Python

ASSIGNMENT 5

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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.

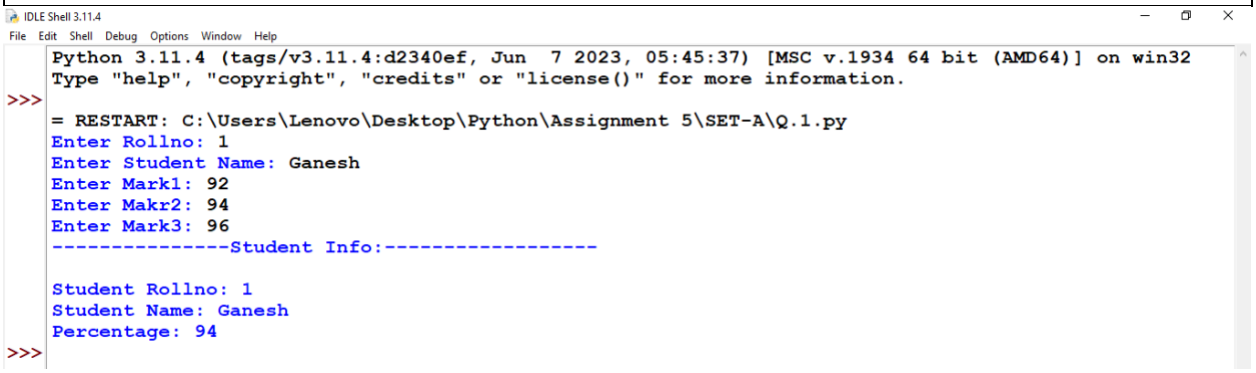
Ans:

```
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:



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.

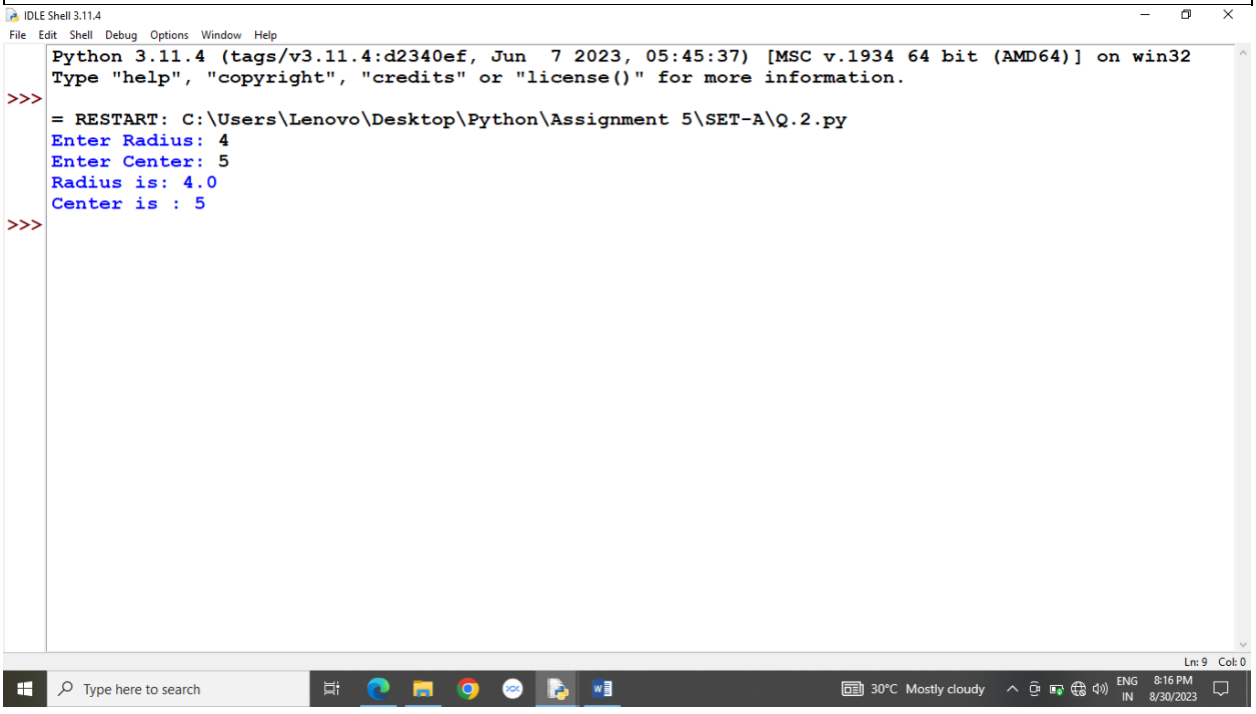
Ans:

```
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:



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()
      strrev=strlow[::-1]
      print("\nString in Reverse and lowercase: ",strrev)

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

Output:

ASSIGNMENT 5

SET-A

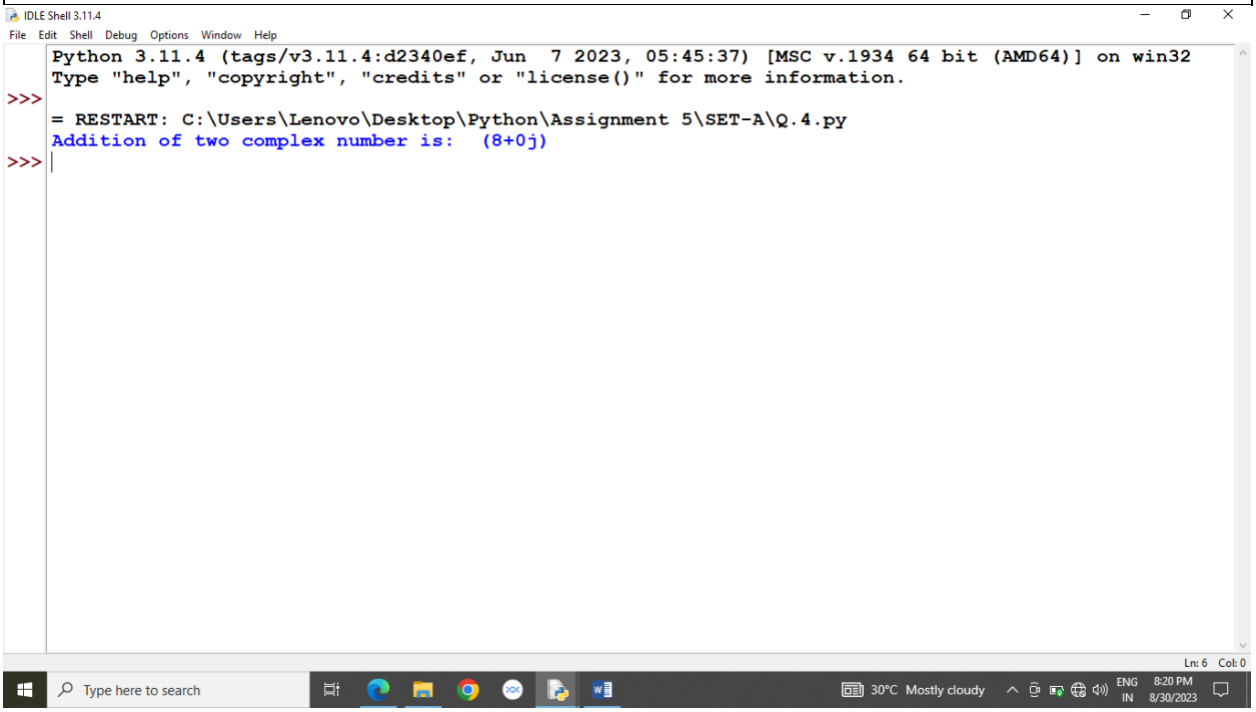
Q.4 Write Python class to perform addition of two complex numbers using binary + operator overloading.

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:



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:

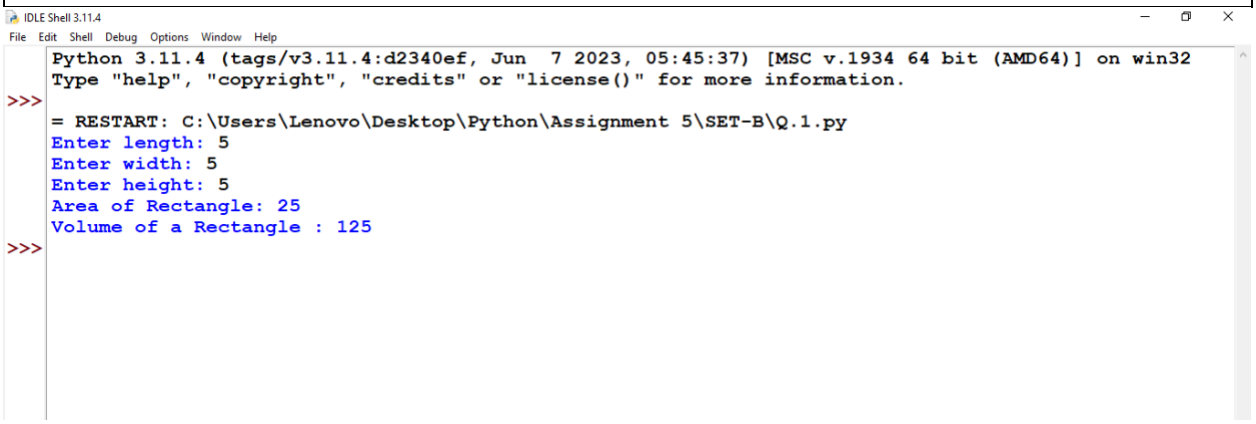
```
class Rectangle:
    def __init__(self,length,width,height):
        self.length=length
        self.width=width
        self.height=height

    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:



ASSIGNMENT 5

SET-B

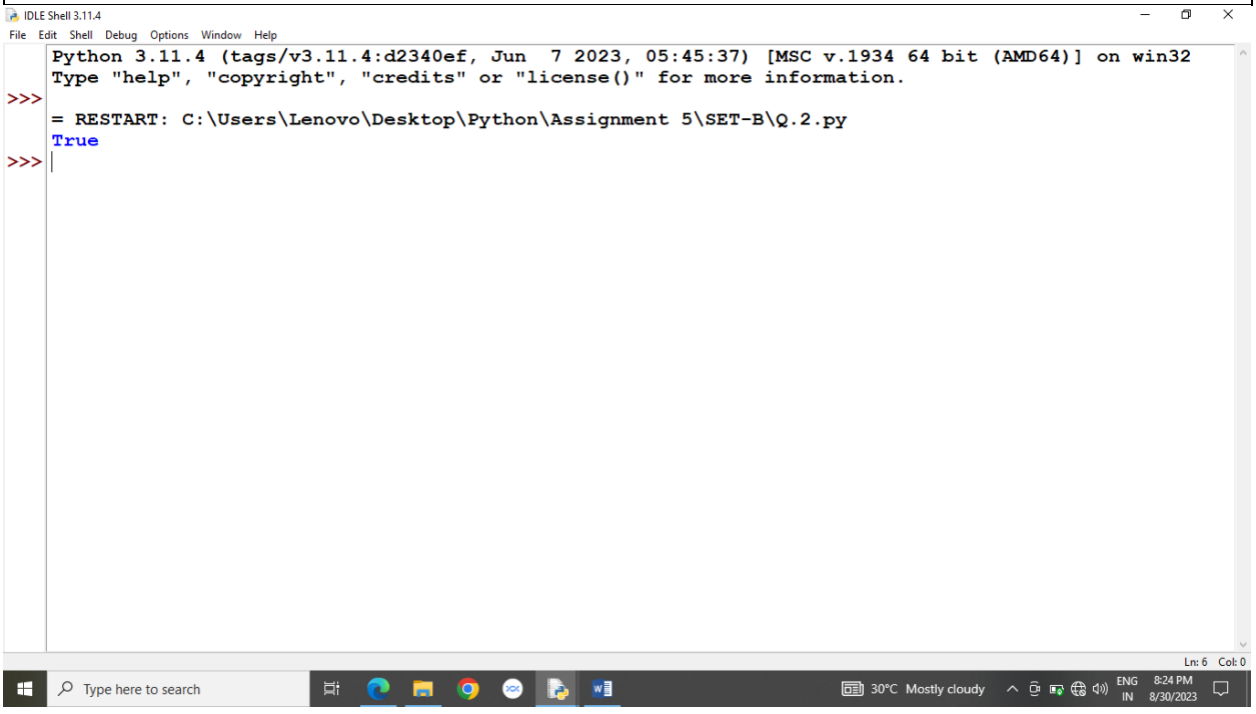
Q.2 Write a function named pt_in_circle that takes a circle and a point and returns true if point lies on the boundry of circle.

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:



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.

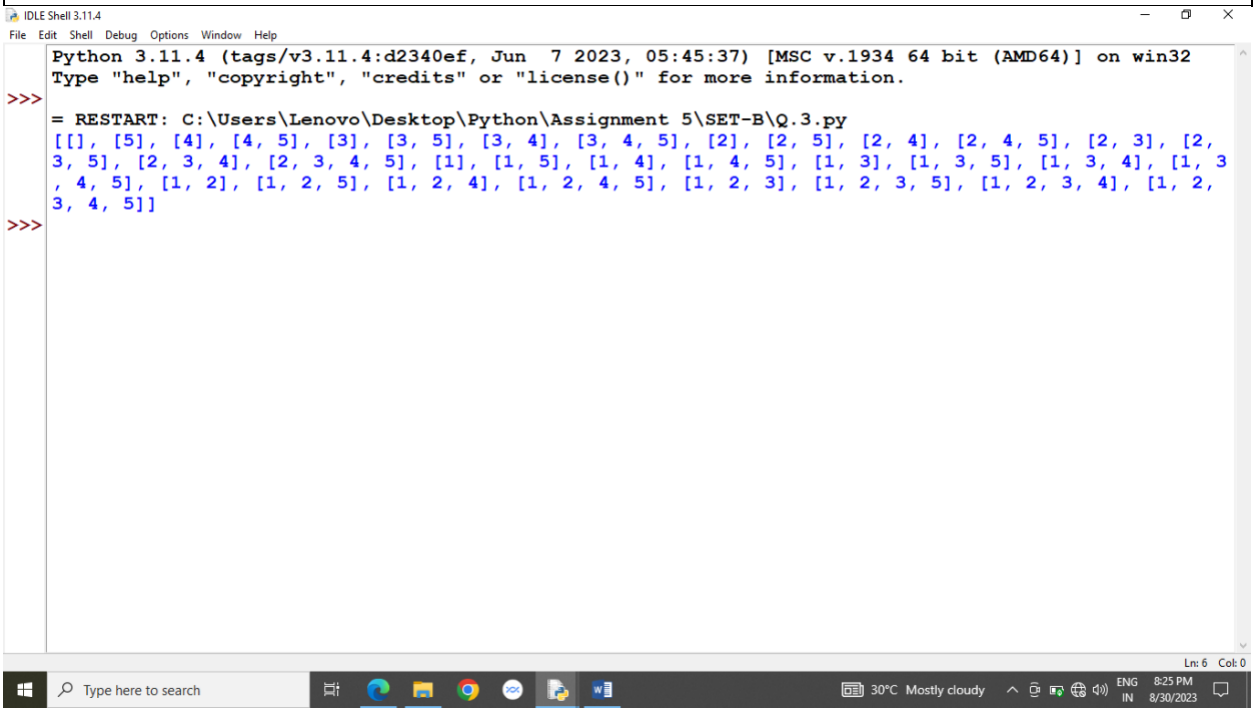
Ans:

```
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:



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.

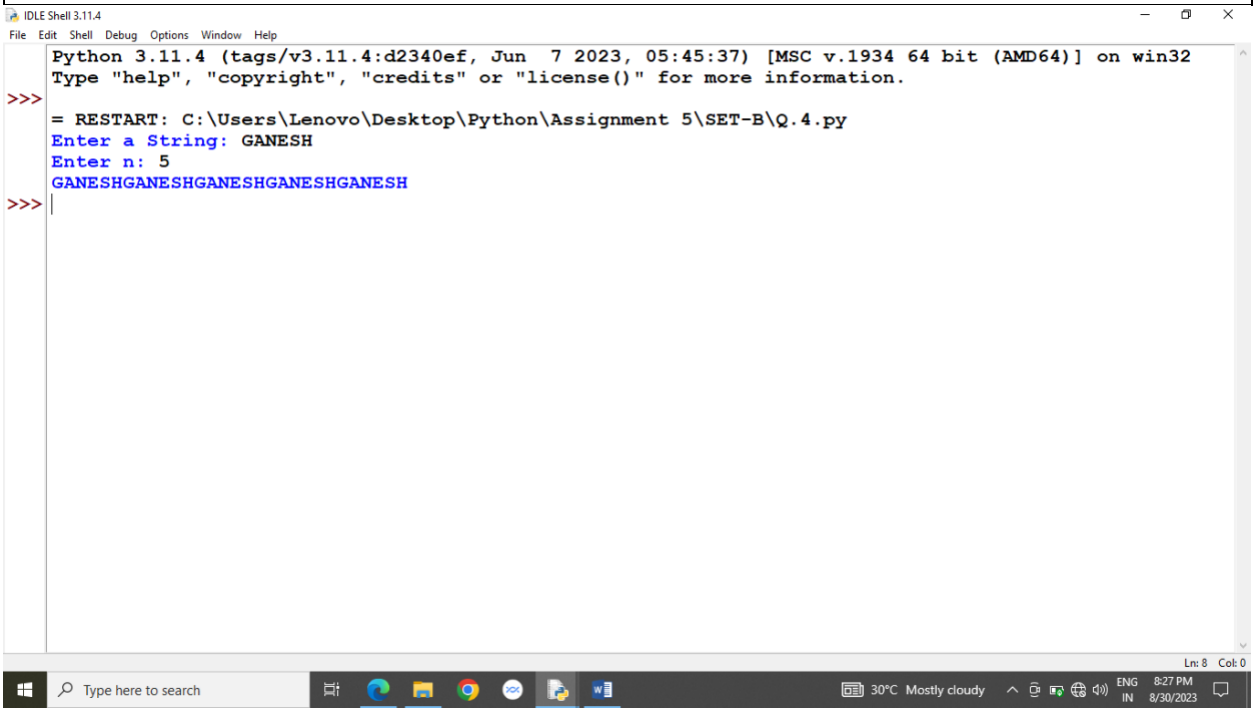
Ans:

```
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:



ASSIGNMENT 5

SET-C

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

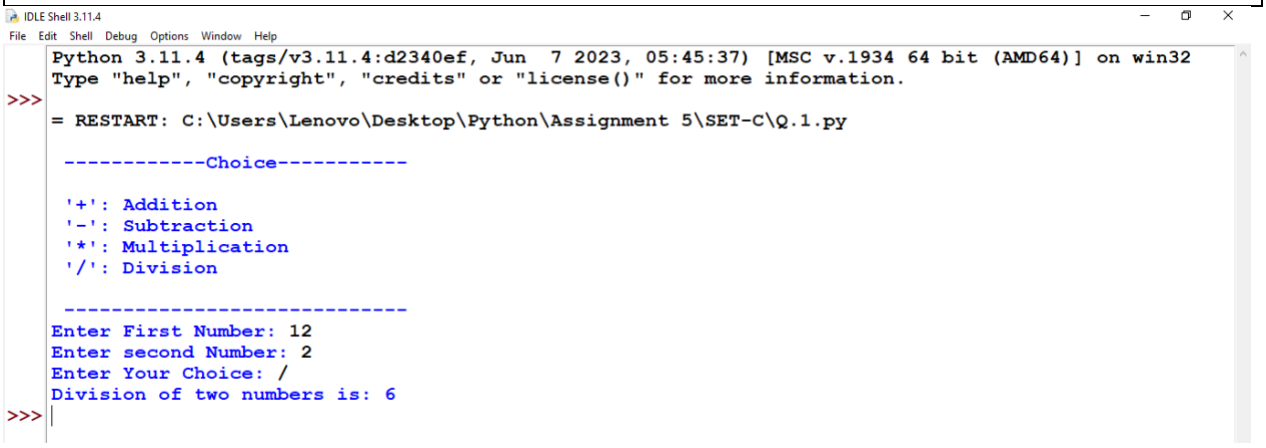
Ans:

```
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:



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: