DEPARTMENT OF COMPUTER APPLICATION

TKM COLLEGE OF ENGINEERING

KOLLAM – 691005

20MCA131 – PROGRAMMING LAB

PRACTICAL RECORD BOOK

First Semester MCA

2021-2022

Submitted by:

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ROLL NO : TKM21MCA-2027

DEPARTMENT OF COMPUTER APPLICATION

TKM COLLEGE OF ENGINEERING

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Certificate

This is a bonafide record of the work done by MANYA M(TKM21MCA-2027) in the First Semester in Programming Lab Course(20MCA131) towards the partial fulfillment of the degree of Master of Computer Applications during the academic year 2021-2022

Staff Member in-charge

Examiner

……..

…….

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LABCYCLE 1 QUESTION 1

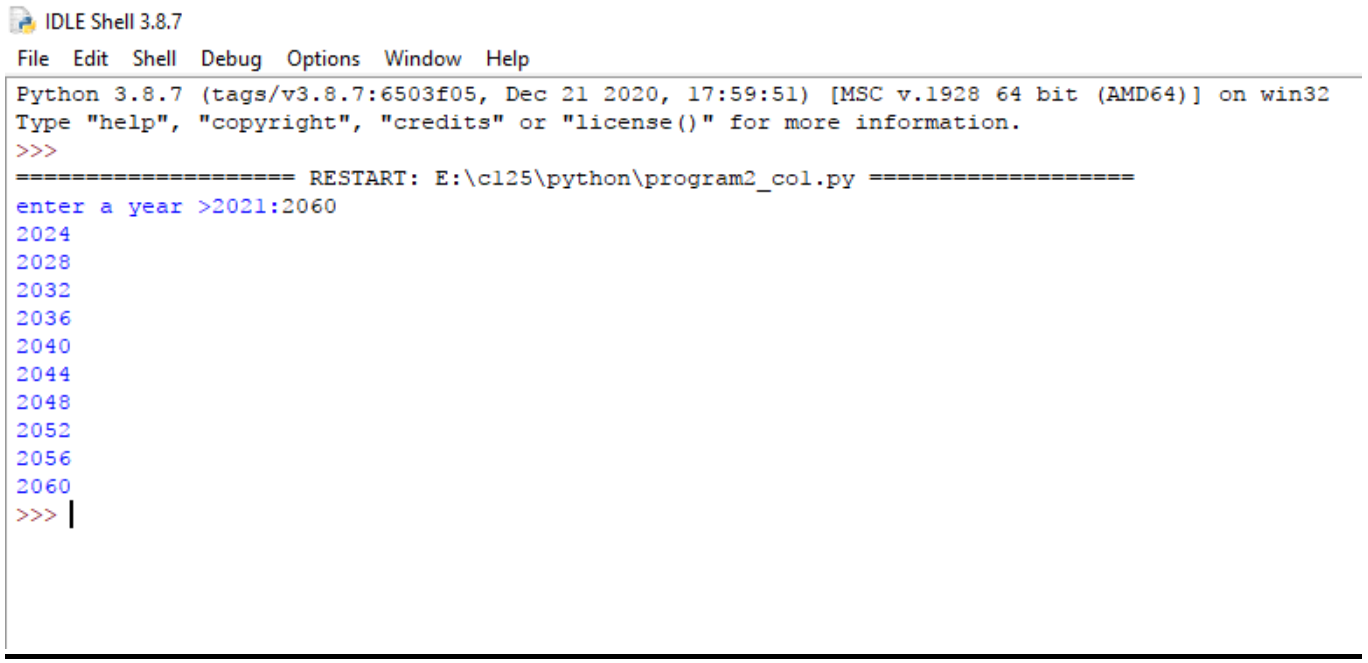
AIM:

Display future leap years from current year to a final year entered by user

PROGRAM CODE:

Out1p1.py	import datetime
	year=int(input("Enter the final year to which you want to display leap years : "))
	tyear=datetime.datetime.now().year
	for years in range(tyear,year+1):
	  if years % 4 == 0 or years % 400 == 0:
	  print(years);

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 2

AIM:

List comprehensions:
(a) Generate positive list of numbers from a given list of integers
(b) Square of N numbers
(c) Form a list of vowels selected from a given word
(d) List ordinal value of each element of a word (Hint: use ord() to get ordinal values) **:**

PROGRAM CODE:

Out1p2.py

```
l=[-1,2,3,4,-4,-5,6,7,8,-9,-10]
m=[x for x in l if x > 0 ]
print("Positive list of numbers",m)
c=int(input("Enter the limit : "))
n={x:x**2 for x in range(1,c+1)}
print("Square of ",c," numbers : ",n)
print("(c)")
v=['a','e','i','o','u']
s=input("Enter a string : ")
o=[x for x in s if x in v]
print("Vowels in ",s," : ",o)
print("Ordinal Values")
for x in s:
    print(x," : ",ord(x))
```

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2(
AMD64)] on win32
Type "help", "copyright", "credits" or "licens
>
=== RESTART: C:\Users\joyal\Downloads\Document
Positive list of numbers [2, 3, 4, 6, 7, 8]
Enter the limit : 3
Square of  3  numbers :  {1: 1, 2: 4, 3: 9}
(c)
Enter a string : joyal
Vowels in  joyal  :  ['o', 'a']
Ordinal Values
j  :  106
o  :  111
y  :  121
a  :  97
l  :  108
>
```

RESULT : The program was executed successfully and output obtained

LABCYCLE 1 QUESTION 3

AIM:

Count the occurrences of each word in a line of text

PROGRAM CODE:

Out1p3.py	s1=input("Enter the string : ")
	s2=s1.split( )
	d={}
	for i in s2:
	  if i in d:
	  d[i.lower()]+=1
	  else:
	  d[i.lower()]=1
	print(d)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>
=== RESTART: C:\Users\joyal\Downloads\Documents\python projects\c01\out1_4.py ==
Enter the string : python programming and python documentation  on python
{'python': 3, 'programming': 1, 'and': 1, 'documentation': 1, '': 1, 'on': 1}
>
```

RESULT : The program was executed successfully and output obtained

LABCYCLE 1 QUESTION 4

AIM:

Prompt the user for a list of integers. For all values greater than 100, store 'over' instead.

PROGRAM CODE:

Out1p4.py	s=input("Enter value : ")
	s=s.split(",")
	l=[]
	c=0
	for i in s:
	  l.append(int(i))
	for i in l:
	  if i>100:
	  l[c]='over'
	  c+=1
	print(l)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 1
AMD64)] on win32
Type "help", "copyright", "credits" or "license()"
>>
=== RESTART: C:\Users\joyal\Downloads\Documents\pyt
Enter value : 56873
['over']
>>
=== RESTART: C:\Users\joyal\Downloads\Documents\pyt
Enter value : 45
[45]
>>
=== RESTART: C:\Users\joyal\Downloads\Documents\pyt
Enter value : 102
['over']
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 5

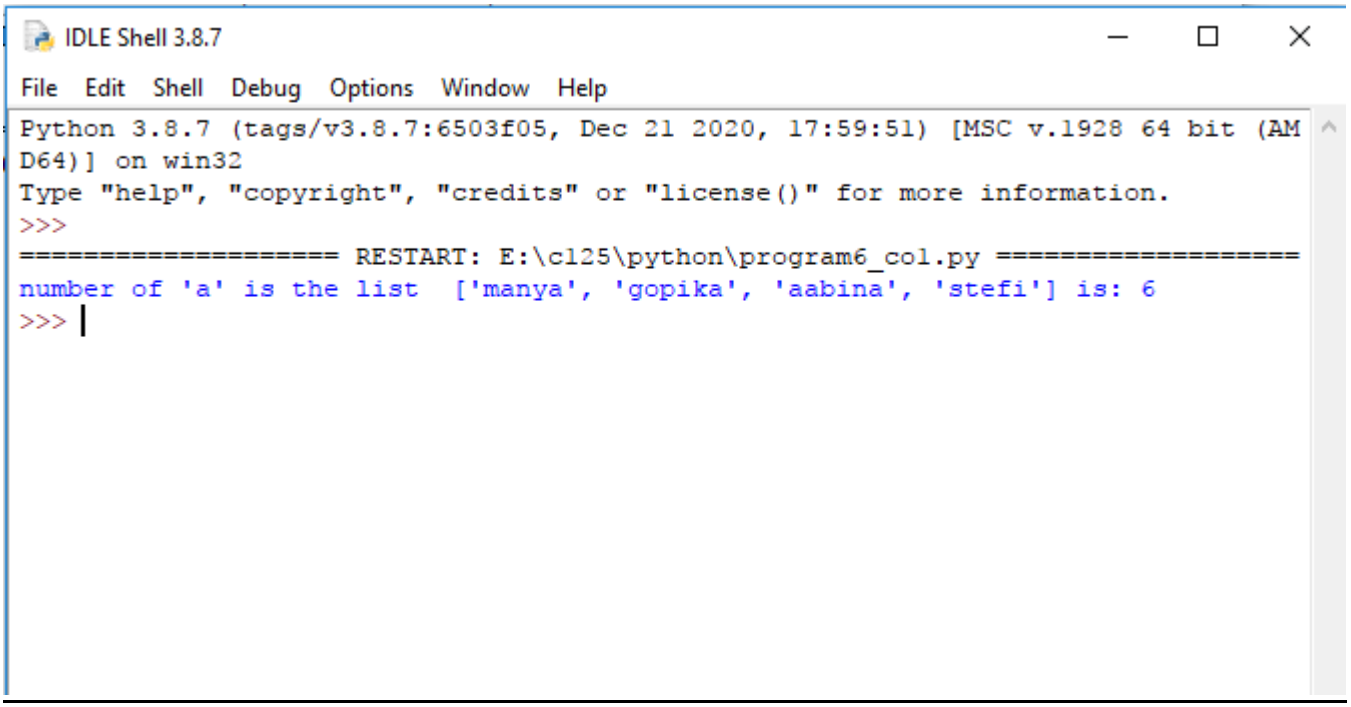
AIM:

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

PROGRAM CODE:

Out1p5.py	l=[‘manya’,’gopika’,’aabina’,’stefi’]
	c=0
	for i in l:
	  if 'a' in i:
	  c+=i.count('a')
	print(c)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 6

AIM:

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 CODE:

Out1p6.py	l1=[2,4,1,3,5,8,9] l2=[4,6,0,6,8] s=len(l1)==len(l2) p=sum(l1)==sum(l2) print("Lengths are same : ",s) print("Sum are equal : ",p) m=[i for i in l1 if i in l2] print("Common elements : ",m)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021,
AMD64)] on win32
Type "help", "copyright", "credits" or "license()"
>
=== RESTART: C:\Users\joyal\Downloads\Documents\py
Lengths are same :  False
Sum are equal :  False
Common elements :  [4, 8]
>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 7

AIM:

Get a string from an input string where all occurrences of first character replaced with '$', except first character.
[eg: onion -> oni$n] **:**

PROGRAM CODE:

Out1p7.py	s1=input("Enter a string ") s2=s1[0] s3=s1[1:] s4=s3.replace(s2,'$') replaced=s2+s4 print(replaced)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021
AMD64)] on win32
Type "help", "copyright", "credits" or "license(
>
=== RESTART: C:\Users\joyal\Downloads\Documents\
Enter a string orthology
orth$l$gy
>
```

RESULT : The program was executed successfully and output obtained

LABCYCLE 1 QUESTION 8

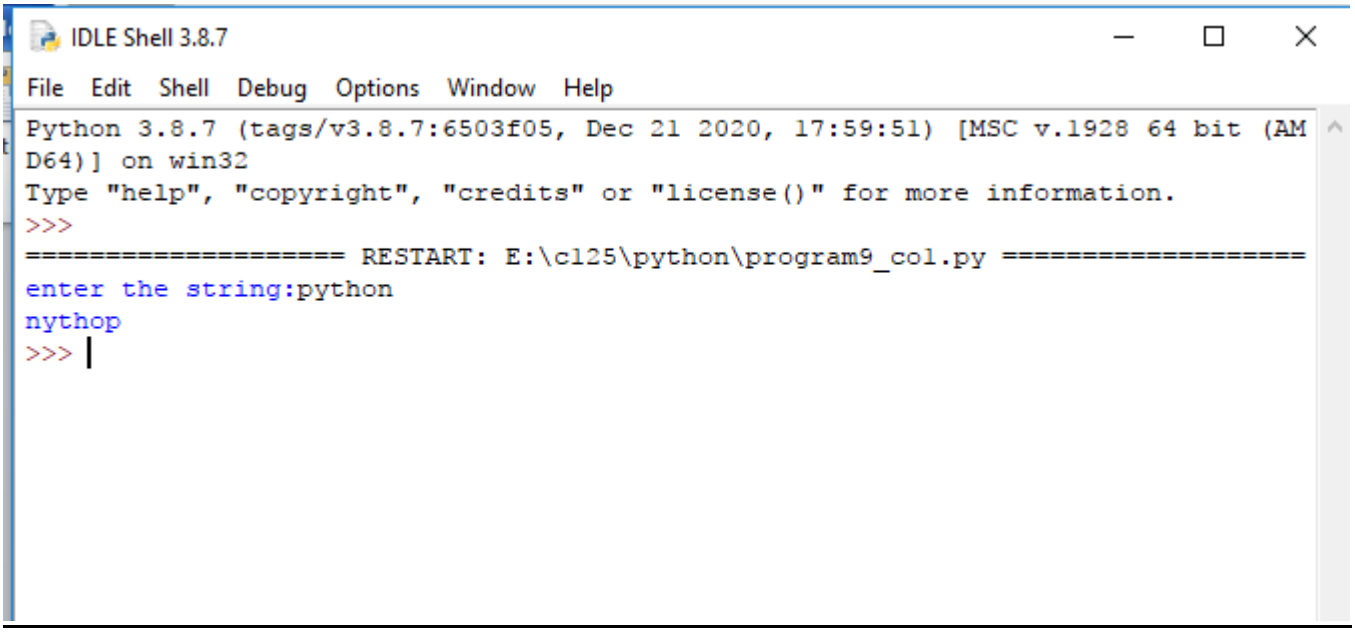
AIM:

Create a string from given string where first and last characters exchanged. [eg: python -> nythop]

PROGRAM CODE:

Out1p8.py	s1=input("Enter a string ") s2=s1[0] s3=s1[-1] s4=s1.replace(s2,s3) s5=s4[0] s6=s4[1:] s7=s6.replace(s3,s2) s8=s5+s7 print(s8)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 9

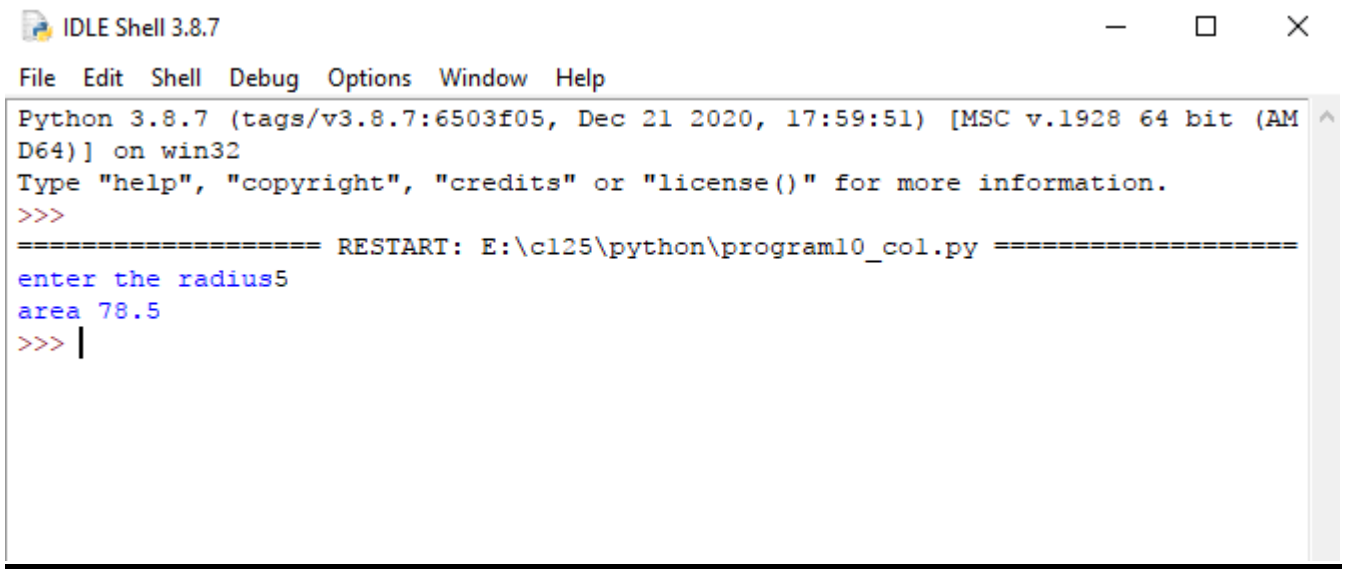
AIM:

Accept the radius from user and find area of circle

PROGRAM CODE:

Out1p9.py	a=float(input("enter the radius ")) area=3.14*a*a print("area",area)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 10

AIM:
Find biggest of 3 numbers entered

PROGRAM CODE:

Out1p10.py	print("Enter three value:")
	a,b,c=input(),input(),input()
	if((a>b) and (a>c)):
	  print(a, "is greater")
	elif ((b>a) and (b>c)):
	  print(b, "is greater")
	else:
	  print(c, "is greater")
	print(max(a,b,c))

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for mor
>>
== RESTART: C:\Users\joyal\Downloads\Documents\python proj
Enter three value:
5.6
7.6
2.6
7.6 is greater
7.6
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 11

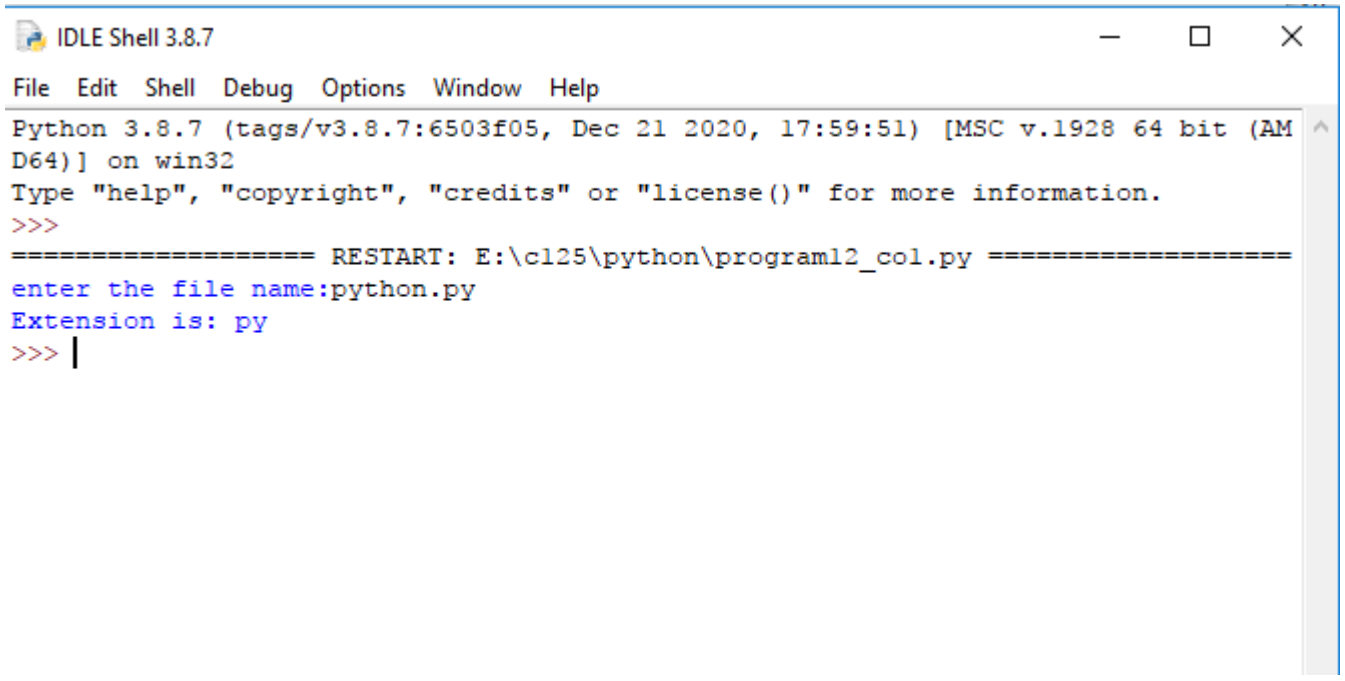
AIM:

Accept a file name from user and print extension of that.

PROGRAM CODE:

Out1p11.py	filename=input("Enter the file name\n") l=filename.split(".") print(“Extention is :”,l[-1])

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 12

AIM:

Create a list of colors from comma-separated color names entered by user. Display first and last colors.

PROGRAM CODE:

Out1p12.py	s=input("Enter comma separated colors : ") s=s.split(",") l=[] c=0 for i in s: l.append(i) print("First color : ",l[0]," Last Color : ",l[-1])

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.19
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more informati
>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\c01\ou
Enter comma separated colors : yellow,black,blue,white
First color :  yellow  Last Color :  white
>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 13

AIM:

Accept an integer n and compute n+nn+nnn.

PROGRAM CODE:

Out1p13.py

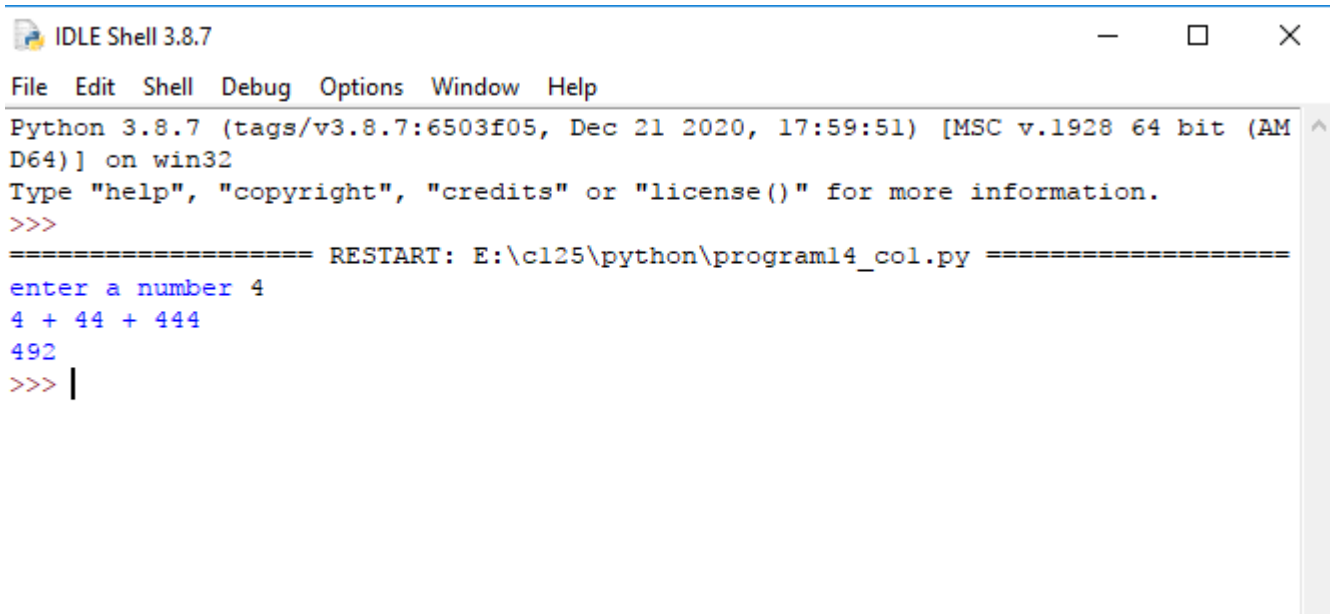
```
s=int(input("enter a number"))
a=str(s)
b=a+a
c=b+a


print(a,"+",b,"+",c)

x=int(b)
y=int(c)

sum=s+x+y
print(sum)
```

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 14

AIM:

Print out all colors from color-list1 not contained in color-list2

PROGRAM CODE:

Out1p14.py	c1=['yellow','green','blue','white'] c2=['white','green','violet','black'] m=[i for i in c1 if i not in c2] print(" Colors in first list not in second : ",m)

OUTPUT:

```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more informa
>>>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\c01\
 Colors in first list not in second :  ['yellow', 'blue']
>>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 15

AIM:
Create a single string separated with space from two strings by swapping the character at position 1.

PROGRAM CODE:

Out1p15.py	s1=input("Enter a string") s2=input("Enter a new string") s3=s1[0] s4=s2[0] s5=s4+s1[1:]+" "+s3+s2[1:] print(s5)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021,
AMD64)] on win32
Type "help", "copyright", "credits" or "license()"
>>
== RESTART: C:\Users\joyal\Downloads\Documents\pyt
Enter a stringmagicfunctions
Enter a new stringkeyword
kagicfunctions meyword
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 16

AIM:

Sort dictionary in ascending and descending order.

PROGRAM CODE:

Out1p16.py	import operator d={3:5,1:3,4:2,5:1,2:4} sort_as=(sorted(d.items(), key=operator.itemgetter(0))) sort_dec=(sorted(d.items(), key=operator.itemgetter(0), reverse=True)) print("Dictionary sorted ascending order ",sort_as) print("Dictionary sorted descending order ",sort_dec)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494159, Oct  4 2021, 19:00:18) [MSC v.1929 64 bi
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\c01\out1_17.py
Dictionary sorted ascending order  [(1, 3), (2, 4), (3, 5), (4, 2), (5, 1)]
Dictionary sorted descending order  [(5, 1), (4, 2), (3, 5), (2, 4), (1, 3)]
>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 17

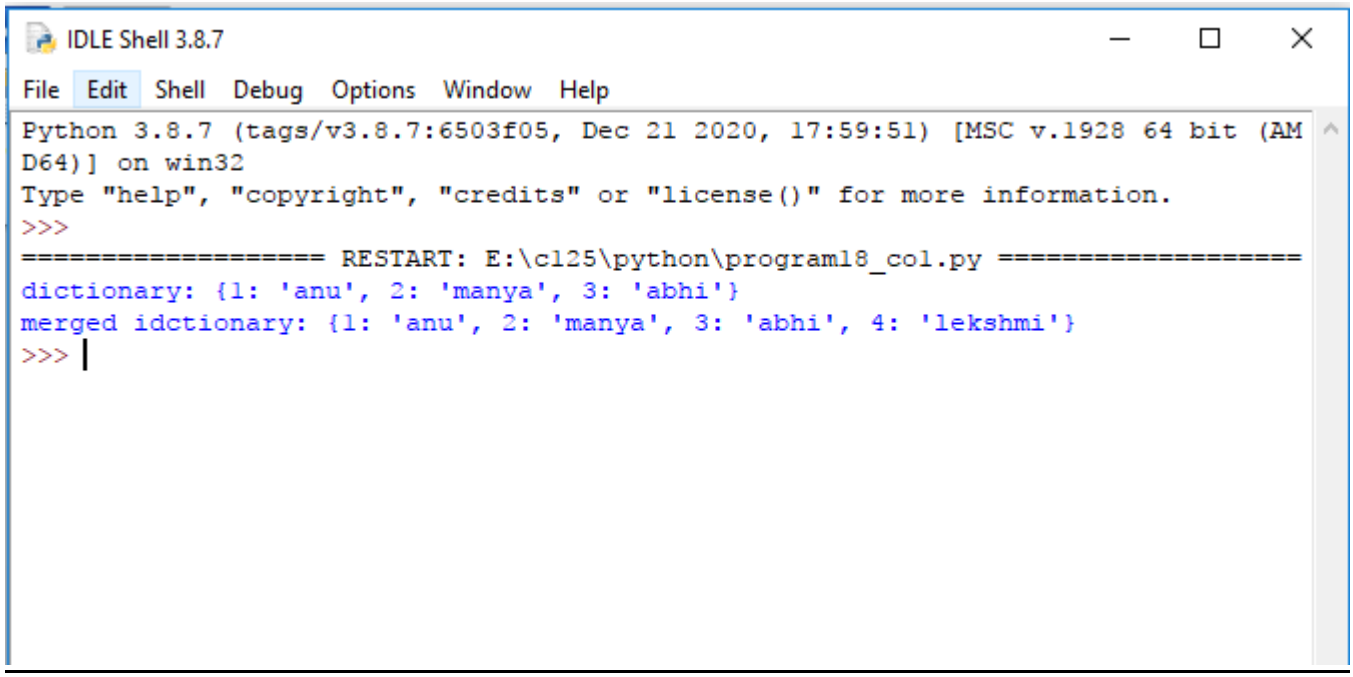
AIM:

Merge two dictionaries

PROGRAM CODE:

Out1p17.py	d={1:'anu',2:'manya',3:'abhi'} print("dictionary:",d) d2={4:'lekshmi'} d.update(d2) print("merged idctionary:",d)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 18

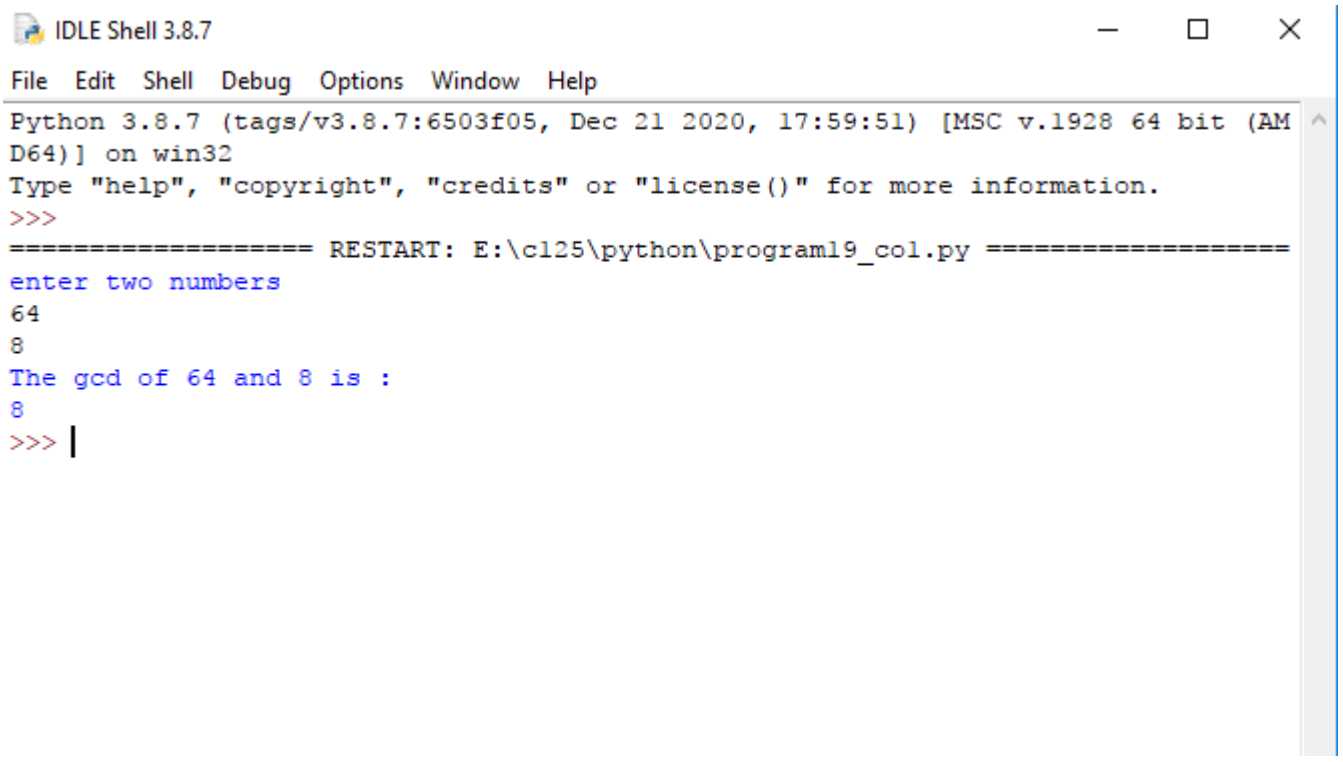
AIM:

Find gcd of 2 numbers

PROGRAM CODE:

Out1p18.py	import math print('enter two numbers') n=int(input()) a=int(input()) print("The gcd of",n,"and",a,"is : ",) print(math.gcd(n,a))

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 1 QUESTION 19

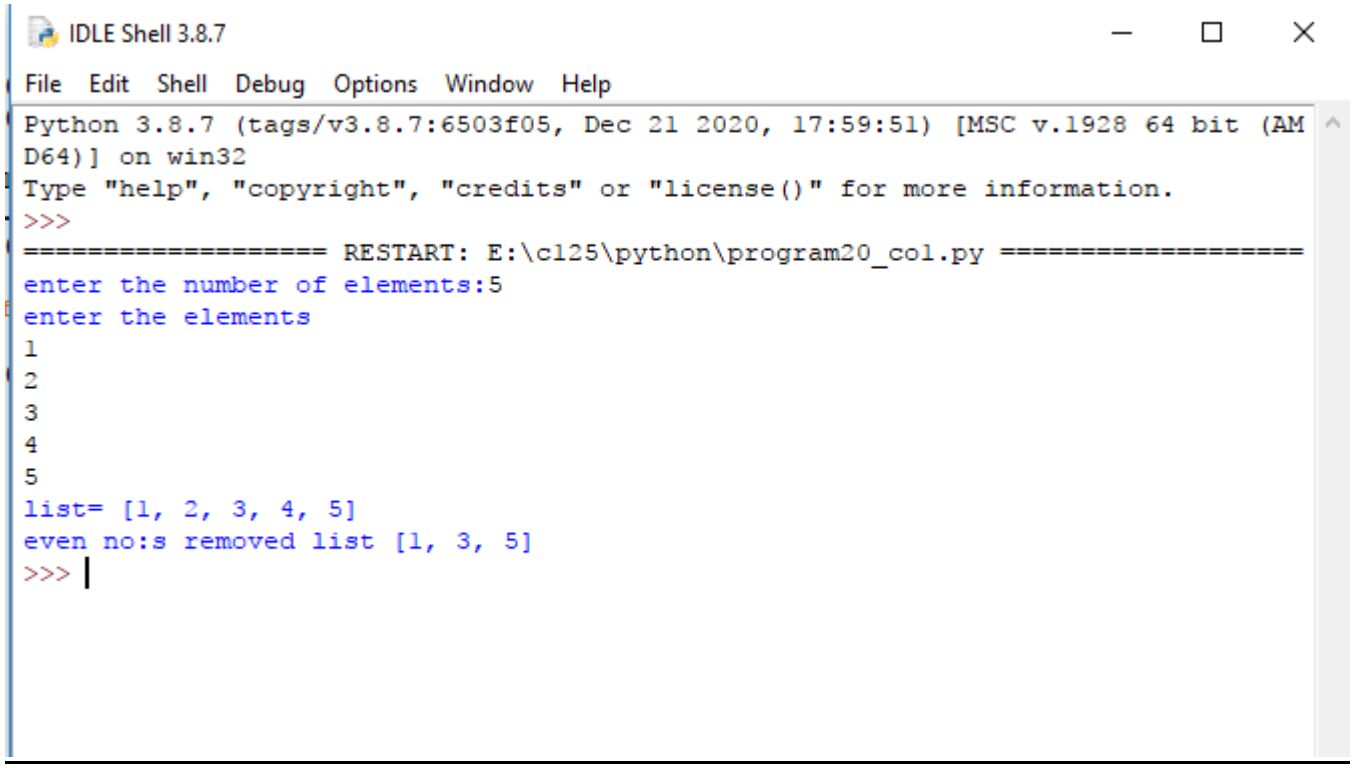
AIM:

From a list of integers, create a list removing even numbers.

PROGRAM CODE:

Out1p19.py	l=[]
	e=[]
	n=int(input("enter the number of elements:"))
	print("enter the elements")
	for i in range(0,n):
	  element=int(input())
	  l.append(element)
	print("list=",l)
	for i in range(0,n+1):
	  if i%2!=0:
	  e.append(i)
	print("even no:s removed list",e)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 1

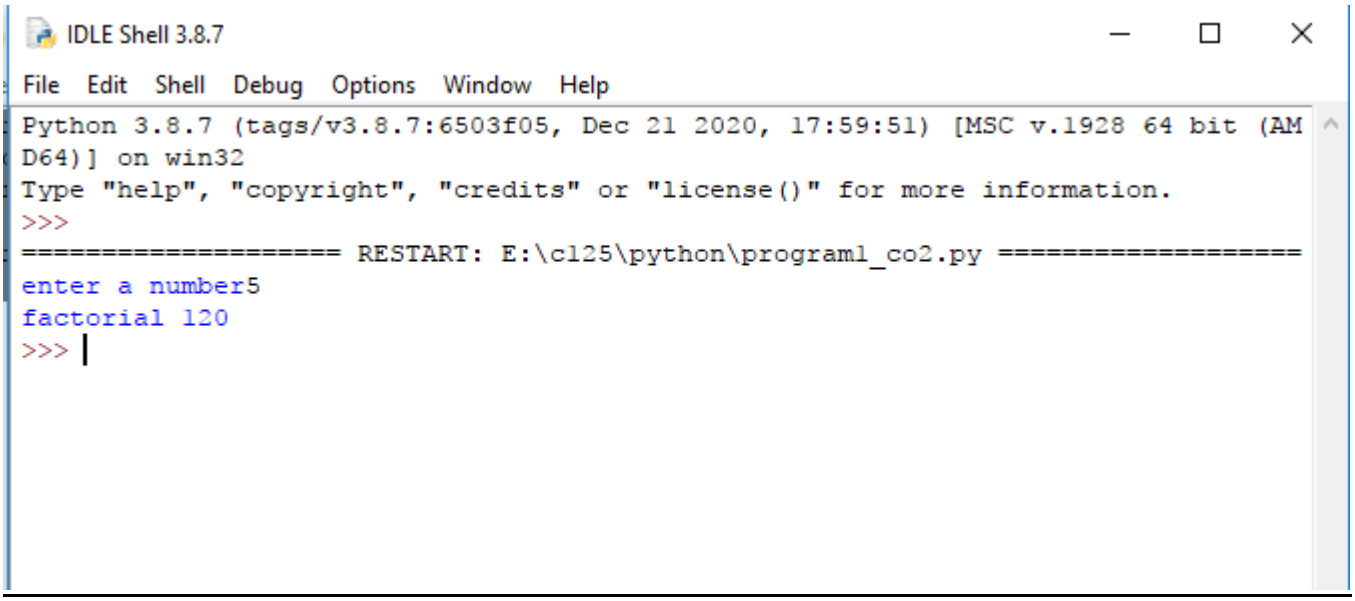
AIM:

Program to find the factorial of a number

PROGRAM CODE:

Out2p1.py	n=int(input("enter a number")) prod=1 for i in range(1,n+1): prod=prod*i print("factorial",prod)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 2

AIM:

Generate Fibonacci series of N terms

PROGRAM CODE:

Out2p2.py	num=int(input("Enter a number"))
	a=0
	b=1
	sum=0
	count=1
	print("Fibonacci series\n")
	while count<=num:
	  print(sum,"\n")
	  a=b
	  b=sum
	  sum=a+b
	  count+=1

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" f
>
=== RESTART: C:\Users\joyal\Downloads\Documents\pyth
Enter a number5
Fibonacci series

0

1

1

2

3

>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 3

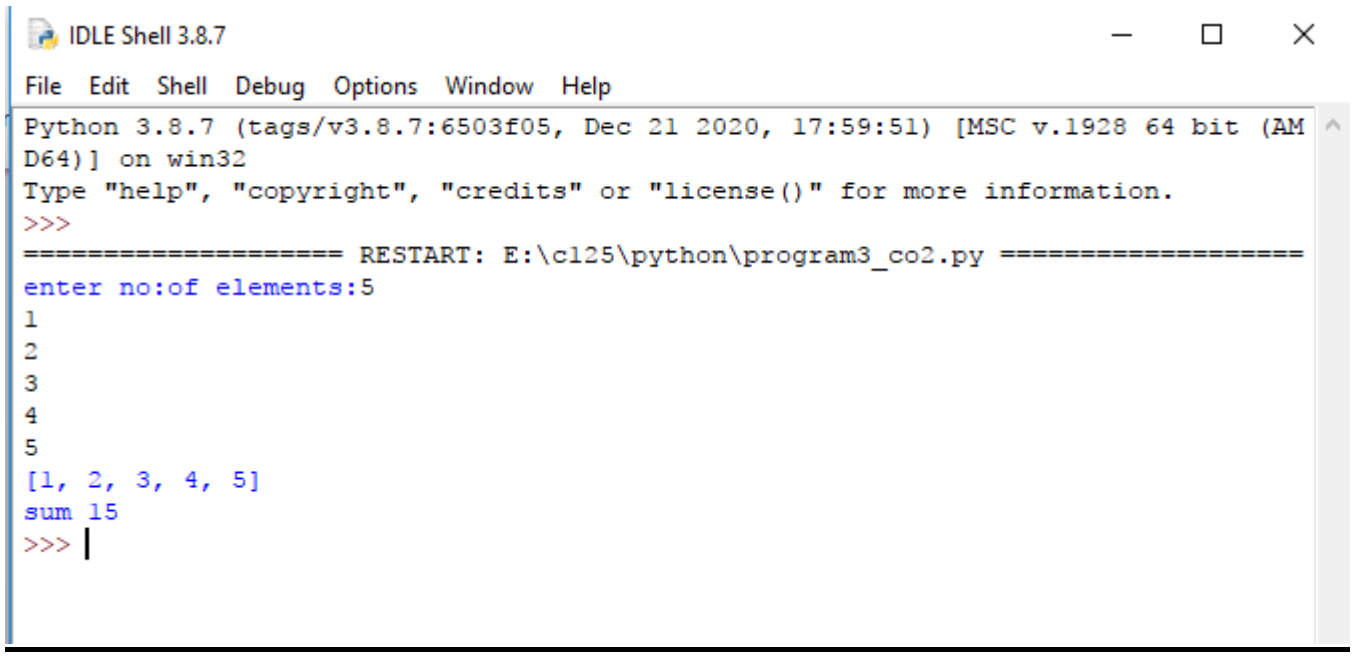
AIM:

Find the sum of all items in a list

PROGRAM CODE:

Out2p3.py	l=[]
	n=int(input("enter no:of elements:"))
	for i in range(0,n):
	  a=int(input())
	  l.append(a)
	print(l)
	sum=0
	for i in l:
	  sum=sum+i
	print("sum",sum)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 4

AIM:

Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.

PROGRAM CODE:

Out2p4.py	import math
	
	lists =[]
	start=int(input("Enter start "))
	end=int(input("Enter end "))
	for a in range(start,end+1):
	  for b in str(a):
	  if int(b) % 2 != 0:
	  break
	  else:
	  root=math.sqrt(a)
	  if root % 1 == 0:
	  lists.append(a)
	print(lists)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:1
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for mo
>>>
=== RESTART: C:\Users\joyal\Downloads\Documents\python pr
Enter start 1
Enter end 69
[4, 64]
>>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 5

AIM:

Display the given pyramid with step number accepted from user.
Eg: N=4
1
2 4
3 6 9
4 8 12 16

PROGRAM CODE:

Out2p5.py	num=int(input("Enter the limit"))
	for i in range(1,num+1):
	  for j in range(1,i+1):
	  print(i*j," ",end='')
	  print("\n")

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, J
AMD64)] on win32
Type "help", "copyright", "credits" or "license()"
>
=== RESTART: C:\Users\joyal\Downloads\Documents\pyt
Enter the limit7
1

2  4

3  6  9

4  8  12  16

5  10  15  20  25

6  12  18  24  30  36

7  14  21  28  35  42  49

>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 6

AIM:

Count the number of characters (character frequency) in a string.

PROGRAM CODE:

Out2p6.py	char=input("Enter the string") count=len(char) print("Number of characters in the string : ",count)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18)
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more
>>
=== RESTART: C:\Users\joyal\Downloads\Documents\python proj
Enter the stringpython
Number of characters in the string :  6
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 7

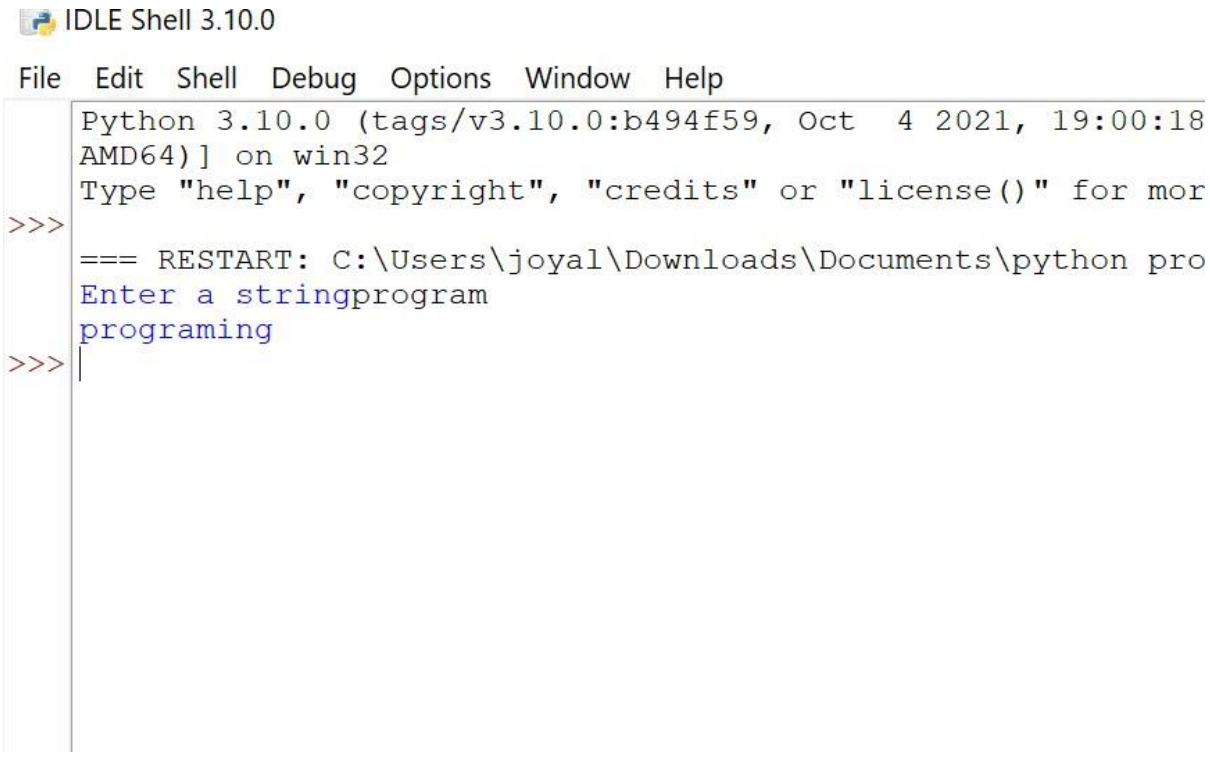
AIM:

Add ‘ing’ at the end of a given string. If it already ends with ‘ing’, then add ‘ly’

PROGRAM CODE:

Out2p7.py	st=input("Enter a string")
	if(st[-3:]=='ing'):
	  st=st[:]+'ly'
	else:
	  st=st[:]+'ing'
	print(st)

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 8

AIM:

Accept a list of words and return length of longest word

PROGRAM CODE:

Out2p8**.py**	s=input("Enter a strings : ")
	s=s.split(" ")
	a=[]
	for i in s:
	  a.append(i)
	
	max = len(a[0])
	temp = a[0]
	
	for i in a:
	  if(len(i) > max):
	  max = len(i)
	  temp = i
	
	print("The word with the longest length is:", temp," and length is ", max)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 6
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>
=== RESTART: C:\Users\joyal\Downloads\Documents\python projects\cO2\out2_
Enter a strings : python programming is compact
The word with the longest length is: programming  and length is  11
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 9

AIM:

Construct following pattern using nested loop

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

PROGRAM CODE:

Out2p9.py	num=int(input("Enter the limit"))
	for i in range(1,num+1):
	  for j in range(1,i+1):
	  print("* ",end='')
	  print("\n")
	for i in range(num+1,0,-1):
	  for j in range(1,i+1):
	  print("* ",end='')
	  print("\n")

OUTPUT:

```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more ir
>>>
=== RESTART: C:\Users\joyal\Downloads\Documents\python project
Enter the limit5
*

* *

* * *

* * * *

* * * * *

* * * * *

* * * *

* * *

* *

*
```

RESULT : The program was executed successfully and output obtained

LABCYCLE 2 QUESTION 10

AIM:

Generate all factors of a number.

PROGRAM CODE:

Out2p10.py	num=int(input("Enter the number : "))
	print("Factors of ",num," are")
	for i in range(1,num+1):
	  if num % i ==0:
	  print(i)

OUTPUT:

```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more informa
>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\c02\
Enter the number : 64
Factors of  64  are
1
2
4
8
16
32
64
>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 2 QUESTION 11

AIM:

Write lambda functions to find area of square, rectangle and triangle.

PROGRAM CODE:

Out2p11.py	import math t_area= lambda b,h : 1/2*(b*h) r_area= lambda l,b : l*b s_area= lambda a : a*a s=float(input("Enter the breadth of triangle : ")) t=float(input("Enter the height of triangle : ")) print("Area of triangle : ",t_area(s,t)) u=float(input("Enter the length of rectangle : ")) v=float(input("Enter the breadth of rectangle : ")) print("Area of rectangle : ",r_area(u,v)) w=float(input("Enter the length of the sqaure : ")) print("Area of square : ",s_area(w))

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18)
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more
>>
== RESTART: C:\Users\joyal\Downloads\Documents\python projec
Enter the breadth of triangle : 6.3
Enter the height of triangle : 7.45
Area of triangle :  23.4675
Enter the length of rectangle : 3.23
Enter the breadth of rectangle : 2.34
Area of rectangle :  7.558199999999999
Enter the length of the sqaure : 6
Area of square :  36.0
>>
```

RESULT : The program was executed successfully and output obtained

LABCYCLE 3 QUESTION 1

AIM:

Work with built-in packages

PROGRAM CODE:

Out3p1.py	import math n=int(input("Enter the number: ")) print("Square of ",n," is ",pow(n,2)) print("Cube of ",n," is ",pow(n,3)) print("Square root of ",n," is ",math.sqrt(n))

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more info
>
= RESTART: C:/Users/joyal/Downloads/Documents/python projects/co
am1.py
Enter the number: 4.6
Square of  4.6  is  21.159999999999997
Cube of  4.6  is  97.33599999999998
Square root of  4.6  is  2.1447610589527217
>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 3 QUESTION 2

AIM:

Create a package graphics with modules rectangle, circle and sub-package 3D-graphics with modules cuboid and sphere. Include methods to find area and perimeter of respective figures in each module. Write programs that finds area and perimeter of figures by different importing statements. (Include selective import of modules and import * statements)

PROGRAM CODE:

Out3p2.py

```
from graphics.rectangle import *
from graphics._3D_graphics.cuboid import *
from graphics._3D_graphics.sphere import *
from graphics.circle import *
print("********Rectangle**********")
l=float(input("Enter the length: "))
b=float(input("Enter the breadth: "))
arearect(l,b)
perirect(l,b)
h=float(input("Enter the height of cuboid: "))
cuboidarea(l,b,h)
cuboidperi(l,b,h)
print("********Circle********")
r=float(input("Enter the radius: "))
areac(r)
circumc(r)
sphere(r)
```

GRAPHICS MODULE

Rectangle.py

```
def arearect(l,b):
    a=l*b
    print("Area of rectangle: ",a)
def perirect(l,b):
    p=2*(l+b)
    print("Perimeter of rectangle: ",p)
```

Circle.py

```
def areac(r):
    a=3.14*r*r
    print("Area of circle: ",a)
def circumc(r):
    c=2*3.14*r
    c=round(c,2)
    print("Circumference of circle: ",c)
```

SUB MODULE

__3D__GRAPHICS

Cuboid.py	def cuboidarea(l,b,h):
	  s=2*((l*b)+(b*h)+(l*h))
	  print("Surface area of Cuboid: ",s)
	def cuboidperi(l,b,h):
	  p=4*(l+b+h)
	  print("Perimeter of Cuboid: ",p)

Sphere.py	def sphere(r):
	  s=4*3.14*r*r
	  print("Surface area of Sphere: ",s)

OUTPUT:

```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information
>>
= RESTART: C:\Users\joyal\Downloads\Documents\python projects\co3\co3_p
2.py
********Rectangle**********
Enter the length: 4.5
Enter the breadth: 3.2
Area of rectangle:  14.4
Perimeter of rectangle:  15.4
Enter the height of cuboid: 12
Surface area of Cuboid:  213.60000000000002
Perimeter of Cuboid:  78.8
********Circle********
Enter the radius: 3.14
Area of circle:  30.959144000000002
Circumference of circle:  19.72
Surface area of Sphere:  123.83657600000001
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 4 QUESTION 1

AIM:

Create Rectangle class with attributes length and breadth and methods to find area and perimeter. Compare two Rectangle objects by their area.

PROGRAM CODE:

Out4p1.py	class Rectangle:
	  def __init__(self,lenth,bread):
	  self.lenth=lenth
	  self.bread=bread
	  def area(self):
	  self.result=self.lenth*self.bread
	  print("Area:",self.result)
	  def peri(self):
	  self.result=2*(self.lenth+self.bread)
	  print("Perimeter:",self.result)
	  def compare(self):
	  print("Area of Rectangle1")
	
	obj2=Rectangle(int(input("enter length")),int(input("enter breadth")))
	obj1=Rectangle(int(input("enter length")),int(input("enter breadth")))
	obj2.area()
	obj1.peri()

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" fo
>>>
== RESTART: C:\Users\joyal\Downloads\Documents\pythor
enter length7
enter breadth4
enter length8
enter breadth3
Area: 28
Perimeter: 22
>>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 4 QUESTION 2

AIM:

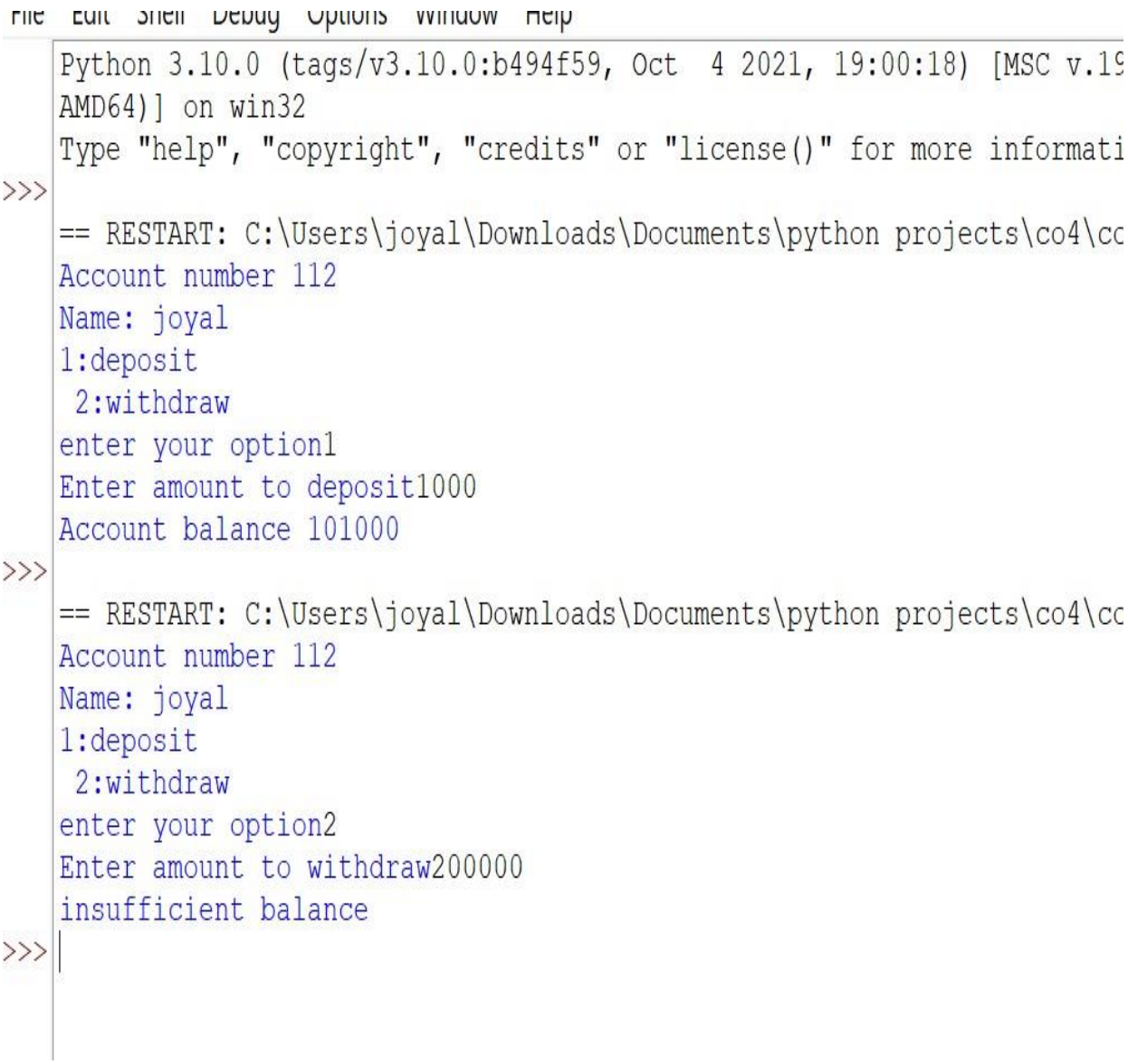
Create a Bank account with members account number, name, type of account and balance. Write constructor and methods to deposit at the bank and withdraw an amount from the bank.

PROGRAM CODE:

Out4p2.py

```
class Account:
    def __init__(self,ac,name,typeofac,balance):
        self.ac=ac
        self.name=name
        self.typeofac=typeofac
        self.balance=balance
    def display(self):
        print("Account number", self.ac)
        print("Name:",str(self.name))
    def withdraw(self):
        if(self.balance==0):
            print("Acount balance =",self.balance)
        n=int(input("Enter amount to withdraw"))
        if(n>self.balance):
            print("insufficient balance")
        else:
            self.balance=self.balance-n
            print("Account balance",self.balance)
    def deposit(self):
        n=int(input("Enter amount to deposit"))
        self.balance=self.balance+n
        print("Account balance",self.balance)
obj=Account(112,"joyal","savings",100000)
obj.display()
print("1:deposit\n 2:withdraw")
n=int(input("enter your option"))
if(n==2):
    obj.withdraw()
elif(n==1):
    obj.deposit()
```

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 4 QUESTION 3

AIM:

Create a class Rectangle with private attributes length and width. Overload '<' operator to compare the area of 2 rectangle

PROGRAM CODE:

Out4p3.py

```
class Rectangle:
    def __init__(self,length,breadth):
        self.__length=length
        self.__breadth=breadth
        self.__area=length*breadth
    def __lt__(self,m):
        return self.__area<m.__area
r=Rectangle(int(input("Enter lenghth rectangle one:")),int(input("Enter breadth rectangle one:")))
r1=Rectangle(int(input("Enter lenghth rectangle two:")),int(input("Enter breadth rectangle two:")))
if r<r1:
    print("Rectangle two has largest area")
else:
    print("Rectangle one has largest area")
```

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more i
>>
== RESTART: C:\Users\joyal\Downloads\Documents\python project
Enter lenghth rectangle one:12
Enter breadth rectangle one:10
Enter lenghth rectangle two:5
Enter breadth rectangle two:3
Rectangle one has largest area
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 4 QUESTION 4

AIM:

Create a class Time with private attributes hour, minute and second. Overload '+' operator to find sum of 2 time.

PROGRAM CODE:

Out4p4.py

```
class Time:
    def __init__(self,hour,minute,second):
        self.__hour=hour
        self.__minute=minute
        self.__second=second
    def __add__(self,other):
        h=self.__hour+other.__hour
        m=self.__minute+other.__minute
        s=self.__second+other.__second
        return str(h)+str(m)+str(s)
t1=Time(11,34,10)
t2=Time(20,34,50)
t3=t1+t2
print(t3)
```

OUTPUT:

RESULT : The program was executed successfully and output obtained.

LABCYCLE 4 QUESTION 5

AIM:

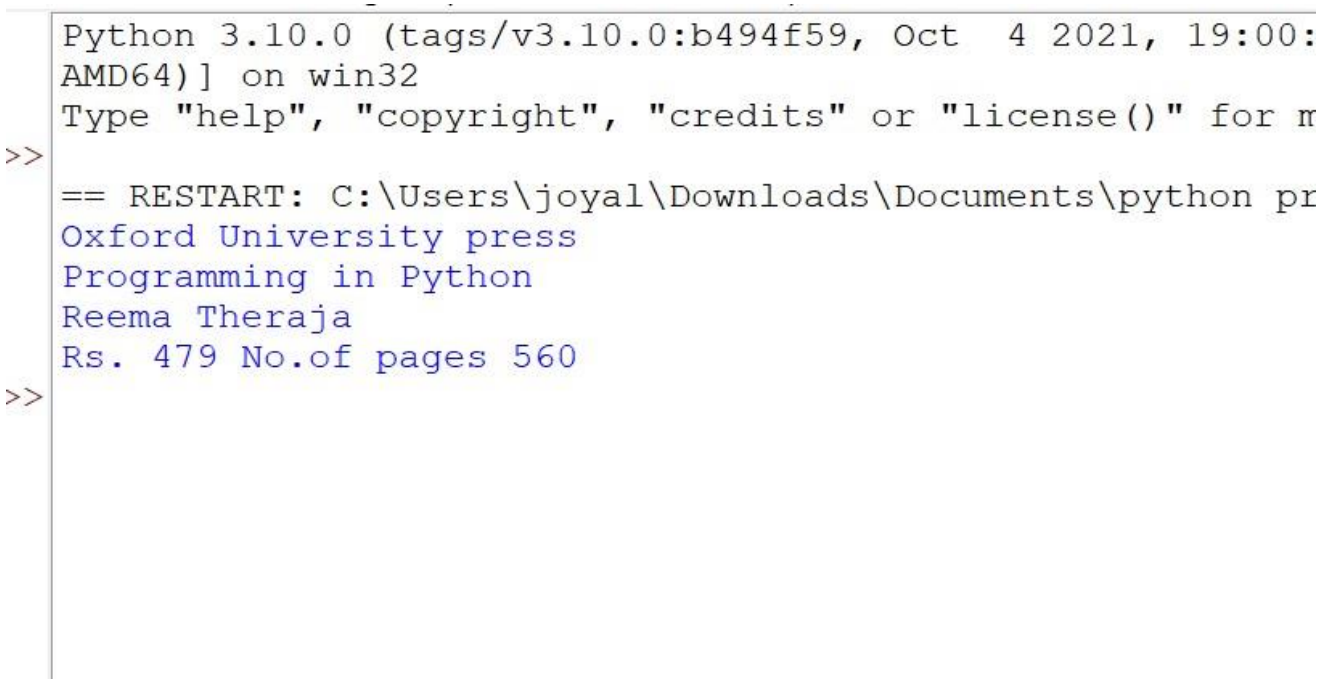
. Create a class Publisher (name). Derive class Book from Publisher with attributes title and author. Derive class Python from Book with attributes price and no_of_pages. Write a program that displays information about a Python book. Use base class constructor invocation and method overriding. **:**

PROGRAM CODE:

Out4p5.py

```
class Publisher:
    def __init__(self,name):
        self.name=name
    def disp(self):
        print(self.name)
class Book(Publisher):
    def __init__(self,name,title,auth):
        Publisher.__init__(self,name)
        self.title=title
        self.auth=auth
    def disp(self):
        print(self.title,self.author)
class Python(Book):
    def __init__(self,name,title,auth,price,nop):
        Book.__init__(self,name,title,auth)
        self.price=price
        self.nop=nop
    def disp(self):
        print(self.name)
        print(self.title)
        print(self.auth)
        print("Rs.",self.price,"No.of pages",self.nop)
obj=Python("Oxford University press","Programming in
Python","Reema Theraja",479,560)
obj.disp()
```

OUTPUT:



RESULT : The program was executed successfully and output obtained.

LABCYCLE 5 QUESTION 1

AIM:

Write a Python program to read a file line by line and store it into a list

PROGRAM CODE:

Out5p1.py	fr=open("test.txt","r") s=fr.read() w=s.split(" ") print(w)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\co5\co5_prg1.py =
['Besides', 'web', 'and', 'software', 'development,', 'Python', 'is', 'used', 'f
or', 'data', 'analytics,\nmachine', 'learning,', 'and', 'even', 'design.\nWe', '
take', 'a', 'closer', 'look', 'at', 'some', 'of', 'the', 'uses', 'of', 'Python,'
, '\nas', 'well', 'as', 'why', "it's", 'such', 'a', 'popular', 'and', 'versatile
', 'programming', 'language.']
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 5 QUESTION 2

AIM:

Python program to copy odd lines of one file to other

PROGRAM CODE:

Out5p2.py

```
fn = open('test1.txt', 'r')
fn1 = open('nfile.txt', 'w')
cont = fn.readlines()
type(cont)
for i in range(0, len(cont)):
        if(i%2!=0):
                fn1.write(cont[i])
        else:
                pass
fn1.close()
fn1 = open('nfile.txt', 'r')

cont1 = fn1.read()
print(cont1)

fn.close()
fn1.close()
```

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information
>>>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\co5\co5_
1.python programming is object oreinted
3.It is a general purpose language
5.it is a compact language
>>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 5 QUESTION 3

AIM:

Write a Python program to read each row from a given csv file and print a list of strings.

PROGRAM CODE:

Out5p3.py	import csv
	
	with open("csvtest.csv","r") as csv_file:
	  csv_reader=csv.reader(csv_file)
	
	  for line in csv_reader:
	  print(line)

OUTPUT:

```
Python 3.10.0 (tags/v3.10.0:b494159, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\co5\co5_prg3.py =
['Sally Whittaker', '2018', 'McCarren House', '312', '3.75']
['Belinda Jameson', '2017', 'Cushing House', '148', '3.52']
['Jeff Smith', '2018', 'Prescott House', '17-D', '3.20']
['Sandy Allen', '2019', 'Oliver House', '108', '3.48']
>>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 5 QUESTION 4

AIM:

Write a Python program to read specific columns of a given CSV file and print the content of the columns

PROGRAM CODE:

Out5p4.py	import csv
	
	with open("csvtest.csv","r") as csv_file:
	  csv_reader=csv.reader(csv_file)
	
	  for line in csv_reader:
	  print(line[2])#column 3

OUTPUT:

```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\co5\co5_prg
['Sally Whittaker', '2018', 'McCarren House', '312', '3.75']
['Belinda Jameson', '2017', 'Cushing House', '148', '3.52']
['Jeff Smith', '2018', 'Prescott House', '17-D', '3.20']
['Sandy Allen', '2019', 'Oliver House', '108', '3.48']
>>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\co5\co5_prg
McCarren House
Cushing House
Prescott House
Oliver House
>>
```

RESULT : The program was executed successfully and output obtained.

LABCYCLE 5 QUESTION 5

AIM:

Write a Python program to write a Python dictionary to a csv file. After writing the CSV file read the CSV file and display the content.

PROGRAM CODE:

Out5p5.py

```
#dictionary to csv
import csv
dict_value = [
{"name":"Manas","age":27,"course":"MBA"},
{"name":"Biju","age":23,"course":"MCA"},
{"name":"Anandhu","age":20,"course":"BSC"}
]
fields = ["name","age","course"]
with open('dictconverted.csv','w') as csvfile:
    writer = csv.DictWriter(csvfile,fieldnames=fields)
    writer.writeheader()
    writer.writerows(dict_value)
    csvfile.close()

with open('dictconverted.csv','r') as csvfiles:
    readerobj = csv.reader(csvfiles)
    for rows in readerobj:
        print(rows)
```

OUTPUT:

```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more informatio
>
== RESTART: C:\Users\joyal\Downloads\Documents\python projects\co5\co5
['name', 'age', 'course']
[]
['Manas', '27', 'MBA']
[]
['Biju', '23', 'MCA']
[]
['Anandhu', '20', 'BSC']
[]
>
```

RESULT : The program was executed successfully and output obtained.