter(lambda x:x is not None, l1))
print(no_none)
```

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