

# PYTHOM PROGRAMING

## Course Outcome 1(CO1)

### **3.List comprehensions:**

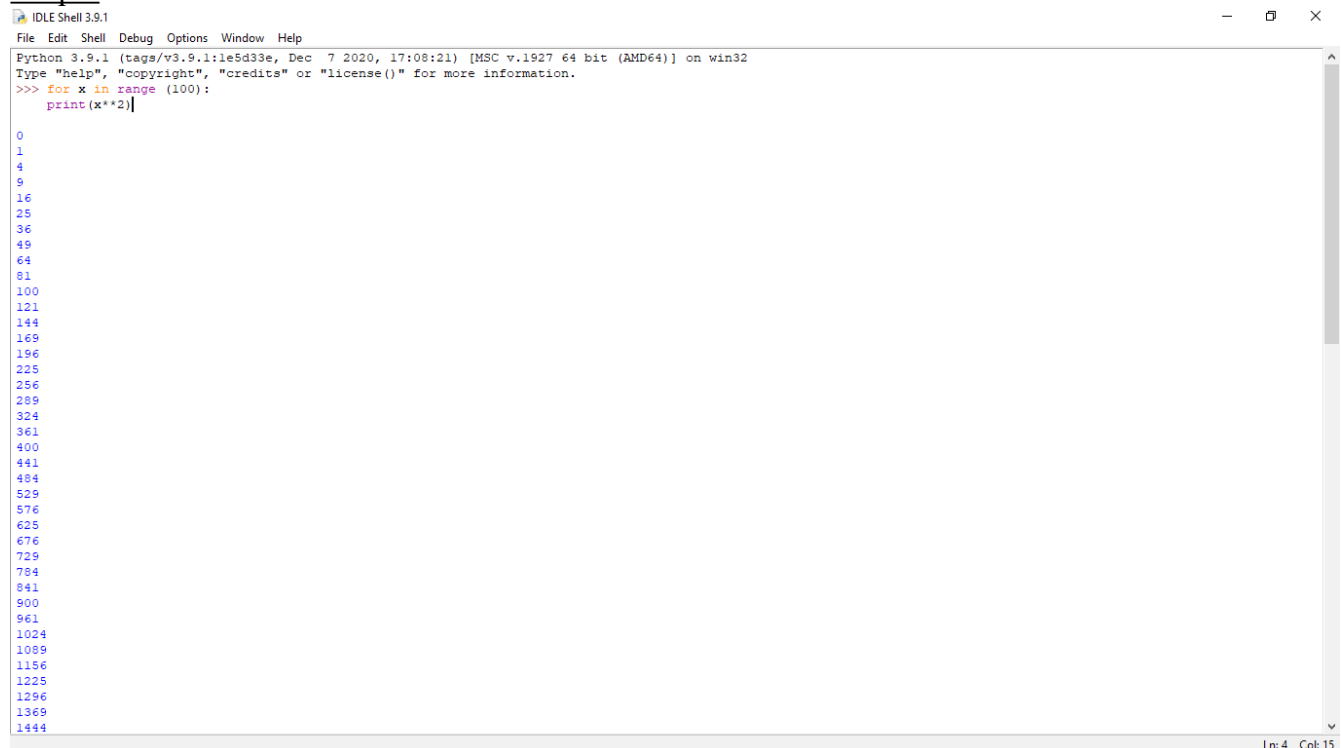
**(b) Square of N numbers**

**(c)Form a list of vowels selected from a given word**

#### Program (b)

```
for x in range (100):  
    print(x**2)
```

#### Output



```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> for x in range (100):
      print(x**2)
0
1
4
9
16
25
36
49
64
81
100
121
144
169
196
225
256
289
324
361
400
441
484
529
576
625
676
729
784
841
900
961
1024
1089
1156
1225
1296
1369
1444
Ln: 4 Col: 15
```

#### Program (c)

```
def Check_Vow(string, vowels):  
    final = [each for each in string if each in vowels]  
    print(len(final))  
    print(final)
```

```
string = "This is a python program"  
vowels = "AaEeIiOoUu"  
Check_Vow(string, vowels);
```

## Output



```
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Ashiq\Documents\python\vowels.py =====
6
['i', 'i', 'a', 'o', 'o', 'a']
>>>
```

## 4.Count the occurrences of each word in a line of text.

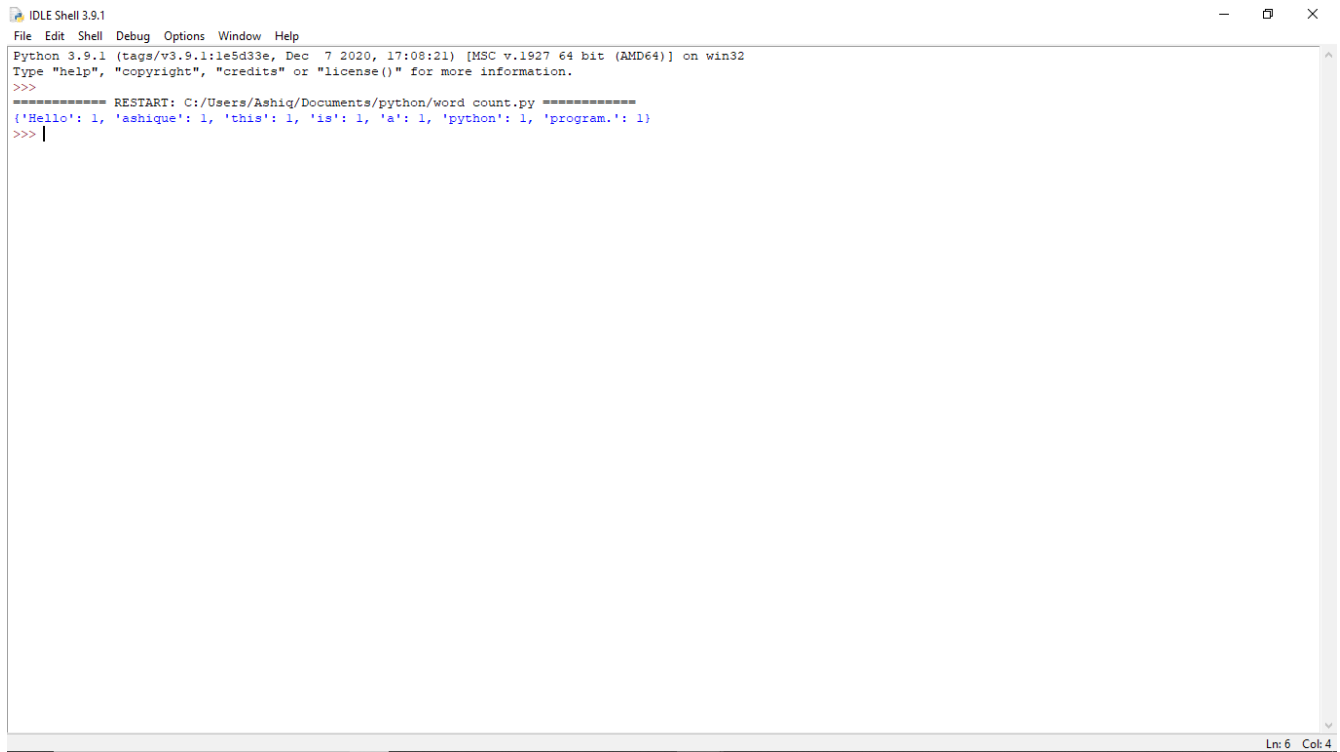
### Program

```
def word_count(str):
    counts = dict()
    words = str.split()

    for word in words:
        if word in counts:
            counts[word] += 1
        else:
            counts[word] = 1

    return counts
print( word_count(' Hello ashique this is a python program.'))
```

## Output



```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Ashiq/Documents/python/word count.py =====
{'Hello': 1, 'ashique': 1, 'this': 1, 'is': 1, 'a': 1, 'python': 1, 'program.': 1}
>>> |
```

## **6.Store a list of first names. Count the occurrences of ‘a’ within the list**

### Program

```
test_str = "Hey ashique this is python program"
count = 0
```

```
for i in test_str:
    if i == 'a':
        count = count + 1
```

```
print ("Count of a in Hey ashique this is python program is : " + str(count))
```

## Output

A screenshot of the IDLE Shell 3.9.1 window. The window title is "IDLE Shell 3.9.1". The menu bar includes "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The main text area shows the following output: "Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32", "Type 'help', 'copyright', 'credits' or 'license()' for more information.", ">>>", "===== RESTART: C:/Users/Ashiq/Documents/python/count of a.py =====", "Count of a in Hey ashique this is python program is : 2", and ">>>". The status bar at the bottom right indicates "Ln: 6 Col: 4".

```
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Ashiq/Documents/python/count of a.py =====
Count of a in Hey ashique this is python program is : 2
>>>
```

### **7. Enter 2 lists of integers. Check**

- a) Whether list are of same length**
- b) Whether list sums to same value**
- c) Whether any value occur in both?**

### Program

```
list1=[]
list2=[]
n= int(input("Enter the size of list 1 : "))
m= int(input("Enter the size of list 2 : "))

print("Enter integer elements of list 1")
for i in range(0,n):

    value = int(input())
    list1.append(value)

print("Enter integer elements of list 2")
for i in range(0,m):

    value = int(input())
    list2.append(value)
```

```

a = len(list1)
b = len(list2)
c = 0
d = 0

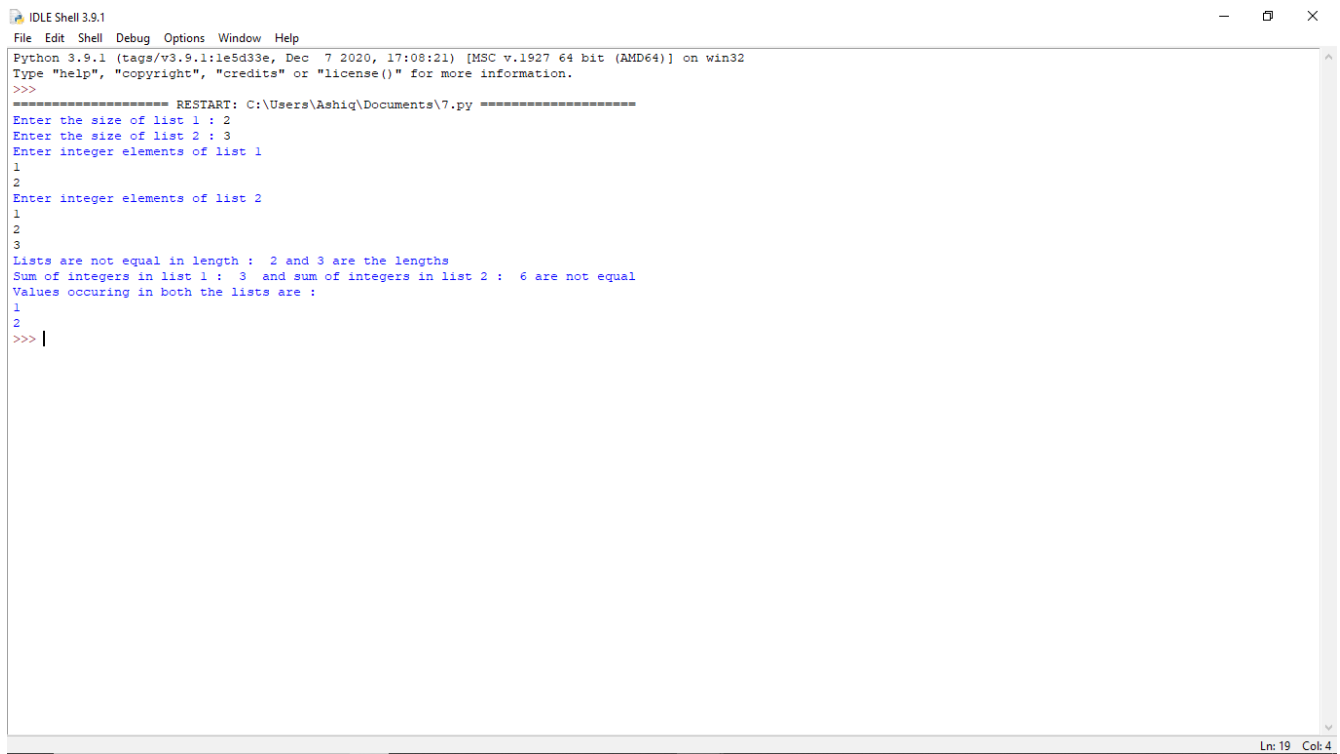
import math
if a == b:
    print("Lists are equal in length",+a)
else:
    print("Lists are not equal in length : ",+a,"and",+b,"are the lengths")
for i in range(0, len(list1)):
    c = c+list1[i]

for i in range(0, len(list2)):
    d = d+list2[i]

if c==d:
    print("Sum of integers are equal in both list : ",+ c)
else:
    print("Sum of integers in list 1 : ",+c ," and sum of integers in list 2 : ",+d , "are not equal")
flag=0
print("Values occuring in both the lists are : ")
for i in list1:
    for j in list2:
        if i==j:
            print(i)
            flag=1
if(flag==0):
    print("No same element occur in both the list ")

```

## Output



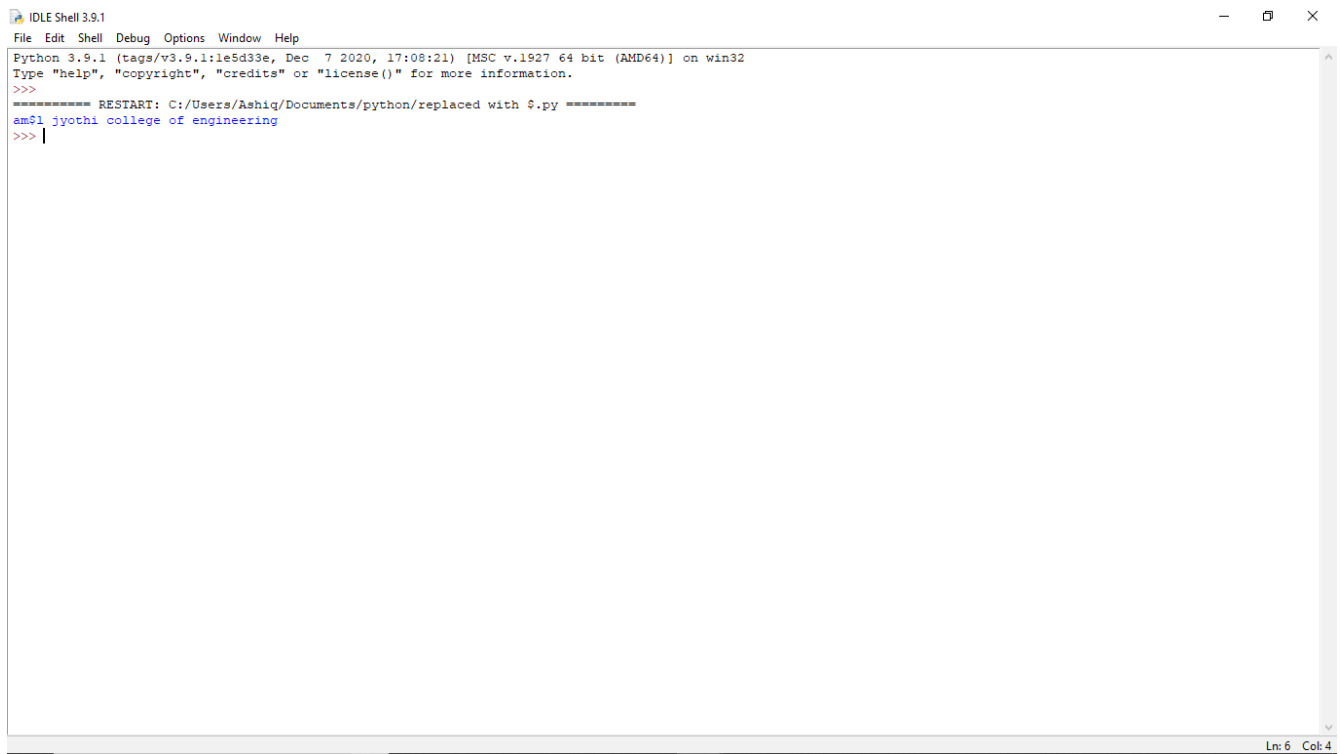
```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Ashiq\Documents\7.py =====
Enter the size of list 1 : 2
Enter the size of list 2 : 3
Enter integer elements of list 1
1
2
Enter integer elements of list 2
1
2
3
Lists are not equal in length : 2 and 3 are the lengths
Sum of integers in list 1 : 3 and sum of integers in list 2 : 6 are not equal
Values occurring in both the lists are :
1
2
>>> |
```

8. Get a string from an input string where all occurrences of first character replaced with '\$', except first character?

### Program

```
def change_char(str1):
    char = str1[0]
    str1 = str1.replace(char, '$')
    str1 = char + str1[1:]
    return str1
print(change_char('amal jyothi college of engineering'))
```

### Output



```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Ashiq/Documents/python/replaced with $.py =====
am$1 jyothi college of engineering
>>> |
```

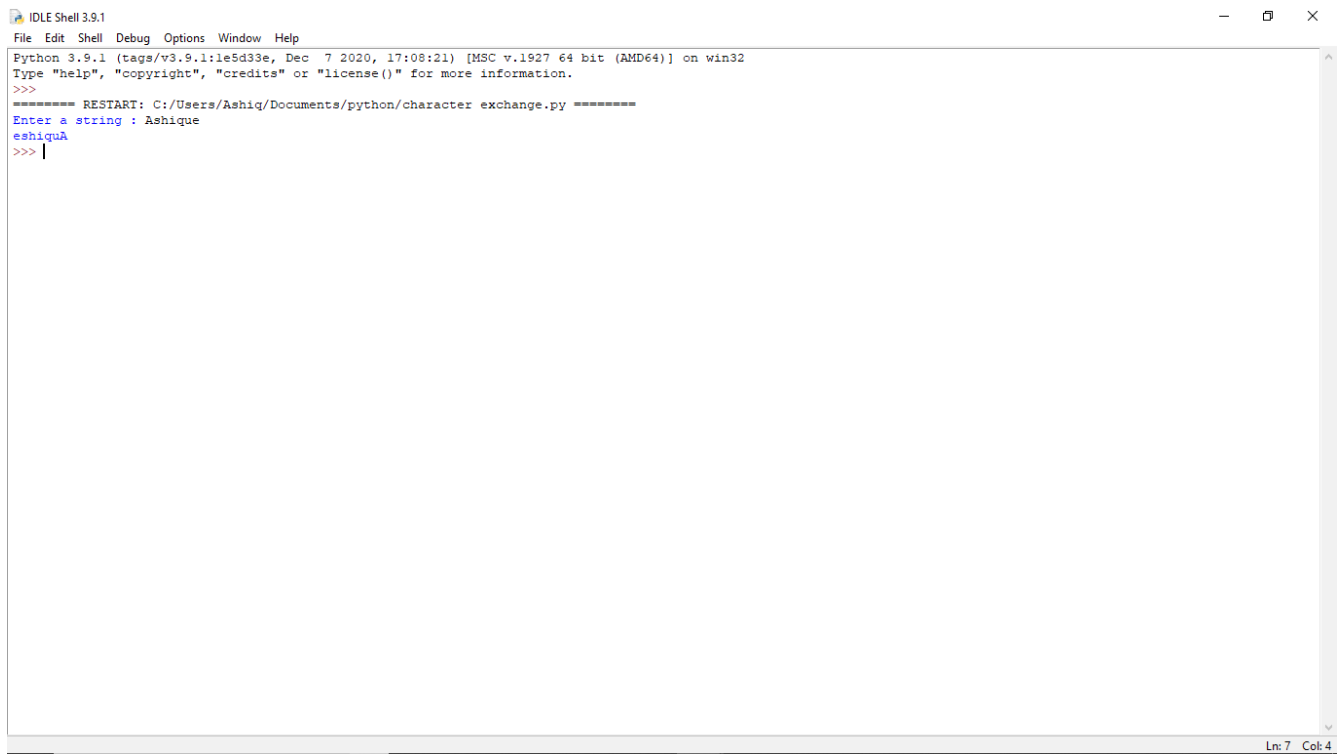
Ln: 6 Col: 4

## 9. Create a string from given string where the first and last characters exchanged

### Program

```
str = input("Enter a string : ")
new_str = str[-1:] + str[1:-1] + str[:1]
print(new_str)
```

### Output



The screenshot shows the IDLE Shell 3.9.1 window. The title bar is 'IDLE Shell 3.9.1'. The menu bar includes 'File', 'Edit', 'Shell', 'Debug', 'Options', 'Window', and 'Help'. The shell text area contains the following text: 'Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32', 'Type "help", "copyright", "credits" or "license()" for more information.', '>>>', '==== RESTART: C:/Users/Ashiq/Documents/python/character exchange.py =====', 'Enter a string : Ashique', 'eshiquA', and '>>> |'. The status bar at the bottom right shows 'Ln: 7 Col: 4'.

```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:/Users/Ashiq/Documents/python/character exchange.py =====
Enter a string : Ashique
eshiquA
>>> |
```

Ln: 7 Col: 4

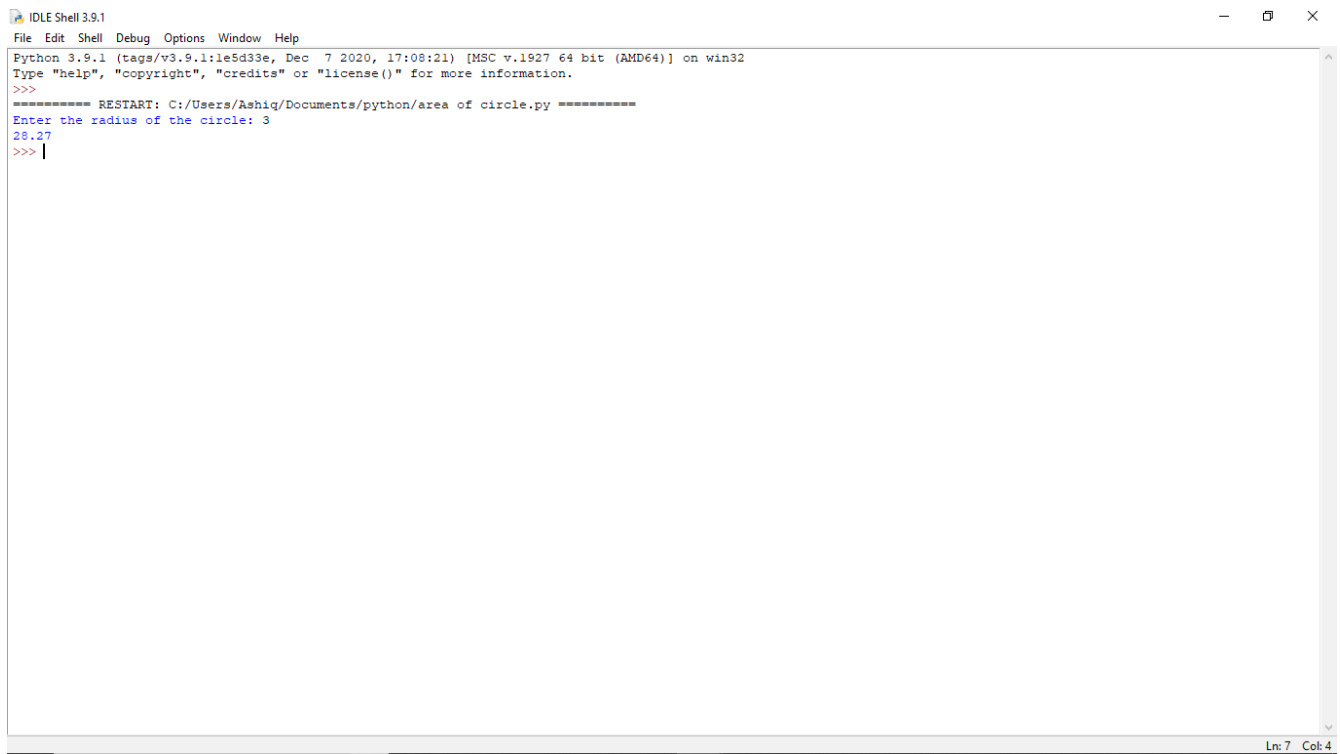
## 10. Accept the radius from user and find area of circle?

### Program

```
import math
r = float(input("Enter the radius of the circle: "))
area = math.pi* r * r
print("%.2f" %area)
```

### Output





```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Ashiq/Documents/python/area of circle.py =====
Enter the radius of the circle: 3
28.27
>>> |
```

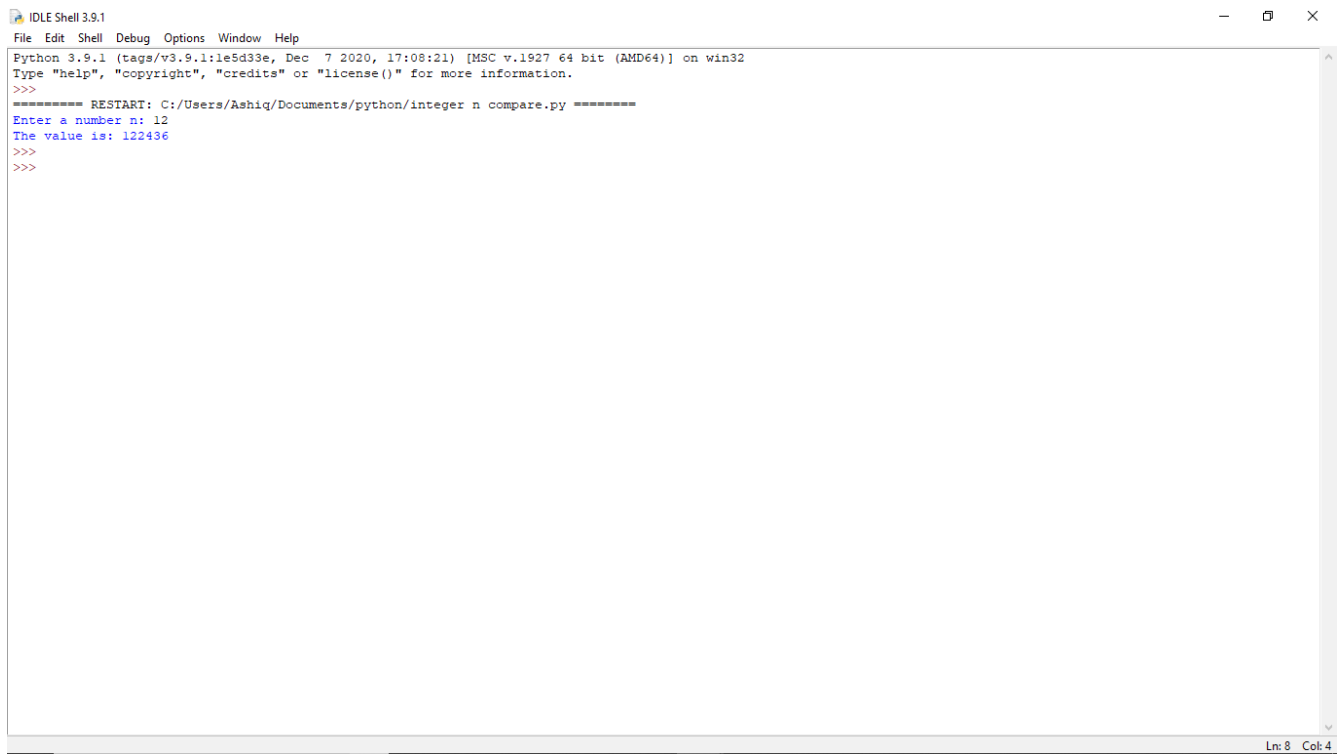
Ln: 7 Col: 4

#### 14. Accept an integer n and compare $n+nn+nnn$ ?

##### Program

```
n=int(input("Enter a number n: "))
temp=str(n)
t1=temp+temp
t2=temp+temp+temp
comp=n+int(t1)+int(t2)
print("The value is:",comp)
```

##### Output



```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Ashiq/Documents/python/integer n compare.py =====
Enter a number n: 12
The value is: 122436
>>>
>>>
```

## 17.Sort dictionary in ascending and descending order?

### Program

```
import operator
d = {1: 2, 3: 4, 4: 3, 2: 1, 0: 0}
print('dictionary : ',d)
s= sorted(d.items(), key=operator.itemgetter(1))
print('ascending order : ',s)
s1= dict( sorted(d.items(), key=operator.itemgetter(1),reverse=True))
print('descending order : ',s1)
```

### Output

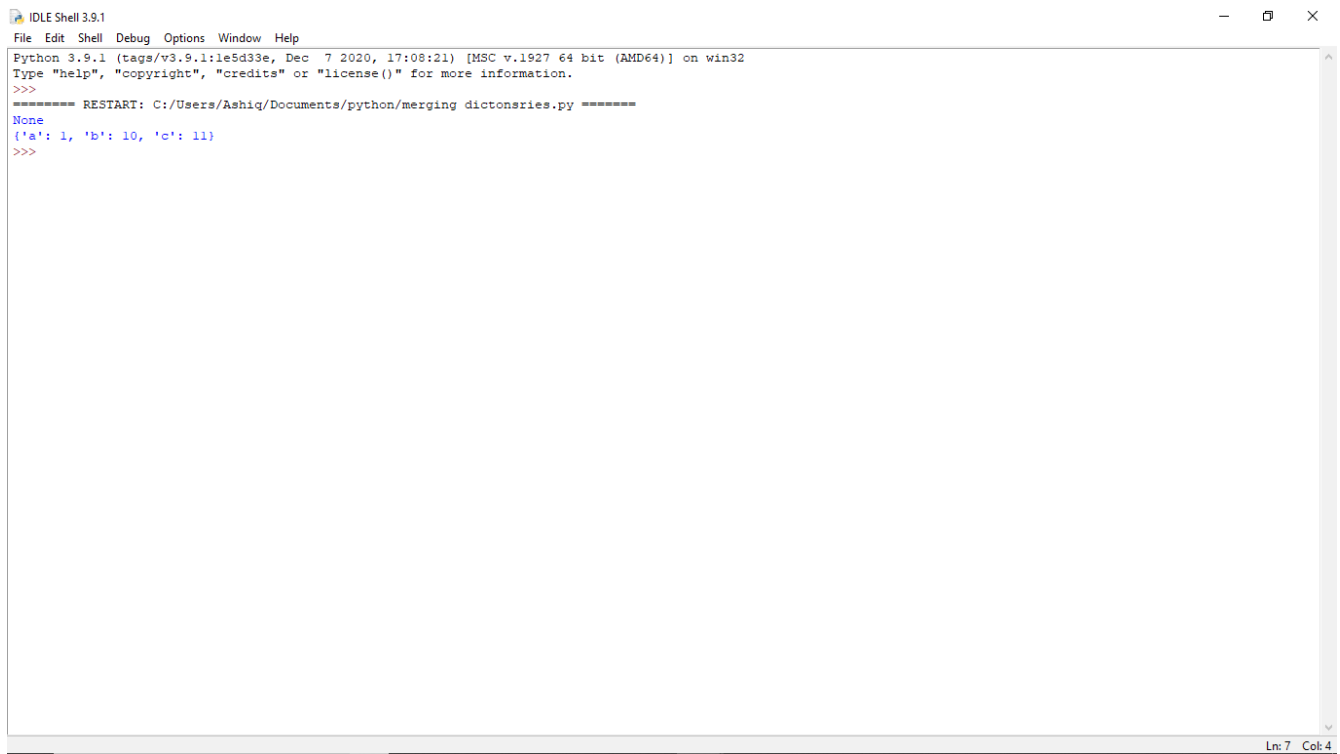
```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Ashiq/Documents/python/Ascending decending.py =====
dictionary : {1: 2, 3: 4, 4: 3, 2: 1, 0: 0}
ascending order : [(0, 0), (2, 1), (1, 2), (4, 3), (3, 4)]
descending order : {3: 4, 4: 3, 1: 2, 2: 1, 0: 0}
>>> |
```

## 18) Merge two dictionaries?

### Program

```
x = {'a': 1, 'b': 2}
y = {'b': 10, 'c': 11}
z = x.update(y)
print(z)
print(x)
```

### Output



```
IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Ashiq/Documents/python/merging dictonsries.py =====
None
{'a': 1, 'b': 10, 'c': 11}
>>>
```

## 19. Find gcd of two numbers?

### Program

```
num1 = int(input("Enter 1st number: "))
num2 = int(input("Enter 2nd number: "))
i = 1
while(i <= num1 and i <= num2):
    if(num1 % i == 0 and num2 % i == 0):
        gcd = i
        i = i + 1
print("GCD is", gcd)
```

### Output

File Edit Shell Debug Options Window Help

Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32

Type "help", "copyright", "credits" or "license()" for more information.

&gt;&gt;&gt;

===== RESTART: C:/Users/Ashiq/Documents/python/gcd.py =====

Enter 1st number: 40

Enter 2nd number: 60

GCD is 20

&gt;&gt;&gt; |