

Python

ASSIGNMENT 4

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ASSIGNMENT BASED ON: WORKING WITH FUNCTION, MODULES AND PACKAGES

ASSIGNMENT 4

SET-A

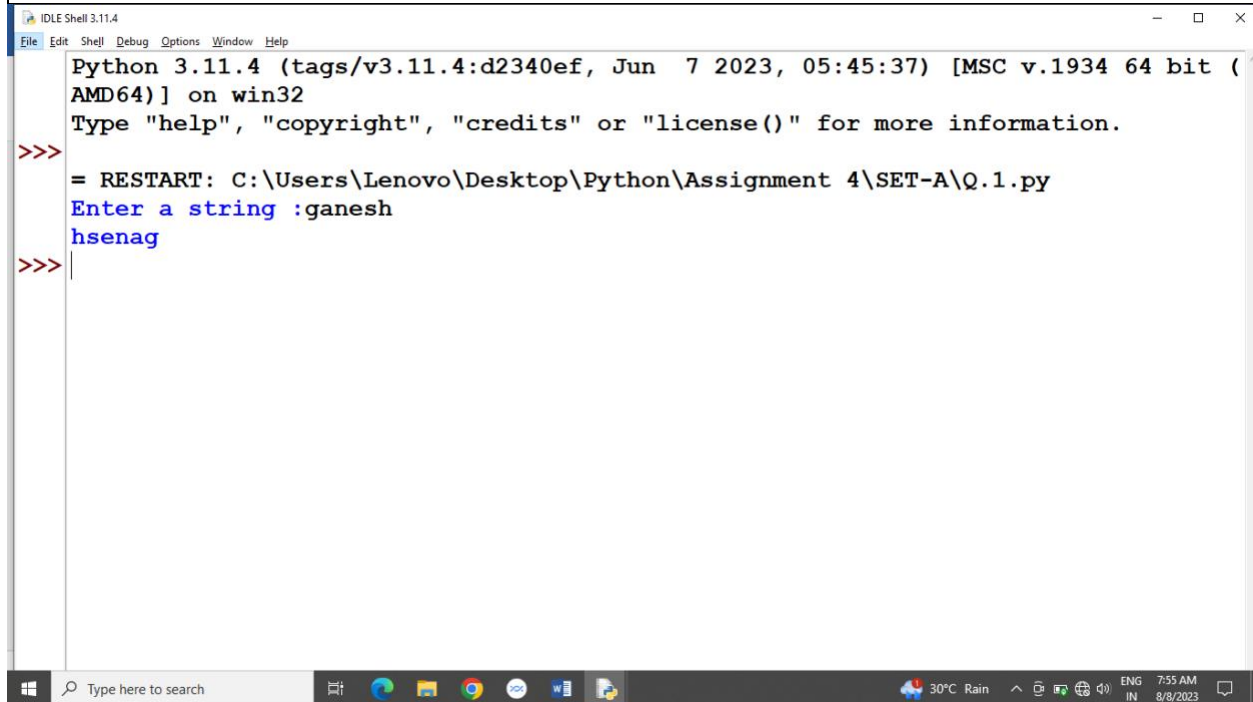
Q.1 Write a recursive function which print string in reverse order.

Ans:

```
def rev(string):  
    str=""  
    for i in string:  
        str=i+str  
    print(str)
```

```
a=str(input("Enter a string :"))  
rev(a)
```

Output:



```
IDLE Shell 3.11.4  
File Edit Shell Debug Options Window Help  
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-A\Q.1.py  
Enter a string :ganesh  
hsenag  
>>>
```

ASSIGNMENT 4

SET-A

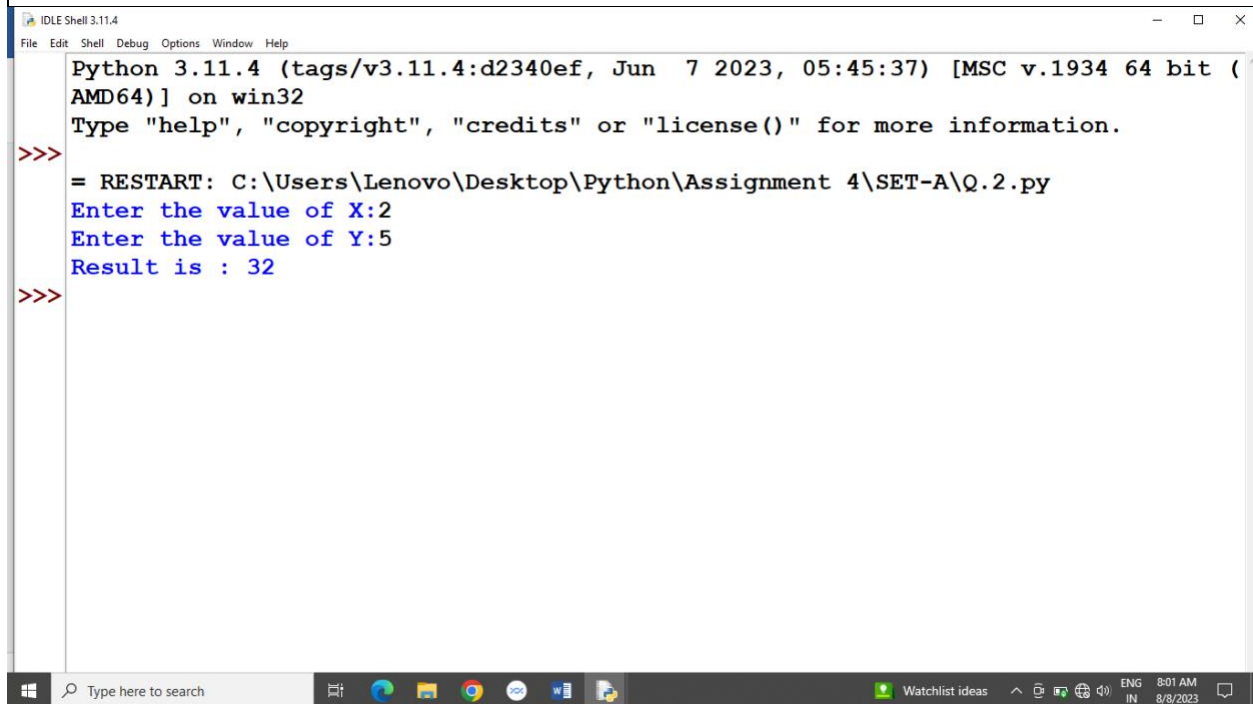
Q.2 Write a python script using function to calculate XY

Ans:

```
def fun(a,b):  
    res=pow(a,b)  
    print("Result is :",res)
```

```
x=int(input("Enter the value of X:"))  
y=int(input("Enter the value of Y:"))  
fun(x,y)
```

Output:



```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-A\Q.2.py  
Enter the value of X:2  
Enter the value of Y:5  
Result is : 32  
>>>
```

ASSIGNMENT 4

SET-A

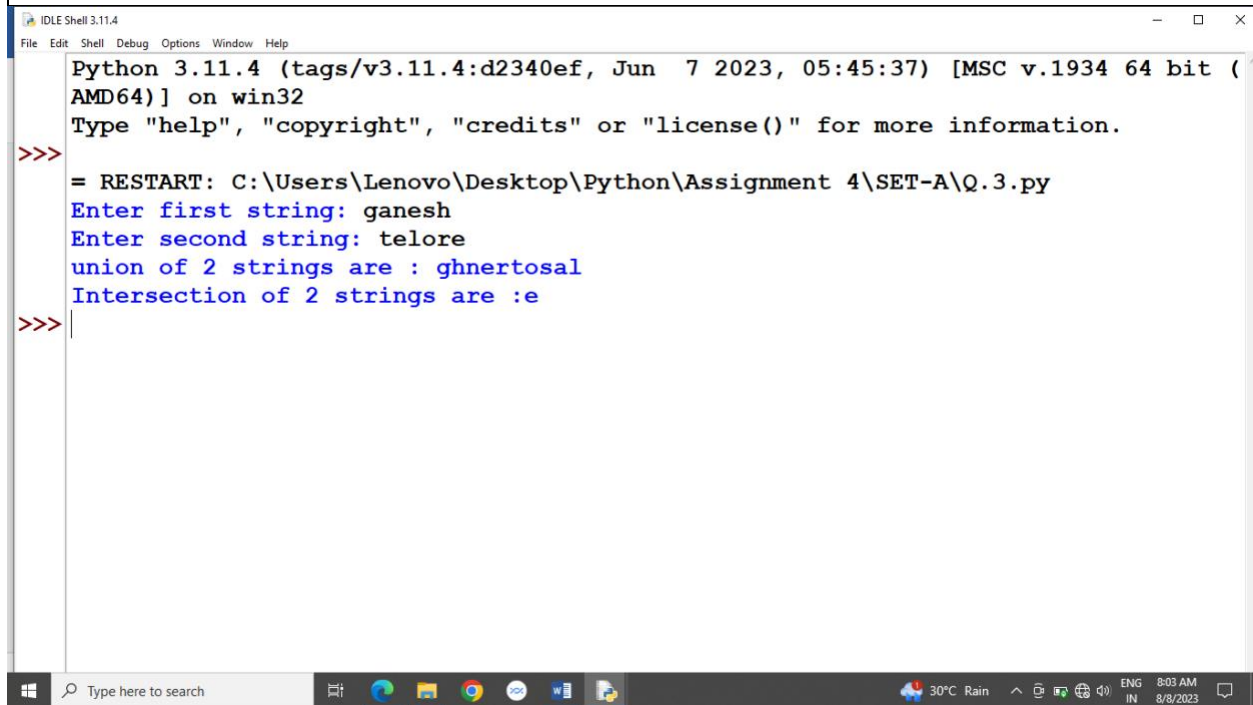
Q.3 Define a function that accept two strings as input and find union and intersection of them.

Ans:

```
def stroperation():
    x=str(input("Enter first string: "))
    y=str(input("Enter second string: "))
    a=set(x)
    b=set(y)
    uniond=a.union(b)
    res="".join(uniond)
    print("union of 2 strings are :",res)
    interd=set(x) & set(y)
    res2="".join(sorted(interd))
    print("Intersection of 2 strings are :"+str(res2))
```

stroperation()

Output:



```
IDLE Shell 3.11.4
File Edit Shell Debug Options Window Help
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-A\Q.3.py
Enter first string: ganesh
Enter second string: telore
union of 2 strings are : ghnertosal
Intersection of 2 strings are : e
>>>
```

ASSIGNMENT 4

SET-A

Q.4 Write a recursive function to calculate sum of digits of a given input number.

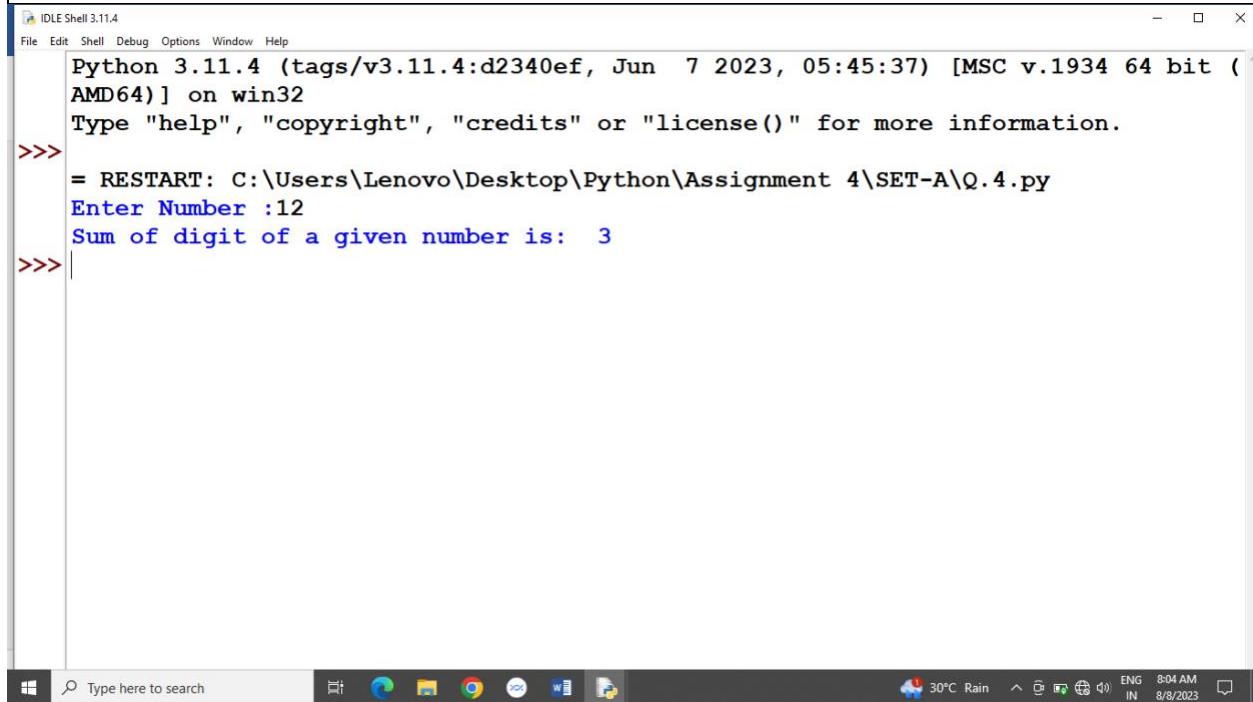
Ans:

```
def sumofdigit():
    a=int(input("Enter Number :"))
    sum=0
    while(a!=0):
        sum=sum+(a%10)
        a=a//10

    print("Sum of digit of a given number is: ",sum)

sumofdigit()
```

Output:



The screenshot shows a Python IDLE Shell window with the following content:

```
IDLE Shell 3.11.4
File Edit Shell Debug Options Window Help
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-A\Q.4.py
Enter Number :12
Sum of digit of a given number is: 3
>>>
```

The taskbar at the bottom shows the Windows Start button, a search bar, and several application icons. The system tray on the right indicates a temperature of 30°C, rain, and the date/time as 8:04 AM on 8/8/2023.

ASSIGNMENT 4

SET-A

Q.5 Write generator function which generate even numbers up to n

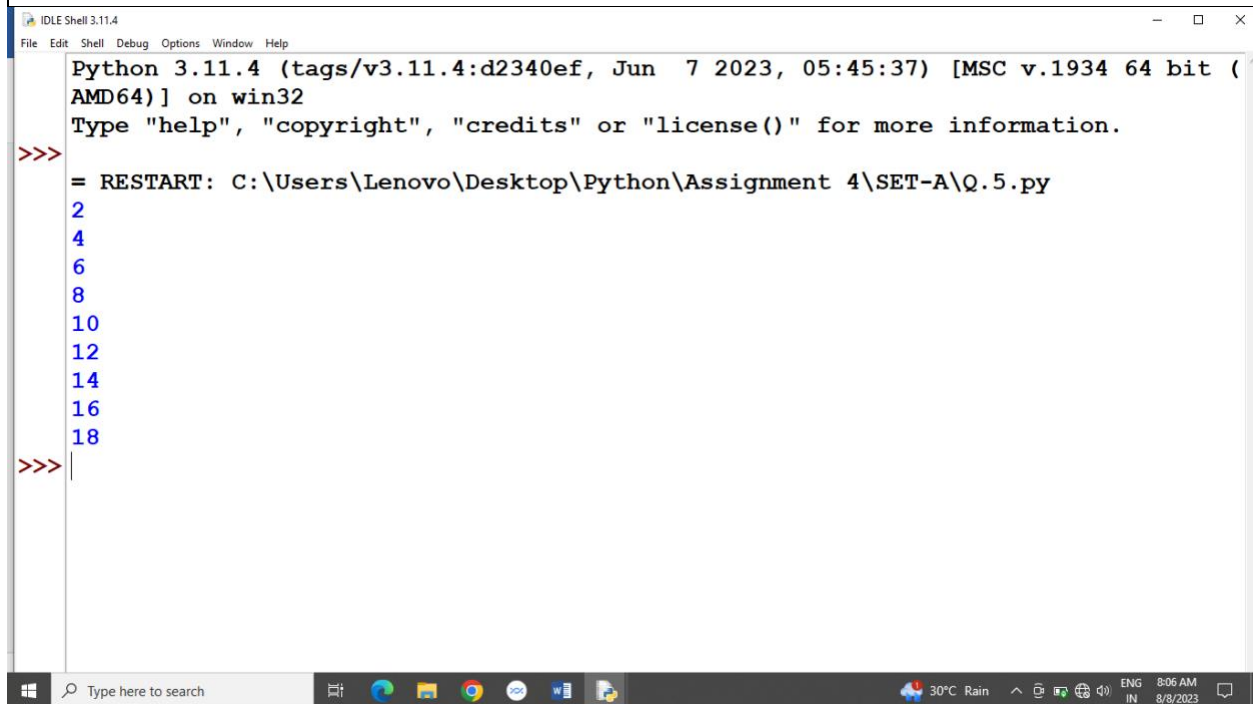
Ans:

```
def evengenerator(n):  
    for i in range(2,n):  
        if(i%2==0):  
            print(i)
```

n=20

evengenerator(n)

Output:



The screenshot shows a Python IDLE Shell window titled 'IDLE Shell 3.11.4'. The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell displays the following text:

```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-A\Q.5.py  
2  
4  
6  
8  
10  
12  
14  
16  
18  
>>>
```

The output shows the even numbers 2, 4, 6, 8, 10, 12, 14, 16, and 18, which are generated by the function for n=20. The Windows taskbar at the bottom shows the date and time as 8:06 AM on 8/8/2023, along with weather information (30°C Rain) and system icons.

ASSIGNMENT 4

SET-B

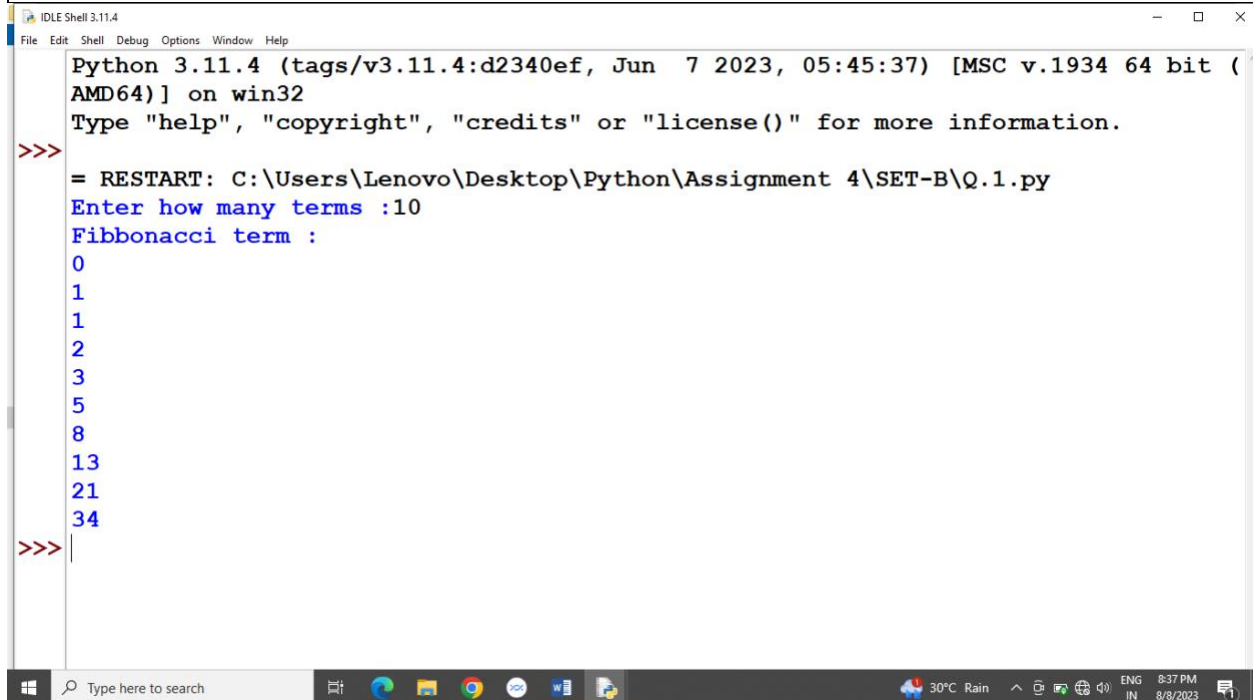
Q.1 Write a python script to generate Fibonacci terms using generator function.

Ans:

```
def generator():
    terms=int(input("Enter how many terms :"))
    n1=0
    n2=1
    count=0
    if terms<=0:
        print("Limit should be Positive")
    elif terms==1:
        print("Fibonacci term :",n1)
    else:
        print("Fibonacci term :")
        while(count<terms):
            print(n1)
            n=n1+n2
            n1=n2
            n2=n
            count=count+1
```

generator()

Output:



The screenshot shows a Python 3.11.4 IDE window titled 'IDLE Shell 3.11.4'. The code being executed is the same as provided in the previous blocks. The output in the shell is as follows:

```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-B\Q.1.py
Enter how many terms :10
Fibonacci term :
0
1
1
2
3
5
8
13
21
34
>>>
```

The Windows taskbar at the bottom shows the system clock as 8:37 PM on 8/8/2023, with weather information for 30°C Rain.

ASSIGNMENT 4

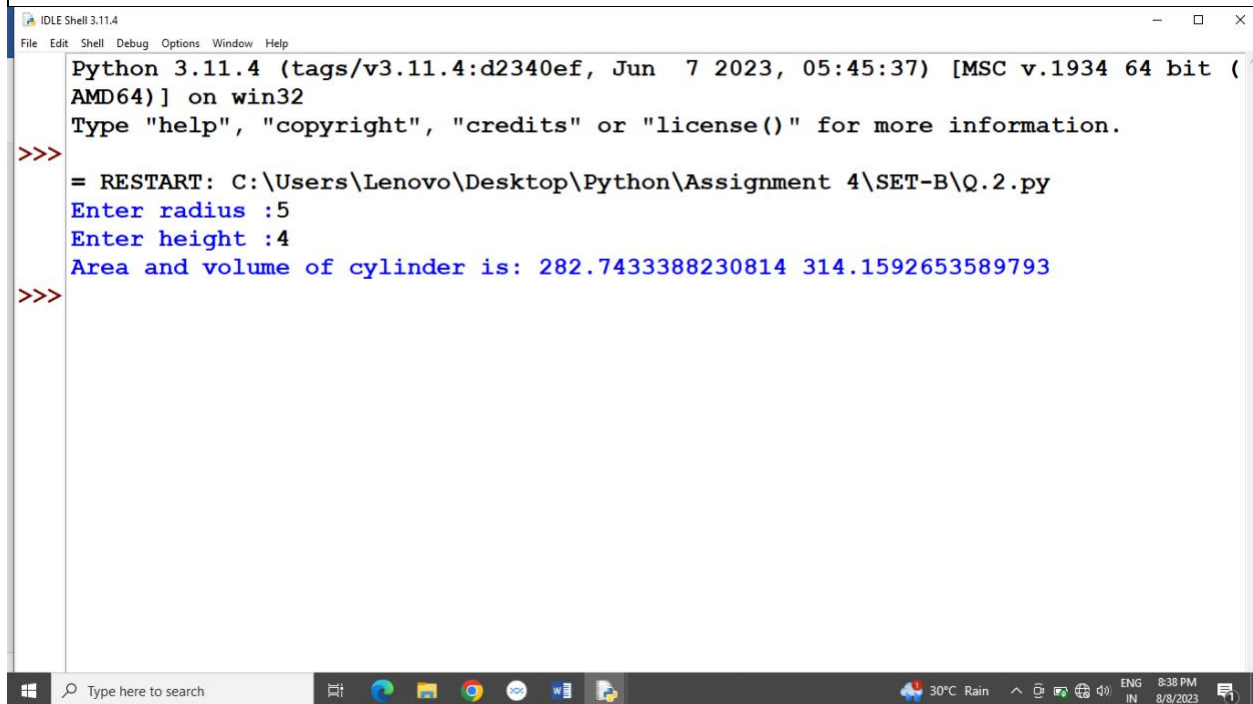
SET-B

Q.2 Write python script using package to calculate area and volume of cylinder and cuboids.

Ans:

```
import math
r=float(input("Enter radius :"))
h=float(input("Enter height :"))
area=((2*math.pi*r)*h)+((math.pi*r**2)*2)
volume=math.pi*r*r*h
print("Area and volume of cylinder is:",area,volume)
```

Output:



The screenshot shows a Python IDLE Shell window titled 'IDLE Shell 3.11.4'. The window contains the following text:

```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-B\Q.2.py
Enter radius :5
Enter height :4
Area and volume of cylinder is: 282.7433388230814 314.1592653589793
>>>
```

The taskbar at the bottom shows the Windows Start button, a search bar, and several application icons. The system tray on the right indicates a temperature of 30°C, rain, and the date/time as 8:38 PM on 8/8/2023.

ASSIGNMENT 4

SET-B

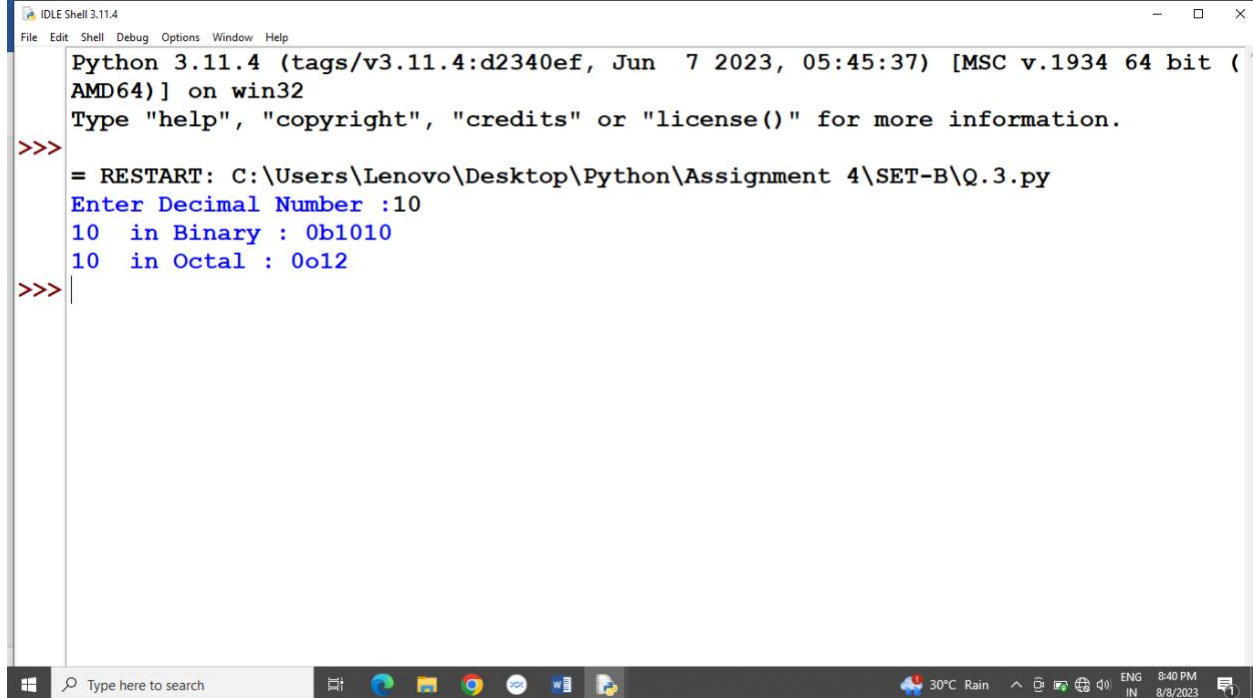
Q.3 Write a python script to accept decimal number and convert it to binary and octal number using function.

Ans:

```
def convertdec():  
    decimal=int(input("Enter Decimal Number :"))  
    print(decimal," in Binary :",bin(decimal))  
    print(decimal," in Octal :",oct(decimal))
```

```
convertdec()
```

Output:



The screenshot shows a Python IDLE Shell window titled "IDLE Shell 3.11.4". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell displays the following text:

```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-B\Q.3.py  
Enter Decimal Number :10  
10 in Binary : 0b1010  
10 in Octal : 0o12  
>>>
```

The Windows taskbar is visible at the bottom, showing the search bar, taskbar icons, and system tray with a temperature of 30°C, rain forecast, and date/time 8:40 PM on 8/8/2023.

ASSIGNMENT 4

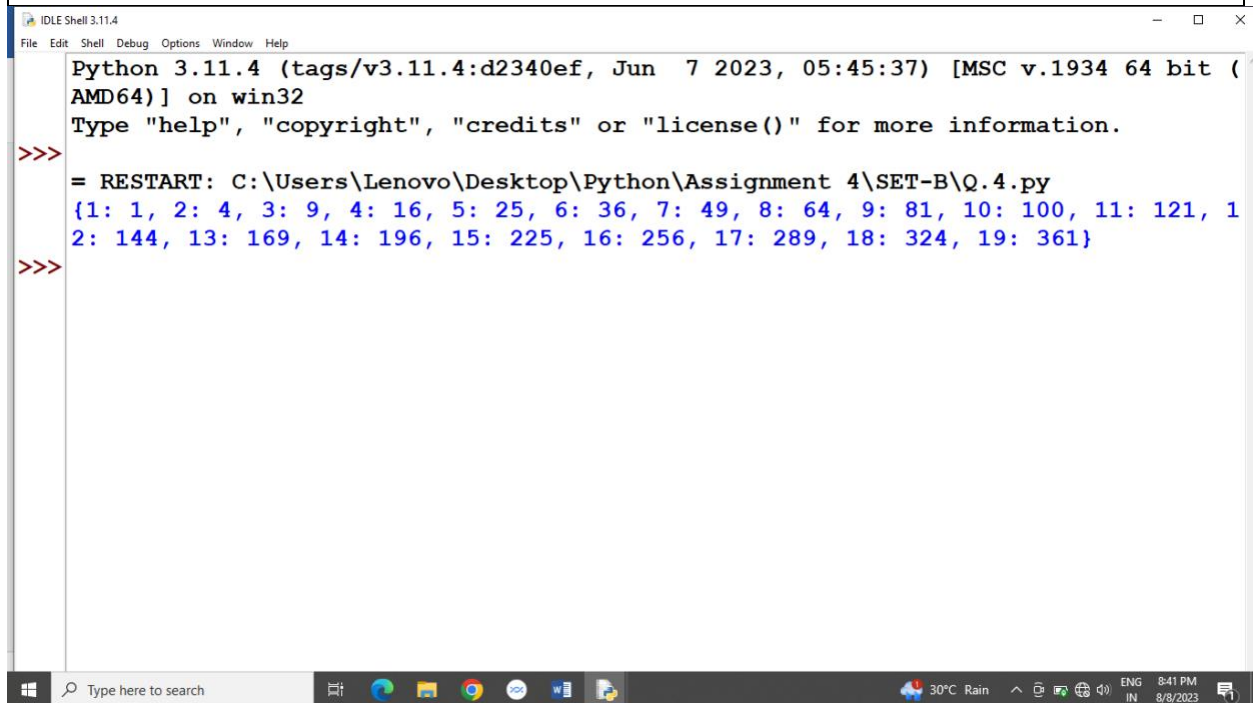
SET-B

Q.4 Write a function which print a dictionary where the keys are numbers between 1 and 20 (both included) and the values are square of keys.

Ans:

```
dic1=dict()
for n in range(1,20):
    dic1[n]=n**2
print(dic1)
```

Output:



```
IDLE Shell 3.11.4
File Edit Shell Debug Options Window Help

Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-B\Q.4.py
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225, 16: 256, 17: 289, 18: 324, 19: 361}
>>>
```

ASSIGNMENT 4

SET-B

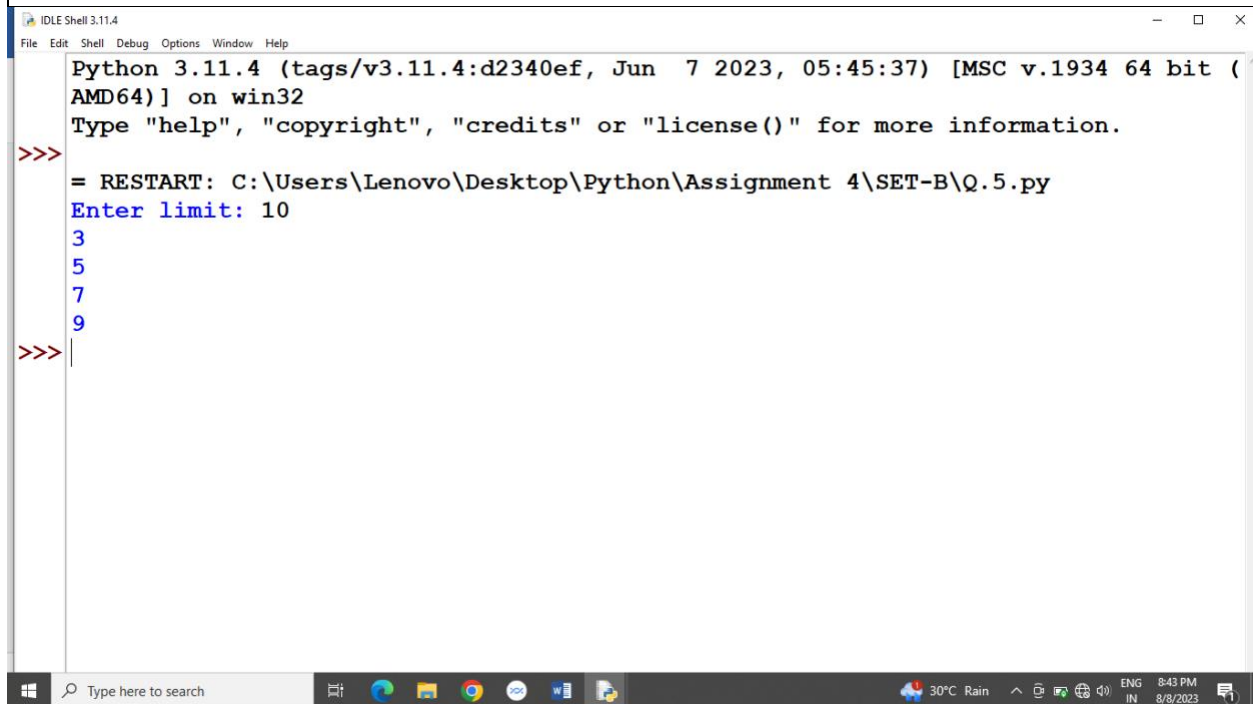
Q.5 Write a generator function which generates prime numbers up to n.

Ans:

```
def primenum():  
    n=int(input("Enter limit: "))  
    for x in range(2,n):  
        if(x%2!=0):  
            print(x)
```

primenum()

Output:



```
IDLE Shell 3.11.4  
File Edit Shell Debug Options Window Help  
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-B\Q.5.py  
Enter limit: 10  
3  
5  
7  
9  
>>>
```

The screenshot shows a Windows taskbar at the bottom with the system clock at 8:43 PM on 8/8/2023. The taskbar includes icons for the Start menu, search, and various applications like Edge, File Explorer, and the IDLE Shell. The IDLE Shell window is the active application, displaying the Python prompt and the execution of the code from the assignment. The output shows the prime numbers 3, 5, 7, and 9 for the input limit of 10.

ASSIGNMENT 4

SET-C

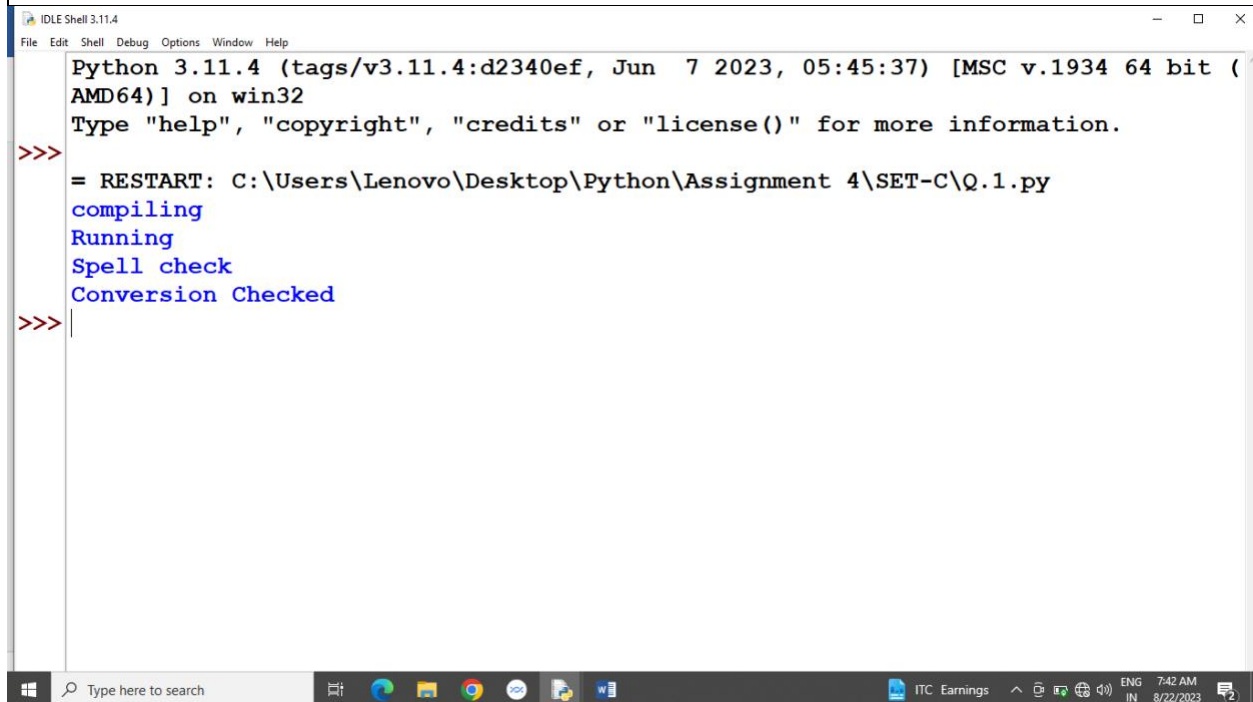
Q.1 Write a program to illustrate function duck typing.

Ans:

```
class python:
    def run(self):
        print("compiling")
        print("Running")
        print("Spell check")
        print("Conversion Checked")
class run2:
    def code(self,ide):
        ide.run()

ide=python()
desk=run2()
desk.code(ide)
```

Output:



```
IDLE Shell 3.11.4
File Edit Shell Debug Options Window Help
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Lenovo\Desktop\Python\Assignment 4\SET-C\Q.1.py
compiling
Running
Spell check
Conversion Checked
>>>
```