

# DISTRIBUTED SYSTEMS LAB

## LAB –1

### PYTHON BASIC PRACTICE-1

```
counter = 100 # An integer assignment
```

```
miles = 1000.0 # A floating point
```

```
name = "John" # A string
```

```
print (counter)
```

```
print (miles)
```

```
print (name)
```

```
a = 5 # integer assignment
```

```
b= 4.56 #floating point assignment #mathematical operations with scalar variables print (5*a), would give the result 25
```

```
print (a/2) #would give the result 2.5
```

```
print(a**2) #is the power (squaring operation) would give the result 25
```

```
str = 'Hello World!'
```

```
print (str) # Prints complete string
```

```
print (str[0]) # Prints first character of the string
```

```
print (str[2:5]) # Prints characters starting from 3rd to 5th print (str[2:]) # Prints string starting from 3rd character
```

```
print (str * 2) # Prints string two times
```

```
print (str + "TEST") # Prints concatenated string
```

```
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
var1 = 'Hello World!'
```

```
print ("Updated String :", var1[:6] + 'Python')
```

```
print( "My name is %s and weight is %d kg!" % ('Abay', 55))
```

```
str = "this is string example wow!!!";
```

```
print (str.capitalize())
```

```
str = "this is string example ...wow!!!";
```

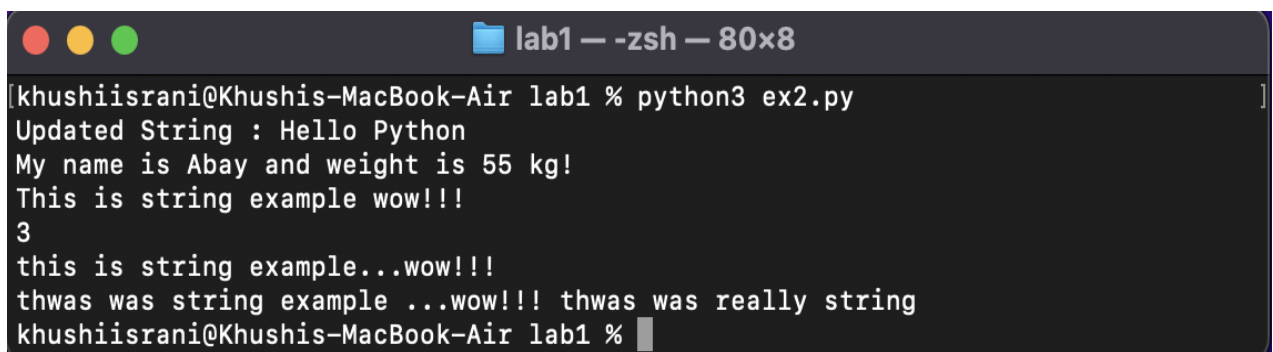
```
s_count = str.count('s')
```

```
print(s_count)
```

```
str = "THIS IS STRING EXAMPLE...WOW!!!"; print (str.lower())
```

```
str = "this is string example ...wow!!! this is really string";
```

```
print (str.replace("is", "was"))
```



```
lab1 — -zsh — 80x8
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex2.py
Updated String : Hello Python
My name is Abay and weight is 55 kg!
This is string example wow!!!
3
this is string example...wow!!!
thwas was string example ...wow!!! thwas was really string
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
num=float(input('Enter a number:'))
```

```
if num>0:
```

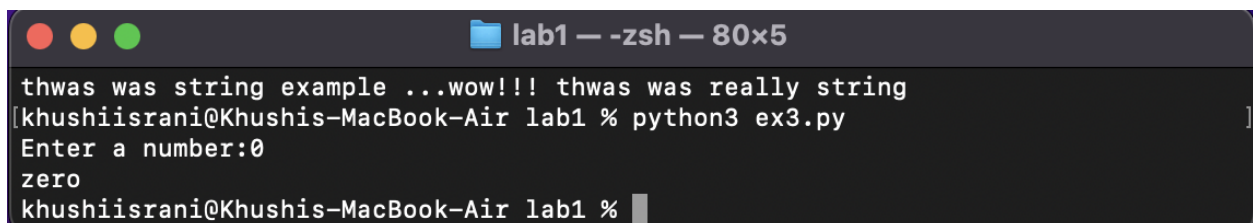
```
print('pos number')
```

```
elif num==0:
```

```
print('zero')
```

```
else:
```

```
print('Neg number')
```



```
lab1 — -zsh — 80x5
thwas was string example ...wow!!! thwas was really string
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex3.py
Enter a number:0
zero
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
x=float(input('Enter a number:'))
```

```
if x<10:
```

```
print('smaller')
```

```
if x>20:
```

```
print('bigger')
```

```
print('Finished')
```

```
lab1 — -zsh — 80x5
khushiisrani@Khushis-MacBook-Air lab1 % python3 ex4.py
Enter a number:6
smaller
Finished
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
x=5

print('Before 5')

if(x==5):

    print('this is 5')

    print('still 5')

    print('After 5')

print('Before 6')

if x==6:

    print('this is 6')

    print('After 6')
```

```
lab1 — -zsh — 80x8
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex5.py
Before 5
this is 5
still 5
After 5
Before 6
After 6
khushiisrani@Khushis-MacBook-Air lab1 %]
```

```
x=float(input('Enter a number:'))

if x<20:

    print('Below 20')

elif x<10:

    print('Below 10')

else:

    print('something else')
```

```
lab1 — -zsh — 80x5
After 6
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex6.py
Enter a number:12
Below 20
khushiisrani@Khushis-MacBook-Air lab1 %]
```

```
x=42

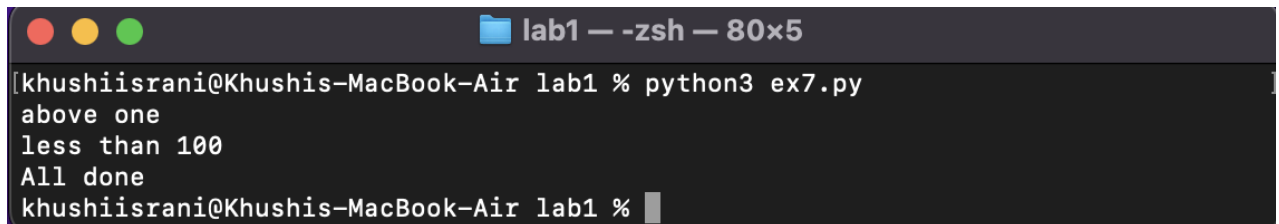
if x>1:

    print('above one')

if x<100:

    print('less than 100')

print('All done')
```

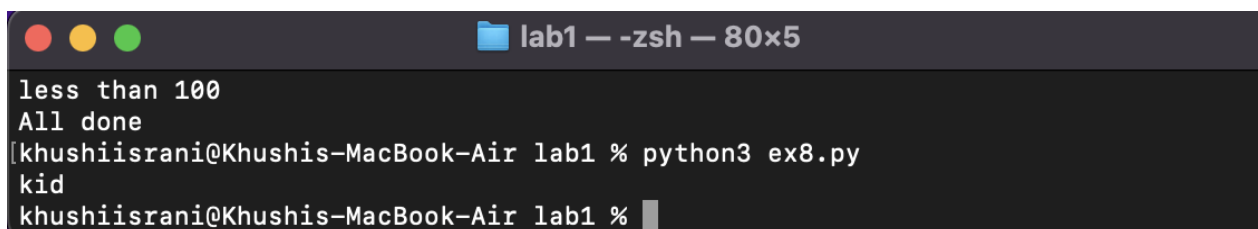
A terminal window titled 'lab1 — -zsh — 80x5' on a MacBook-Air. The prompt is '[khushiisrani@Khushis-MacBook-Air lab1 %]'. The command 'python3 ex7.py' has been executed, resulting in the output: 'above one', 'less than 100', and 'All done'. The prompt is now '[khushiisrani@Khushis-MacBook-Air lab1 %]' with a cursor.

```
lab1 — -zsh — 80x5
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex7.py
above one
less than 100
All done
khushiisrani@Khushis-MacBook-Air lab1 % ]
```

```
age=15

b=('kid' if age<18 else 'adult')

print(b)
```

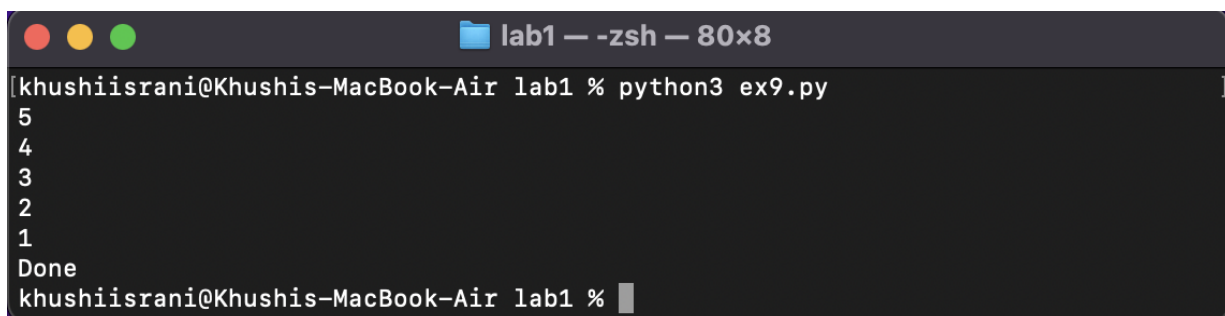
A terminal window titled 'lab1 — -zsh — 80x5' on a MacBook-Air. The prompt is '[khushiisrani@Khushis-MacBook-Air lab1 %]'. The command 'python3 ex8.py' has been executed, resulting in the output: 'less than 100' and 'All done'. The prompt is now '[khushiisrani@Khushis-MacBook-Air lab1 %]'. The command 'python3 ex8.py' has been executed again, resulting in the output: 'kid'. The prompt is now '[khushiisrani@Khushis-MacBook-Air lab1 %]' with a cursor.

```
lab1 — -zsh — 80x5
less than 100
All done
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex8.py
kid
khushiisrani@Khushis-MacBook-Air lab1 % ]
```

```
for val in [5,4,3,2,1]:

    print(val)

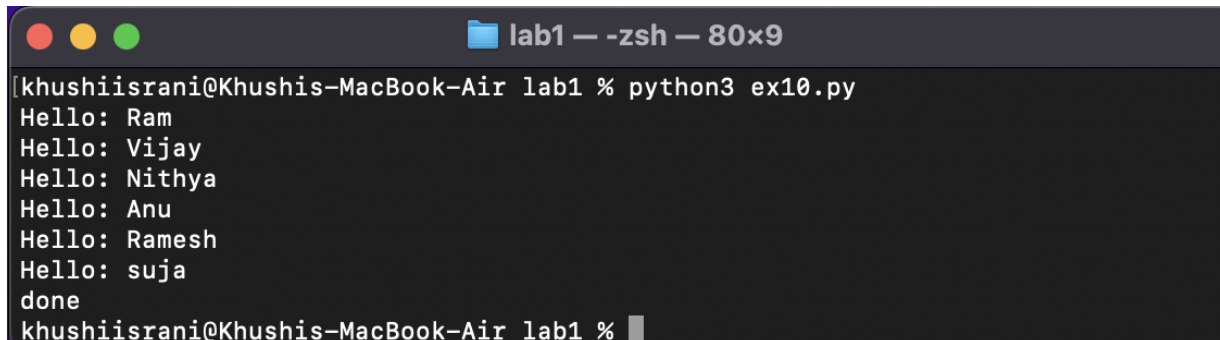
print('Done')
```

A terminal window titled 'lab1 — -zsh — 80x8' on a MacBook-Air. The prompt is '[khushiisrani@Khushis-MacBook-Air lab1 %]'. The command 'python3 ex9.py' has been executed, resulting in the output: '5', '4', '3', '2', '1', and 'Done'. The prompt is now '[khushiisrani@Khushis-MacBook-Air lab1 %]' with a cursor.

```
lab1 — -zsh — 80x8
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex9.py
5
4
3
2
1
Done
khushiisrani@Khushis-MacBook-Air lab1 % ]
```

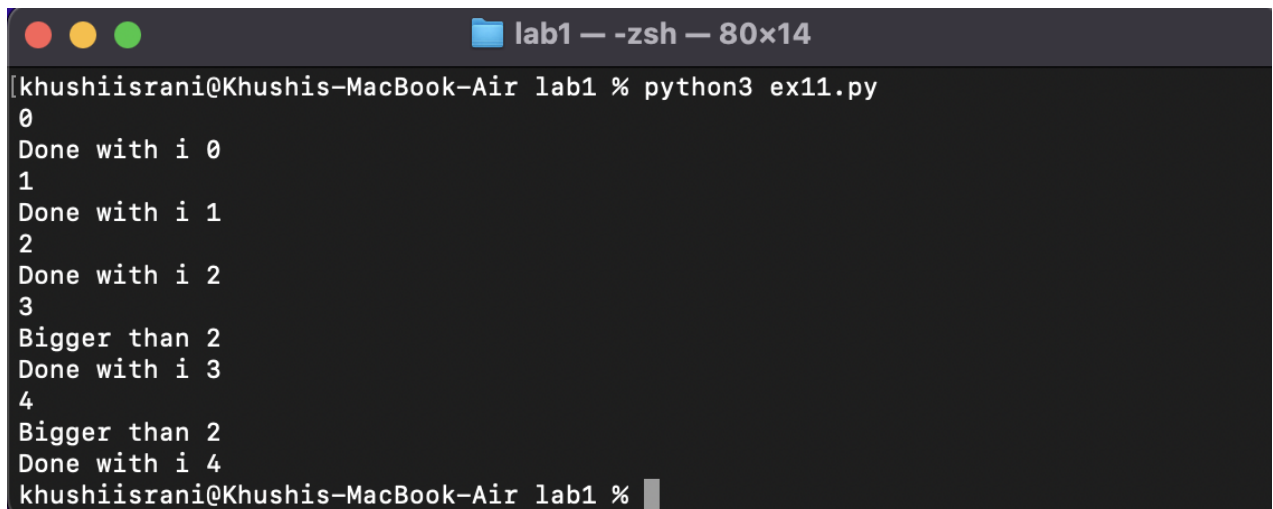
```
stud=['Ram','Vijay','Nithya','Anu','Ramesh','suja']
```

```
for k in stud:  
  
    print('Hello:', k)  
  
print('done')
```

A terminal window titled 'lab1 — -zsh — 80x9' on a MacBook Air. The prompt is '[khushiisrani@Khushis-MacBook-Air lab1 %]'. The command 'python3 ex10.py' has been executed, resulting in the following output: 'Hello: Ram', 'Hello: Vijay', 'Hello: Nithya', 'Hello: Anu', 'Hello: Ramesh', 'Hello: suja', and 'done'. The prompt is now '[khushiisrani@Khushis-MacBook-Air lab1 %]' with a cursor.

```
lab1 — -zsh — 80x9  
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex10.py  
Hello: Ram  
Hello: Vijay  
Hello: Nithya  
Hello: Anu  
Hello: Ramesh  
Hello: suja  
done  
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
for i in range(5):  
  
    print(i)  
  
    if i>2:  
  
        print('Bigger than 2')  
  
    print('Done with i', i)
```

A terminal window titled 'lab1 — -zsh — 80x14' on a MacBook Air. The prompt is '[khushiisrani@Khushis-MacBook-Air lab1 %]'. The command 'python3 ex11.py' has been executed, resulting in the following output: '0', 'Done with i 0', '1', 'Done with i 1', '2', 'Done with i 2', '3', 'Bigger than 2', 'Done with i 3', '4', 'Bigger than 2', and 'Done with i 4'. The prompt is now '[khushiisrani@Khushis-MacBook-Air lab1 %]' with a cursor.

```
lab1 — -zsh — 80x14  
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex11.py  
0  
Done with i 0  
1  
Done with i 1  
2  
Done with i 2  
3  
Bigger than 2  
Done with i 3  
4  
Bigger than 2  
Done with i 4  
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
x=int(input('Enter a number:'))  
  
for i in range(1,x+1):  
  
    if x%i==0:  
  
        print(i)
```

```
lab1 — -zsh — 80x7
khushiisrani@Khushis-MacBook-Air lab1 % python3 ex12.py
Enter a number:10
1
2
5
10
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
from math import *
x=[9,41,12,3,74,15]
largest=-inf
for i in x:
    if i>largest:
        largest=i
print(largest)
```

```
lab1 — -zsh — 80x5
5
10
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex13.py
74
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
from math import *
x=[9,41,12,3,74,15]
smallest=inf
for i in x:
    if i<smallest:
        smallest=i
print(smallest)
```

```
lab1 — -zsh — 80x5
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex14.py
-inf
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex14.py
3
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
x=[9,41,12,3,74,15]
```

```
count=sum=avg=0
```

```
for i in x:
```

```
count=count+1
```

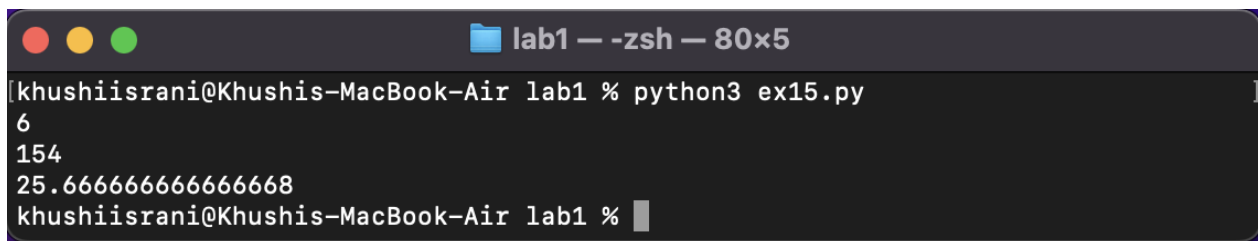
```
sum=sum+i
```

```
avg=sum/count
```

```
print(count)
```

```
print(sum)
```

```
print(avg)
```

A terminal window titled 'lab1 — -zsh — 80x5' on a MacBook-Air. The prompt is 'khushiisrani@Khushis-MacBook-Air lab1 %'. The command 'python3 ex15.py' has been executed, resulting in three lines of output: '6', '154', and '25.666666666666668'. The prompt is now 'khushiisrani@Khushis-MacBook-Air lab1 %' with a cursor.

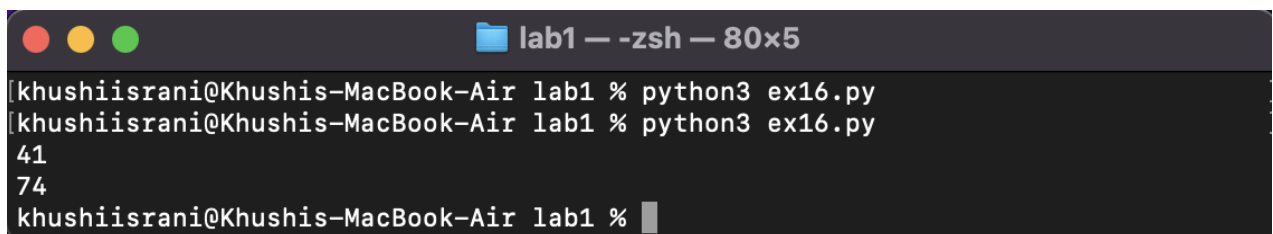
```
lab1 — -zsh — 80x5
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex15.py
6
154
25.666666666666668
khushiisrani@Khushis-MacBook-Air lab1 % ]
```

```
x=[9, 41, 12, 3, 74, 15]
```

```
for i in x:
```

```
if i>20:
```

```
print (i)
```

A terminal window titled 'lab1 — -zsh — 80x5' on a MacBook-Air. The prompt is 'khushiisrani@Khushis-MacBook-Air lab1 %'. The command 'python3 ex16.py' has been executed twice, resulting in two lines of output: '41' and '74'. The prompt is now 'khushiisrani@Khushis-MacBook-Air lab1 %' with a cursor.

```
lab1 — -zsh — 80x5
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex16.py
khushiisrani@Khushis-MacBook-Air lab1 % python3 ex16.py
41
74
khushiisrani@Khushis-MacBook-Air lab1 % ]
```

```
x= [9, 41, 12, 3, 74, 15]
```

```
res=[]
```

```
for i in x:
```

```
if i>20:
```

```
res.append(i)
```

```
print(res)
```

```
lab1 — -zsh — 80x5
41
74
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex17.py
[41, 74]
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
price = 100
if price > 100:
    print('price is greater than 100')
elif price == 100:
    print('price is 100')
elif price < 100:
    print('price is less than 100')
```

```
lab1 — -zsh — 80x5
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex18.py
"price is 100"
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex18.py
price is 100
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
# initialize the variable
i= 1
n=5
# while loop from i = 1 to 5
while i <= n:
    print(i)
    i = i+1
```

```
lab1 — -zsh — 80x7
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex19.py
1
2
3
4
5
khushiisrani@Khushis-MacBook-Air lab1 %
```

```
total = 0
number = int(input('Enter a number: '))
```



```
# add numbers until number is zero

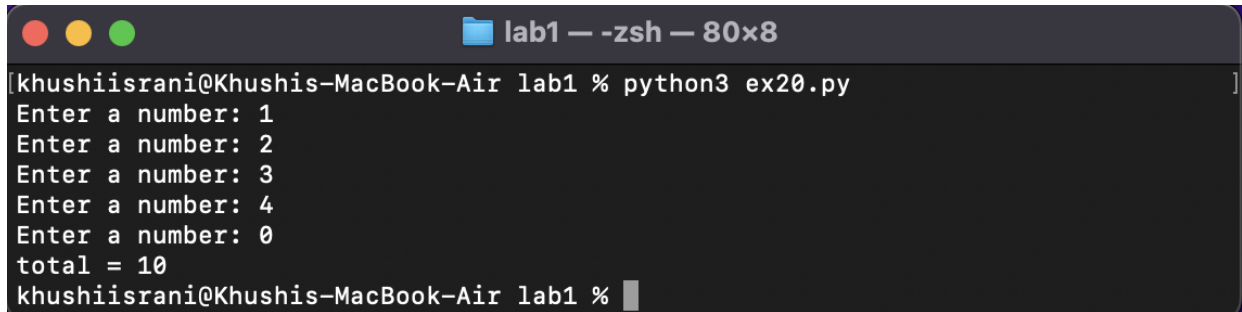
while number != 0:

    total += number # total = total + number

# take integer input again

number = int(input('Enter a number: '))

print('total =', total)
```

A terminal window titled "lab1 — -zsh — 80x8" is shown. The prompt is "khushiisrani@Khushis-MacBook-Air lab1 %". The command "python3 ex20.py" has been executed. The program prompts the user to "Enter a number:" five times, with inputs 1, 2, 3, 4, and 0. After the final input, it prints "total = 10". The prompt returns to "khushiisrani@Khushis-MacBook-Air lab1 %".

```
lab1 — -zsh — 80x8
[khushiisrani@Khushis-MacBook-Air lab1 % python3 ex20.py
Enter a number: 1
Enter a number: 2
Enter a number: 3
Enter a number: 4
Enter a number: 0
total = 10
khushiisrani@Khushis-MacBook-Air lab1 % ]
```