

# Python

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## ASSIGNMENT 5

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ROLL NO:  
CLASS: TYBBACA  
GUIDE: PROF.LANDE R.D  
ASSIGNMENT BASED ON:

## ASSIGNMENT 5

### SET-A

Q.1 Write a Python Program to Accept, Delete and Display students details such as Roll.No, Name, Marks in three subject, using Classes. Also display percentage of each student.

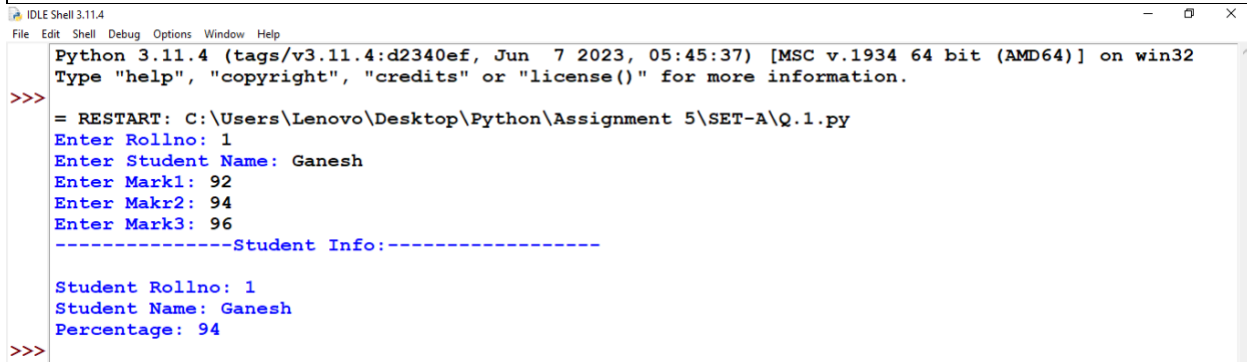
**Ans:**

```
class student:
    rollNo=None
    name=None
    mark1=None
    mark2=None
    mark3=None
    def acceptdata(self,a,b,c,d,e):
        self.rollNo=a
        self.name=b
        self.mark1=c
        self.mark2=d
        self.mark3=e

    def displaydata(self):
        percentage=self.mark1+self.mark2+self.mark3
        print("-----Student Info:-----")
        print(f" \nStudent Rollno: {self.rollNo} \nStudent Name: {self.name} \nPercentage:
{percentage//3}")

s=student()
rollNo=int(input("Enter Rollno: "))
name=input(str("Enter Student Name: "))
mark1=int(input("Enter Mark1: "))
mark2=int(input("Enter Makr2: "))
mark3=int(input("Enter Mark3: "))
s.acceptdata(rollNo,name,mark1,mark2,mark3);
s.displaydata()
```

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 5\SET-A\Q.1.py
Enter Rollno: 1
Enter Student Name: Ganesh
Enter Mark1: 92
Enter Makr2: 94
Enter Mark3: 96
-----Student Info:-----

Student Rollno: 1
Student Name: Ganesh
Percentage: 94
>>>
```

## ASSIGNMENT 5

### SET-A

Q.2 Write a Python program that defines a class named circle with attributes radius and center, where center is a point object and radius is number. Accept center and radius from user. Instantiate a circle object that represents a circle with its center and radius as accepted input.

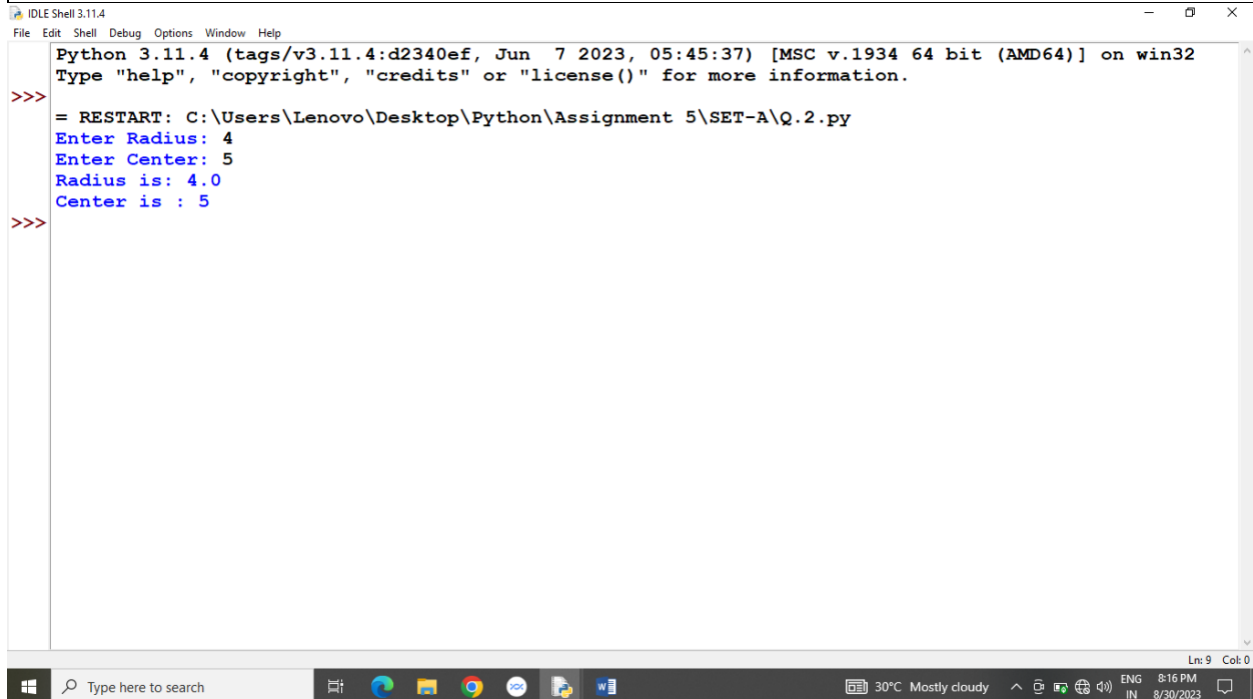
#### Ans:

```
class circle:
    radius:None
    center:None
    def __init__(self,a,b):
        self.radius=a
        self.center=b

    def displaycircle(self):
        print(f"Radius is: {self.radius}\nCenter is : {self.center}")

radius=float(input("Enter Radius: "))
center=str(input("Enter Center: "))
c=circle(radius,center)
c.displaycircle()
```

#### Output:



The screenshot shows a Python IDE window titled "IDLE Shell 3.11.4". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell displays the following 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 5\SET-A\Q.2.py
Enter Radius: 4
Enter Center: 5
Radius is: 4.0
Center is : 5
>>>
```

The Windows taskbar at the bottom shows the system clock as 8:16 PM on 8/30/2023, along with weather information (30°C, Mostly cloudy) and various system icons.

## ASSIGNMENT 5

### SET-A

Q.3 Write a Python class which has two methods get\_String and print\_String. get\_String accept a string from the user and print\_String print the string in upper case. Further modify the program to reverse a string word by word and print it in lower case.

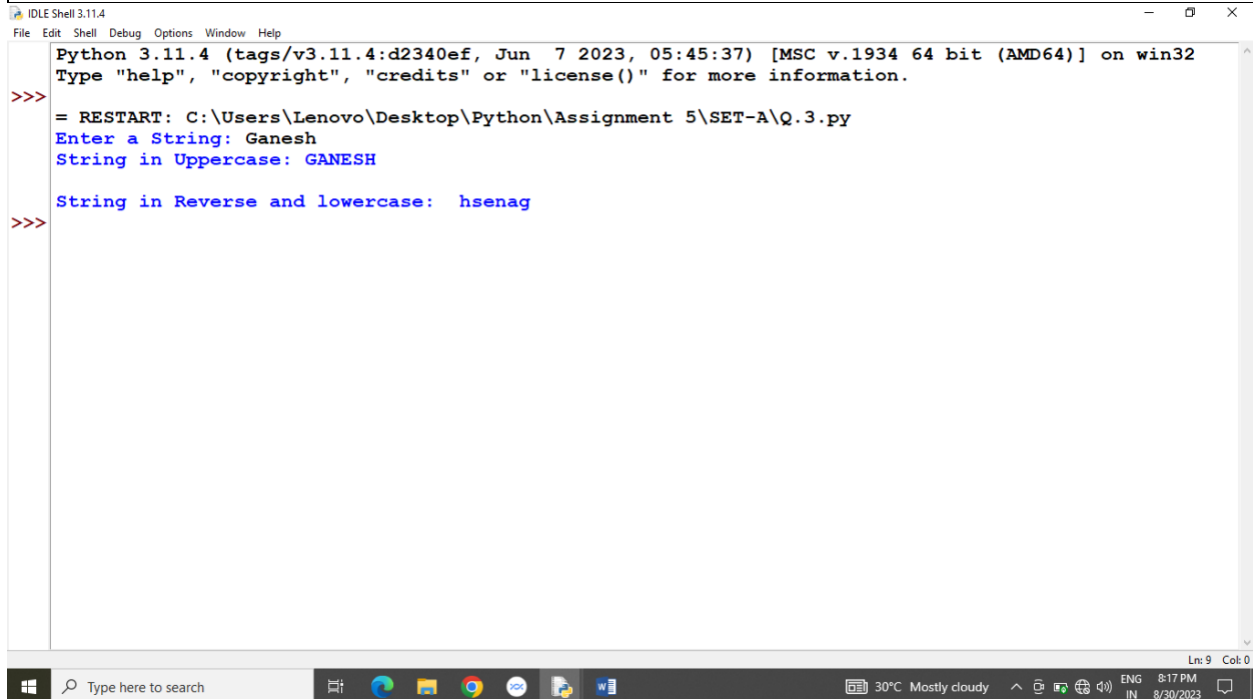
**Ans:**

```
class string:
    def get_String(self,s):
        self.string=s

    def print_String(self):
        print(f"String in Uppercase: {self.string.upper()}")
        strlow=self.string.lower()
        strev=strlow[::-1]
        print("\nString in Reverse and lowercase: ",strev)

s=string()
string=string(input("Enter a String: "))
s.get_String(string)
s.print_String()
```

**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 5\SET-A\Q.3.py
Enter a String: Ganesh
String in Uppercase: GANESH
String in Reverse and lowercase: hsenag
>>>
```

Ln: 9 Col: 0

30°C Mostly cloudy 8:17 PM 8/30/2023

## ASSIGNMENT 5

### SET-A

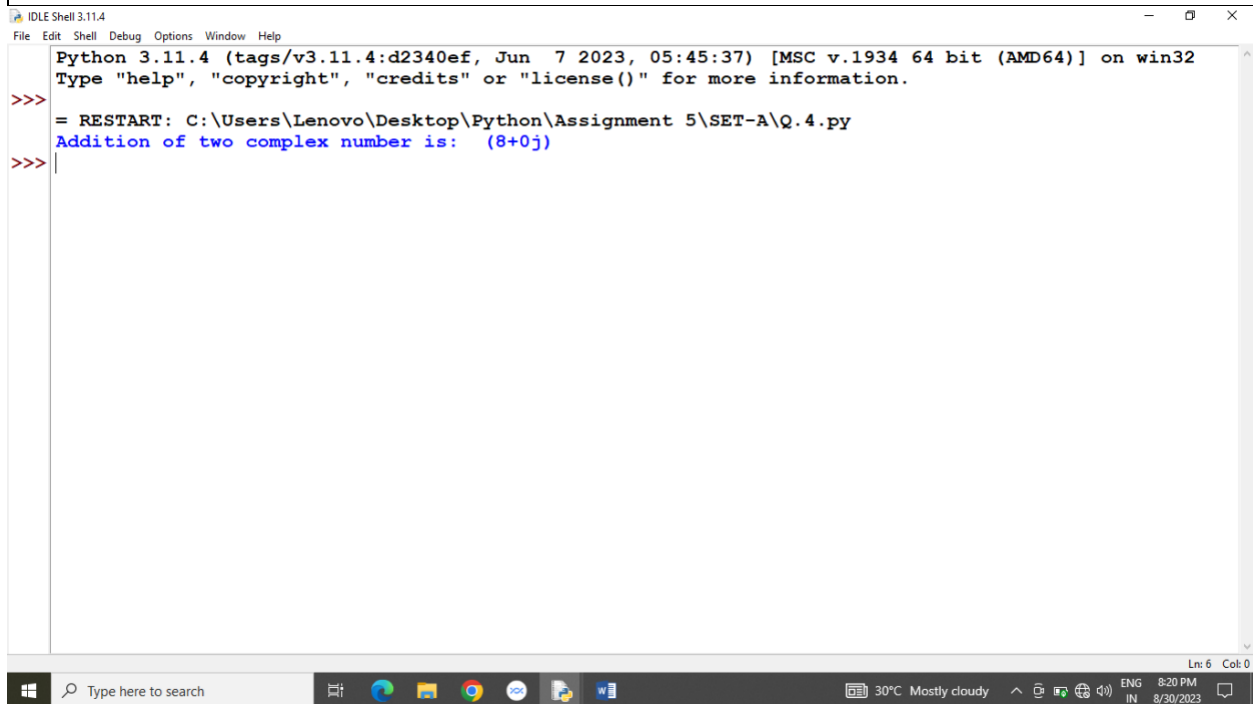
Q.4 Write Python class to perform addition of two complex numbers using binary + operator overloading.

**Ans:**

```
class opoverload:
    def __init__(self,a):
        self.a=a
    def __add__(self,other):
        n1=complex(self.a)
        n2=complex(other.a)
        return n1+n2
```

```
obj=opoverload(3)
obj1=opoverload(5)
res=obj+obj1
print(f"Addition of two complex number is: ",res)
```

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 5\SET-A\Q.4.py
Addition of two complex number is: (8+0j)
>>>
```

## ASSIGNMENT 5

### SET-B

Q.1 Define a class named Rectangle which can be constructed by a length and width. The Rectangle class has a method which can compute the area and volume.

**Ans:**

class Rectangle:

```
def __init__(self,length,width,height):
```

```
    self.length=length
```

```
    self.width=width
```

```
    self.height=height
```

```
def area(self):
```

```
    res=self.length*self.width
```

```
    print(f"Area of Rectangle: {res}")
```

```
def volume(self):
```

```
    res=self.length*self.width*self.height
```

```
    print(f"Volume of a Rectangle : {res}")
```

```
l=int(input("Enter length: "))
```

```
w=int(input("Enter width: "))
```

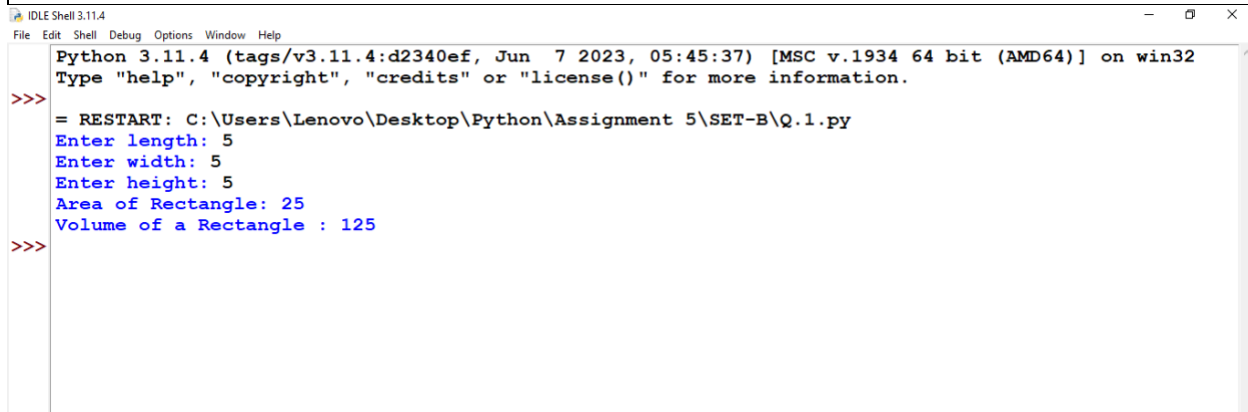
```
h=int(input("Enter height: "))
```

```
obj=Rectangle(l,w,h)
```

```
obj.area()
```

```
obj.volume()
```

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 5\SET-B\Q.1.py
Enter length: 5
Enter width: 5
Enter height: 5
Area of Rectangle: 25
Volume of a Rectangle : 125
>>>
```

## ASSIGNMENT 5

### SET-B

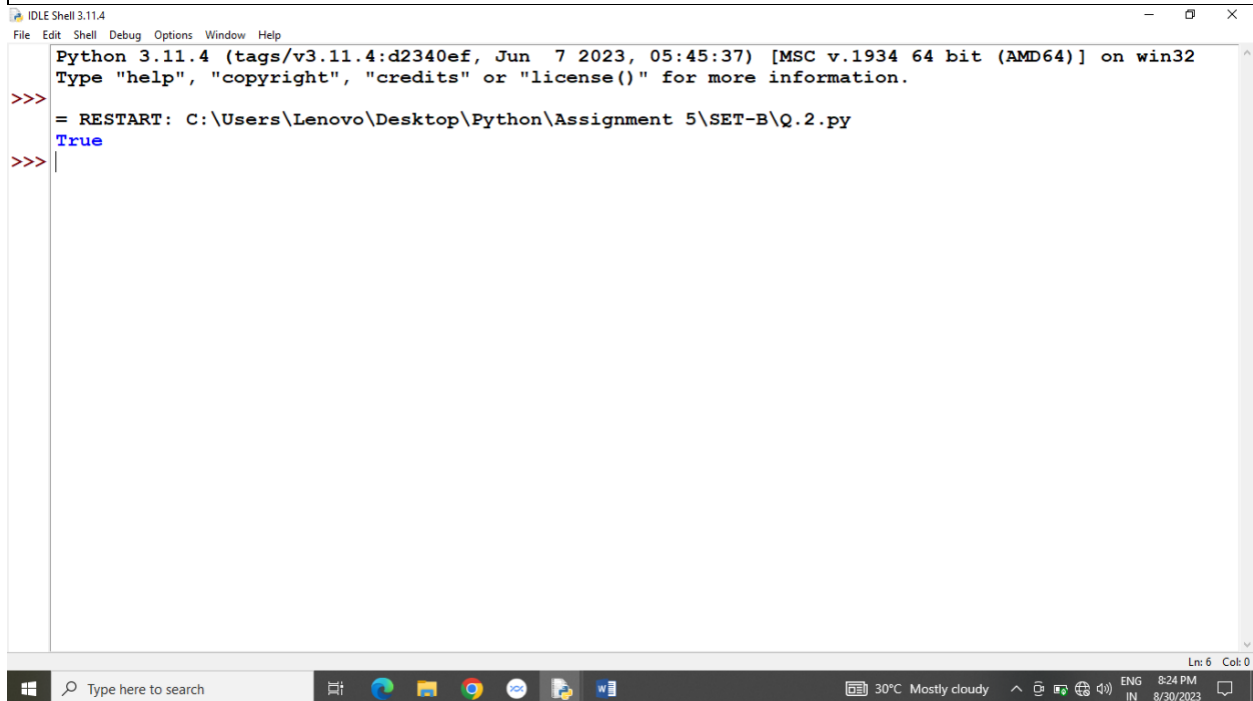
Q.2 Write a function named `pt_in_circle` that takes a circle and a point and returns true if point lies on the boundry of circle.

**Ans:**

```
def pt_in_circle(circlex,circley,rad,x,y):  
    if((x-circlex)*(x-circlex)+(y-circley)*(y-circley)<=rad*rad):  
        return True  
    else:  
        return False
```

```
x=1  
y=1  
circlex=0  
circley=1  
rad=2  
if(pt_in_circle(circlex,circley,rad,x,y)):  
    print("True")  
else:  
    print("False")
```

Output:



The screenshot shows a Windows desktop environment. At the top, there is a window titled "IDLE Shell 3.11.4" with a menu bar (File, Edit, Shell, Debug, Options, Window, Help). The shell displays the output of a Python script, showing the function definition and the execution of the `pt_in_circle` function, which returns `True`. Below the shell window, the Windows taskbar is visible, showing the Start button, a search bar, and several application icons (Task View, Edge, File Explorer, Chrome, VS Code, and Word). The system tray on the right shows the date and time as 8:24 PM on 8/30/2023, along with icons for network, volume, and battery.

```
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 5\SET-B\Q.2.py  
True  
>>>
```

## ASSIGNMENT 5

### SET-B

Q.3 Write a Python Program to Create a Class Set and Get All Possible Subsets from a Set of Distinct Integers.

**Ans:**

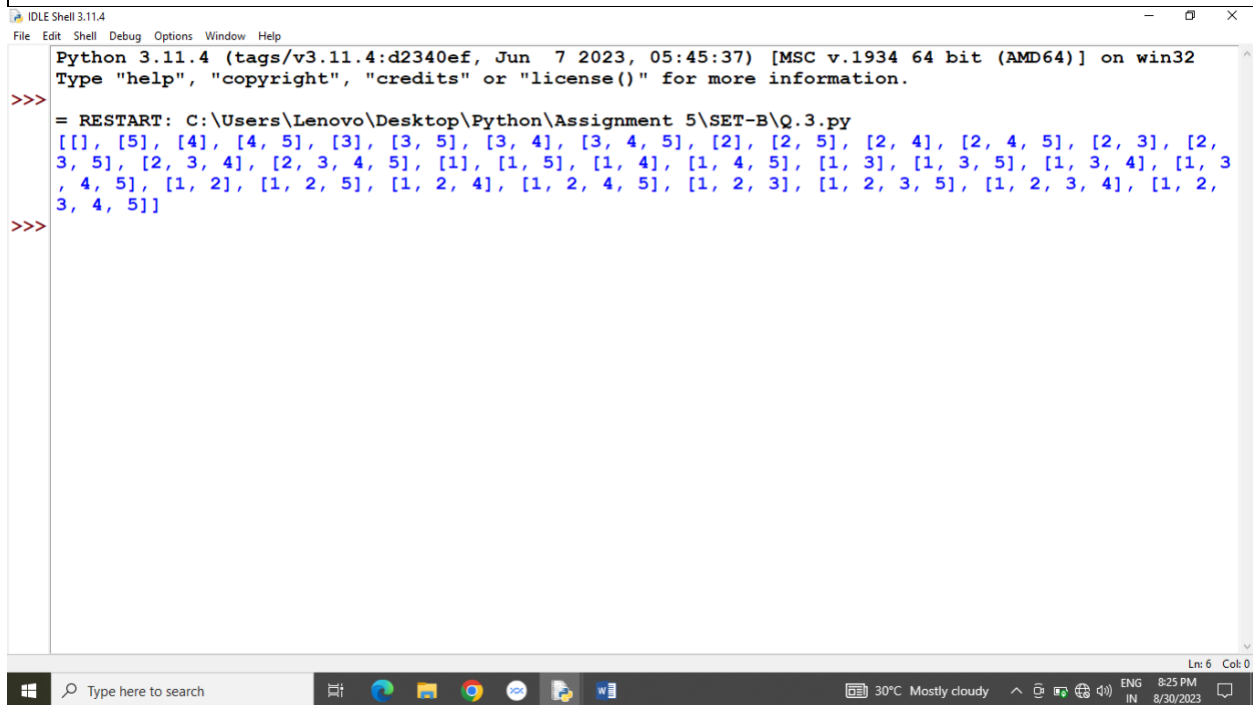
class Set:

```
def get_subsets(self,subset):  
    return self.recursion([],sorted(subset))
```

```
def recursion(self,c,subset):  
    if subset:  
        return self.recursion(c, subset[1:])+ self.recursion(c+[subset[0]], subset[1:])  
    return [c]
```

```
set1=set([1,2,3,4,5])  
obj=Set()  
print(obj.get_subsets(set1))
```

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 5\SET-B\Q.3.py  
[[], [5], [4], [4, 5], [3], [3, 5], [3, 4], [3, 4, 5], [2], [2, 5], [2, 4], [2, 4, 5], [2, 3], [2, 3, 5], [2, 3, 4], [2, 3, 4, 5], [1], [1, 5], [1, 4], [1, 4, 5], [1, 3], [1, 3, 5], [1, 3, 4], [1, 3, 4, 5], [1, 2], [1, 2, 5], [1, 2, 4], [1, 2, 4, 5], [1, 2, 3], [1, 2, 3, 5], [1, 2, 3, 4], [1, 2, 3, 4, 5]]  
>>>
```

The output displays all possible subsets of the set {1, 2, 3, 4, 5}, including the empty set and the set itself, arranged in a sorted order.



## ASSIGNMENT 5

### SET-B

Q.4 Write a python class to accept a string and number n from user and display n repetition of strings using by overloading \* operator.

**Ans:**

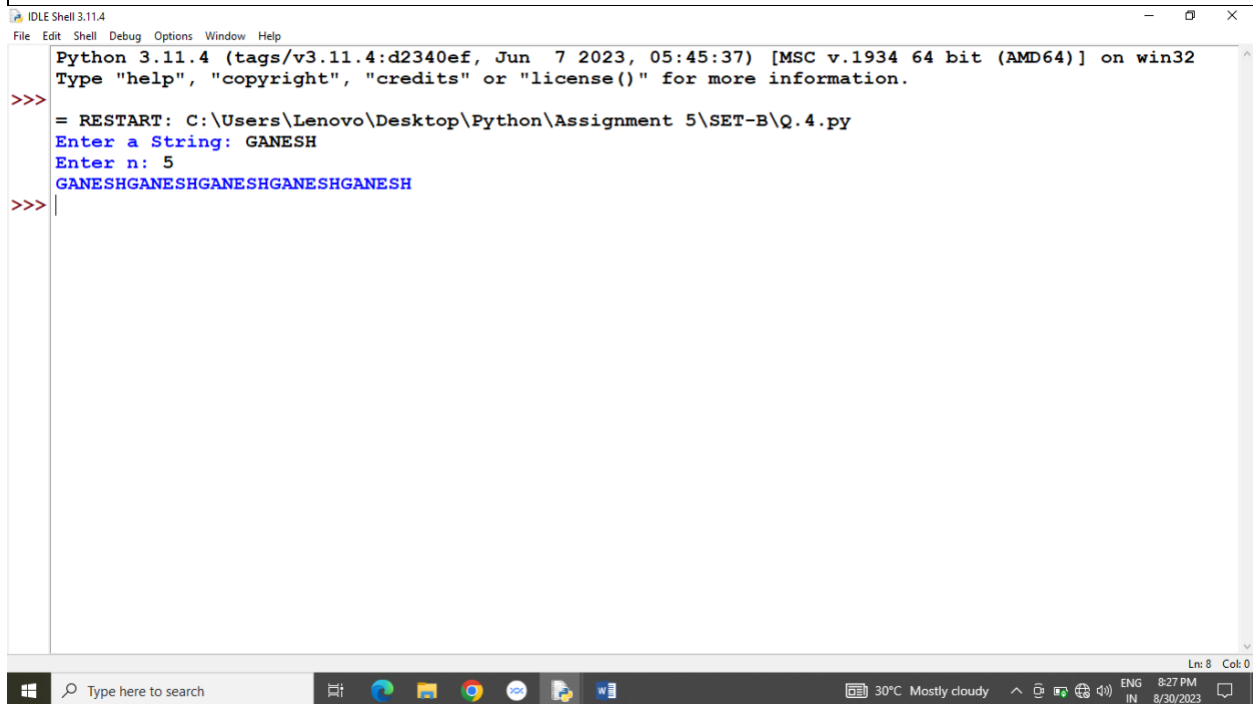
class repition:

```
def __init__(self,string):  
    self.string=string
```

```
def __mul__(self,other):  
    return self.string*other
```

```
str1=input("Enter a String: ")  
num=int(input("Enter n: "))  
obj=repition(str1)  
res=obj*num  
print(res)
```

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 5\SET-B\Q.4.py  
Enter a String: GANESH  
Enter n: 5  
GANESHGANESHGANESHGANESHGANESH  
>>>
```

Ln: 8 Col: 0

30°C Mostly cloudy 8:27 PM 8/30/2023

## ASSIGNMENT 5

### SET-C

Q.1 Python Program to Create a Class which Performs Basic Calculator Operations.

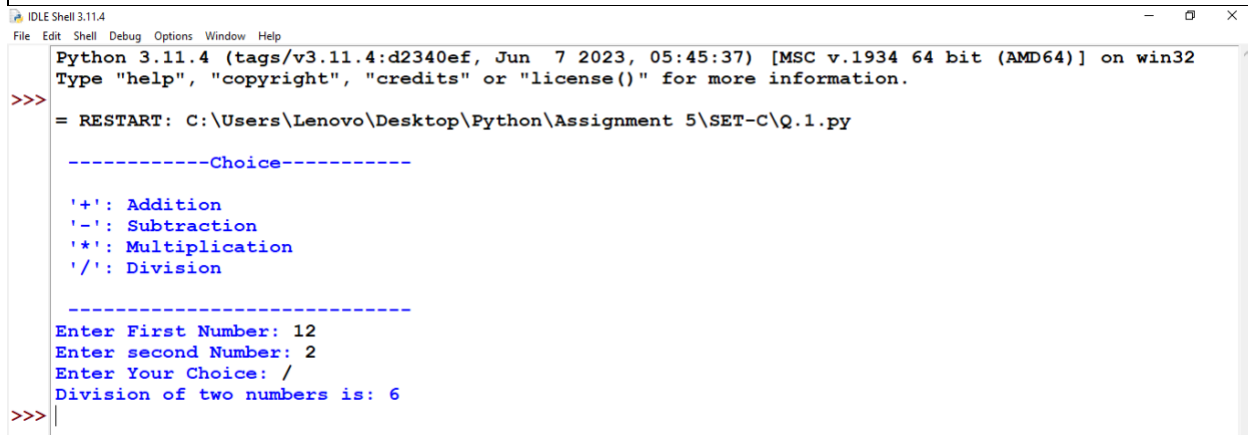
**Ans:**

```
class calculator:
    def __init__(self,a,b,case):
        self.a=a
        self.b=b
        self.case=case

    def calculate(self):
        if self.case=="+":
            print(f"Addition of two numbers is: {self.a+self.b}")
        elif self.case=="-":
            print(f"Subtraction of two numbers is: {self.a-self.b}")
        elif self.case=="*":
            print(f"Multiplication of two numbers is: {self.a*self.b}")
        elif self.case=="/":
            print(f"Division of two numbers is: {self.a//self.b}")
        else:
            print("Invalid choice")

print("\n -----Choice-----")
print("\n '+' : Addition \n '-' : Subtraction \n '*' : Multiplication \n '/' : Division")
print("\n -----")
num1=int(input("Enter First Number: "))
num2=int(input("Enter second Number: "))
choice=input("Enter Your Choice: ")
obj=calculator(num1,num2,choice)
obj.calculate()
```

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 5\SET-C\Q.1.py

-----Choice-----

'+': Addition
'-': Subtraction
'*': Multiplication
'/': Division

-----
Enter First Number: 12
Enter second Number: 2
Enter Your Choice: /
Division of two numbers is: 6
>>>
```

## ASSIGNMENT 5

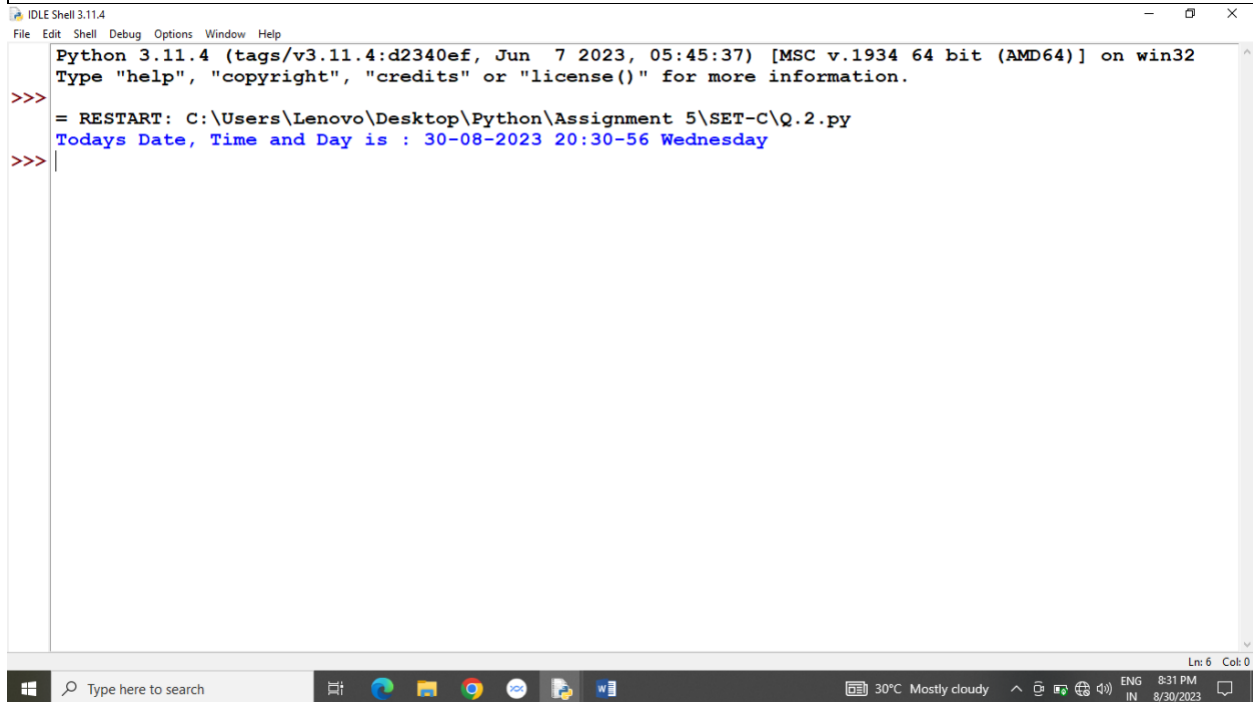
### SET-C

Q.2 Define datetime module that provides time object. Using this module write a program that gets current date and time and print day of the week.

**Ans:**

```
from datetime import datetime
dt=datetime.now()
datetime=dt.strftime("%d-%m-%Y %H:%M-%S %A")
print("Todays Date, Time and Day is :",datetime)
```

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 5\SET-C\Q.2.py
>>> Todays Date, Time and Day is : 30-08-2023 20:30-56 Wednesday
>>>
```

Ln: 6 Col: 0

30°C Mostly cloudy 8:31 PM 8/30/2023