FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)^{TM}

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FOCUS ON EXCELLENCE

20MCA131 PROGRAMMING LAB

LABORATORY RECORD

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MARCH 2022

FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)™

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CERTIFICATE

This is to certify that this is a Bonafide record of the Practical work done by ***ANNAROSE VARGHESE****(FIT21MCA-2027) in the* ***20MCA131 PROGRAMMING LAB*** *Laboratory towards the partial fulfilment for the award of the Master Of Computer Applications during the academic year 2021-2022.*

Signature of Staff in Charge
Name:

Signature of H O D
Name:

Date of University practical examination ………………………

Signature of
Internal Examiner

Signature of
External Examiner

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30	**29/01/2022**	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)		
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31	**13/01/2022**	Create Rectangle class with attributes length and breadth and methods to find area and perimeter. Compare two Rectangle objects by their area.		
32	**13/01/2022**	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.		

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35	**20/01/2022**	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.		
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36	**03/02/2022**	Write a Python program to read a file line by line and store it into a list.		
37	**03/02/2022**	Write a Python program to read each row from a given csv file and print a list of strings.		

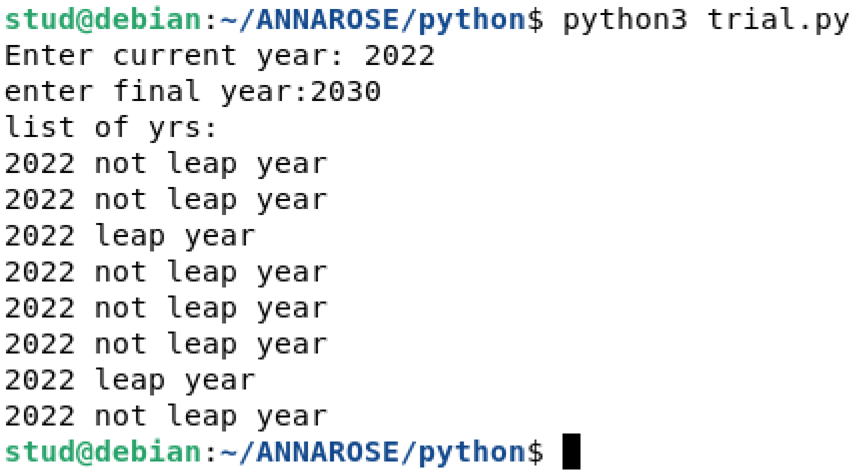
COURSE OUTCOME 1

1) Display future leap years from current year to a final year entered by User.

Source code

```
print("print leap year
between two given years");
startyear=2021
endyear=int(input("Enter end year")) print("list of leap years")
for year in
        range(startyear,endyear
        ): if(0==year%4):
                print(year)
```

Output



```
stud@debian:~/ANNAROSE/python$ python3 trial.py
Enter current year: 2022
enter final year:2030
list of yrs:
2022 not leap year
2022 not leap year
2022 leap year
2022 not leap year
2022 not leap year
2022 not leap year
2022 leap year
2022 not leap year
stud@debian:~/ANNAROSE/python$ 
```

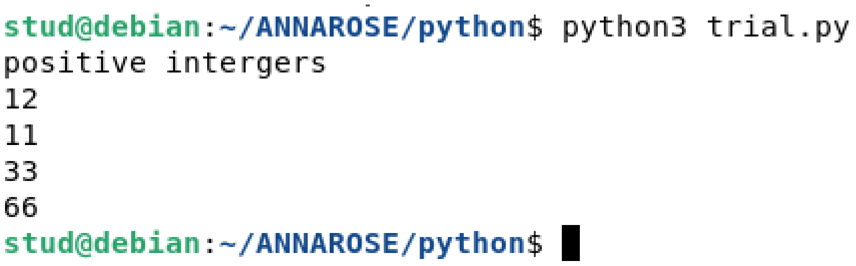
2) List comprehensions:

a. Generate positive list of numbers from a given list of integers.

Source code

```
list= [12,-5,-6,-4,11,33,66]
print("Elements in the list are:",list) print("Positive numbers in the list")
for num in list:
    if num>=0:
            print(num)
```

Output



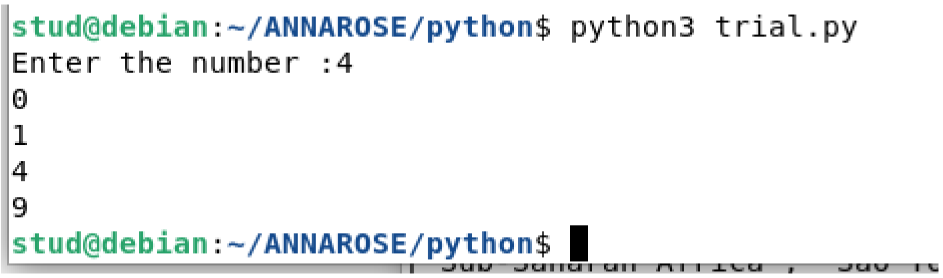
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
positive intergers
12
11
33
66
stud@debian:~/ANNAROSE/python$ 
```

b. Square of N numbers

Source code

```
n=int(input('Enter range:'))
for num in range(1,n+1):
    num=num*num
    print(num)
```

Output



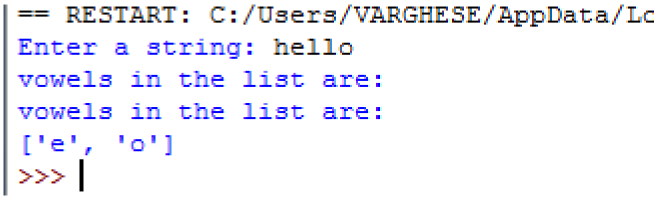
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
Enter the number :4
0
1
4
9
stud@debian:~/ANNAROSE/python$ 
```

c. Form a list of vowels selected from a given word.

Source code

```
s=input("Enter a string: ")
list=[]
for i in s:
    if i in "aeiouAEIOU":
            list.append(i)
print("vowels in the list are:")
print(list)
```

Output



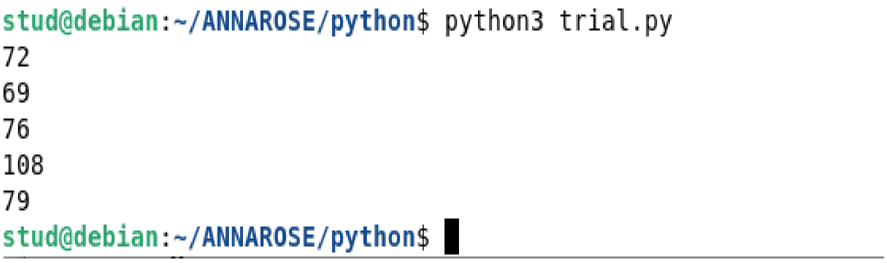
```
== RESTART: C:/Users/VARGHESE/AppData/Lc
Enter a string: hello
vowels in the list are:
vowels in the list are:
['e', 'o']
>>> 
```

d. **List ordinal values of each element of a word.**

Source code

```
S=("HELlO")
    for i in S:
        x=ord(i)
  print(x)
```

Output



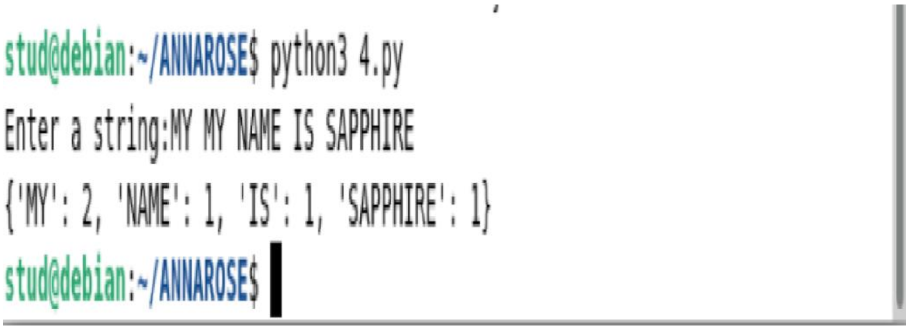
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
72
69
76
108
79
stud@debian:~/ANNAROSE/python$ 
```

3) Count the occurrences of each word in a line of text.

Source code

```
list1=[]
list2=[]
x=input("Enter a line of text:")
for i in x.split(" "):
          list1.append(i)
          if i not in list2:
                     list2.append(i)
for i in list2:
print(i,"\t",list1.count(i))
```

Output



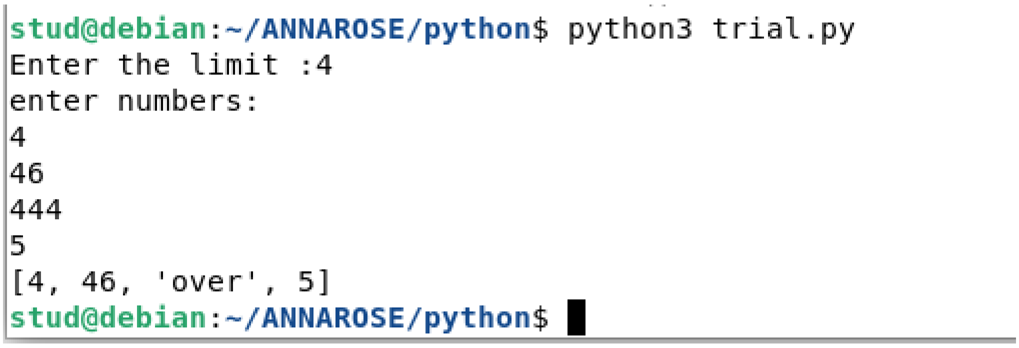
```
stud@debian:~/ANNAROSE$ python3 4.py
Enter a string:MY MY NAME IS SAPPHIRE
{'MY': 2, 'NAME': 1, 'IS': 1, 'SAPPHIRE': 1}
stud@debian:~/ANNAROSE$
```

4) Prompt the user for a list of integers. For all values greater than 100, store ‘over’ instead.

Source code

```
list=[]
while True:
 n=int(input('Enter an integer: '))
 if(n<=100):
          list.append(n)
 else:
          list.append('over')
          print(list)
```

Output



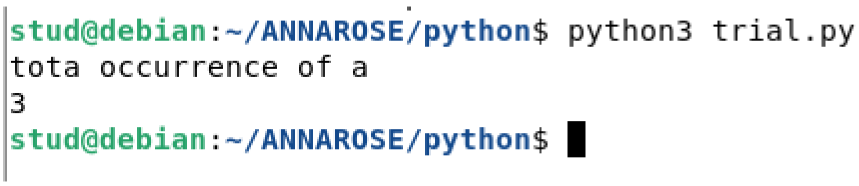
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
Enter the limit :4
enter numbers:
4
46
444
5
[4, 46, 'over', 5]
stud@debian:~/ANNAROSE/python$
```

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

Source code

```
 list=[ 'sweat','and','tears'] print("Elements in the list are:")
 print(list)
 count=0
 for word in list:
          for i in word:
                    if i=='a':
                              count+=1
 print("count of 'a' is:", count)
```

Output



```
stud@debian:~/ANNAROSE/python$ python3 trial.py
tota occurrence of a
3
stud@debian:~/ANNAROSE/python$ 
```

6) Enter 2 lists of integers.Check

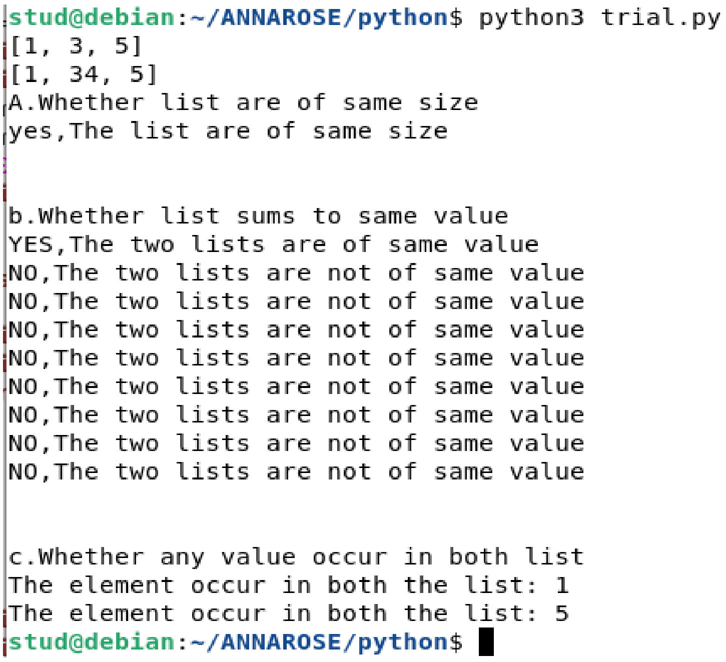
- **a. whether list are of same length**
- **b. whetherlist sums of same value**
- **c. whether any value occur in both.**

Source code

```
l1=[1,2,3,4]
l2=[1,3,2]
print("List 1",l1)
print("List 2",l2)
x=len(l1)
y=len(l2)
if x==y:
 print("List are of same length")
else:
 print("Length of lists are different")
```

```
s1=0
s2=0
for i in range(x):
 s1=s1+l1[i]
print("Sum of elements of List1:",s1)
for j in range(y):
 s2=s2+l2[j]
print("Sum of elememts of List2:",s2)
if s1==s2:
 print("Sum of list elements is same")
else:
 print("Sum of list elements is not same")
print("Common elements are:")
for i in range(x):
 for j in range(y):
          if l1[i]==l2[j]:
                   print(l1[i])
```

Output



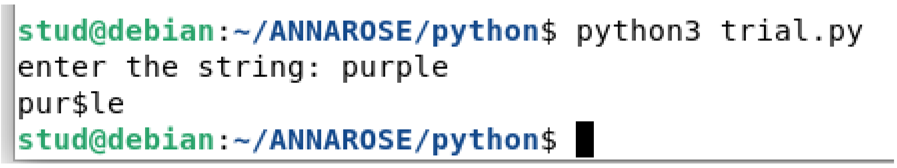
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
[1, 3, 5]
[1, 34, 5]
A.Whether list are of same size
yes,The list are of same size


b.Whether list sums to same value
YES,The two lists are of same value
NO,The two lists are not of same value
NO,The two lists are not of same value
NO,The two lists are not of same value
NO,The two lists are not of same value
NO,The two lists are not of same value
NO,The two lists are not of same value
NO,The two lists are not of same value
NO,The two lists are not of same value


c.Whether any value occur in both list
The element occur in both the list: 1
The element occur in both the list: 5
stud@debian:~/ANNAROSE/python$ 
```

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

Source code

```
str=input("Enter a string: ")
print("Original string is: ",str)
char=str[0]
str=str.replace(char,'$')
str=char+str[1:]
print("String: ",str)
```

Output



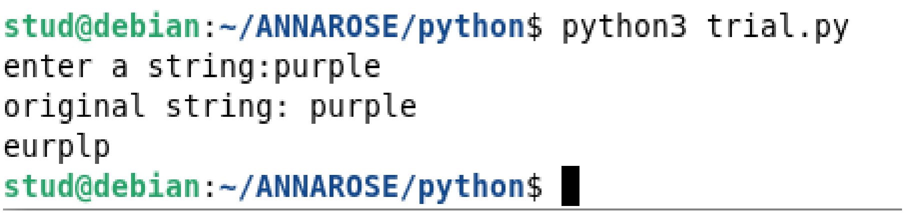
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
enter the string: purple
pur$le
stud@debian:~/ANNAROSE/python$ 
```

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

Source code

```
s=input("Enter a string: ")
t=s[0]
t1=s[-1]
n=len(s)
ns=t1+s[1:n-1]+t
print(ns)
```

Output



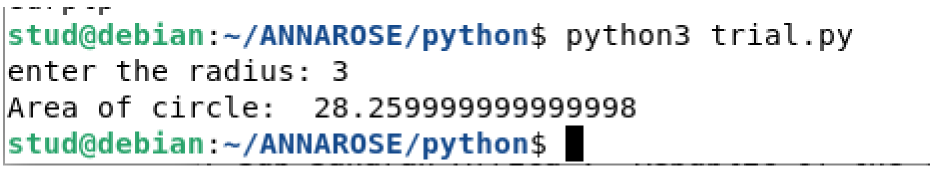
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
enter a string:purple
original string: purple
eurplp
stud@debian:~/ANNAROSE/python$ 
```

9) Accept the radius from the user and find the area of the circle.

Source code

```
r=int(input('Enter the radius: '))
A=3.14*r*r
print(A)
```

Output



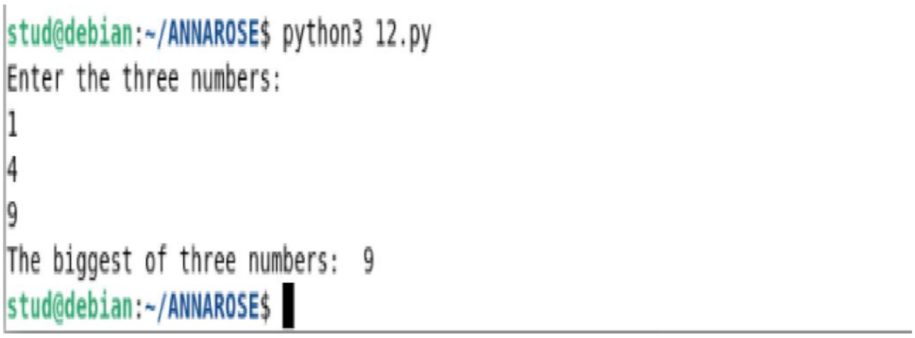
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
enter the radius: 3
Area of circle:  28.259999999999998
stud@debian:~/ANNAROSE/python$ 
```

10) Find the biggest of 3 numbers

Source code

```
a=int(input('Enter first number:'))
b=int(input('Enter second number:'))
c=int(input('Enter third number:'))
if a>b and a>c:
 print(a)
if b>a and b>c:
 print(b)
if c>a and c>b:
 print(c)
```

Output



```
stud@debian:~/ANNAROSE$ python3 12.py
Enter the three numbers:
1
4
9
The biggest of three numbers:  9
stud@debian:~/ANNAROSE$ 
```

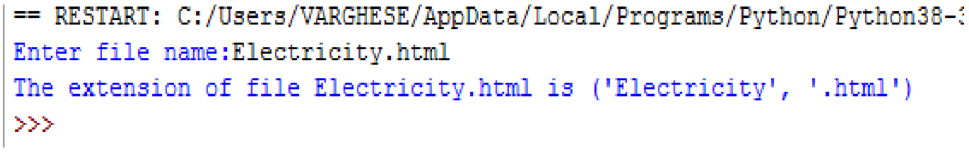
11) Accept a file name from user and print extension of that.

Source code

```
import os
a=input("Enter file name:")
```

print("The extension of file",a,"is",os.path.splitext(a))

Output



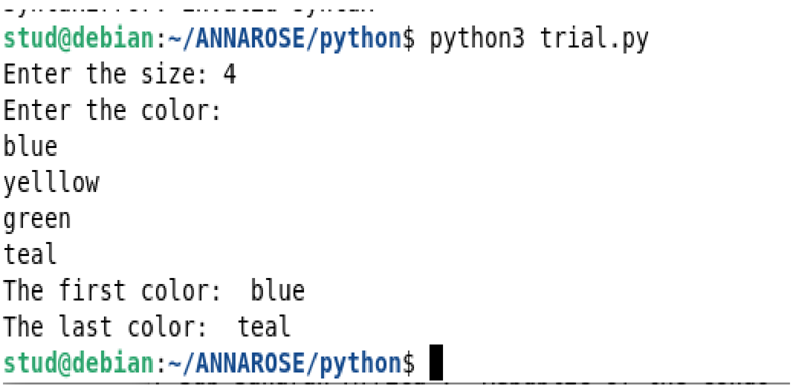
```
== RESTART: C:/Users/VARGHESE/AppData/Local/Programs/Python/Python38-
Enter file name:Electricity.html
The extension of file Electricity.html is ('Electricity', '.html')
>>>
```

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

Source code

```
colors=[]
str=(input("Enter color names:"))
for i in str.split(','):
 colors.append(i)
print(colors)
print("first color:",colors[0],"Last color:",colors[-1])
```

Output



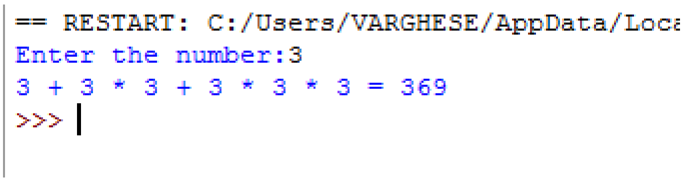
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
Enter the size: 4
Enter the color:
blue
yelllow
green
teal
The first color:  blue
The last color:  teal
stud@debian:~/ANNAROSE/python$
```

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

Source code

```
n=int(input("Enter the number:"))
a=n*1
b=n*11
c=n*111
s=a+b+c
print(n,"+",n,"*",n,"+",n,"*",n,"*",n,"=",s)
```

Output



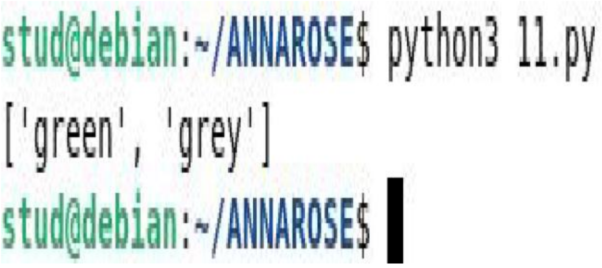
```
== RESTART: C:/Users/VARGHESE/AppData/Loca
Enter the number:3
3 + 3 * 3 + 3 * 3 * 3 = 369
>>> |
```

14) Print out all color from color-list1 not contained in color-list2

Source code

```
l1=[ 'blue', 'green', 'grey]
l2=[ 'blue', 'pink', 'red']
print(l1)
print(l2)
print("Colors that are not in l1:
")
for i in l1:
 if i not in l2:
          print(i)
```

Output



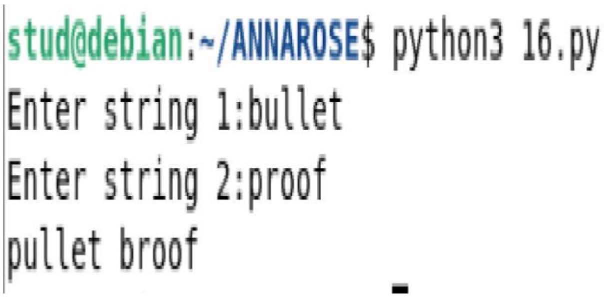
```
stud@debian:~/ANNAROSE$ python3 l1.py
['green', 'grey']
stud@debian:~/ANNAROSE$
```

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

Source code

```
str1=input("Enter first string:")
str2=input("Enter second string:")
str3=str2[0]+str1[1:]+" "+str1[0]+str2[1:]
print(str3)
```

Output



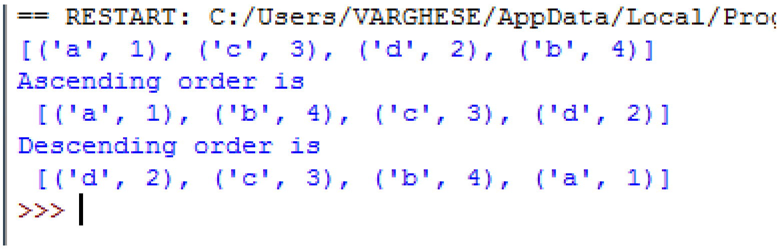
```
stud@debian:~/ANNAROSE$ python3 16.py
Enter string 1:bullet
Enter string 2:proof
pullet broof
```

16) Sort dictionary in ascending and descending order.

Source code

```
d1={"a":1,"c":3,"d":2,"b":4}
l=list(d1.items())
print(l)
l.sort()
print("Ascending order is\n",l)
l=list(d1.items())
l.sort(reverse=True)

print("Descending order is\n",l)
```

Output



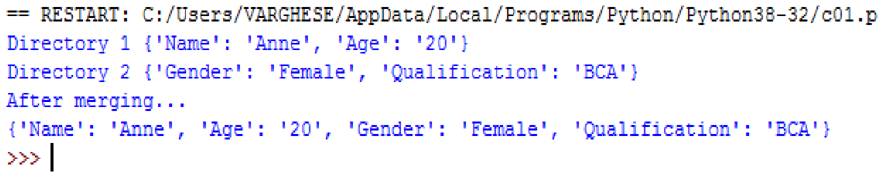
```
== RESTART: C:/Users/VARGHESE/AppData/Local/Pro
[('a', 1), ('c', 3), ('d', 2), ('b', 4)]
Ascending order is
 [('a', 1), ('b', 4), ('c', 3), ('d', 2)]
Descending order is
 [('d', 2), ('c', 3), ('b', 4), ('a', 1)]
>>> 
```

17) Merge two dictionaries.

Source code

```
D1={"Name":"Ann mariya","Age":"20"}
print("Directory 1",D1)
D2={"Gender":"Female","Qualification":"BCA"}
print("Directory 2",D2)
D1.update(D2)
print("After merging...")
print(D1)
```

Output



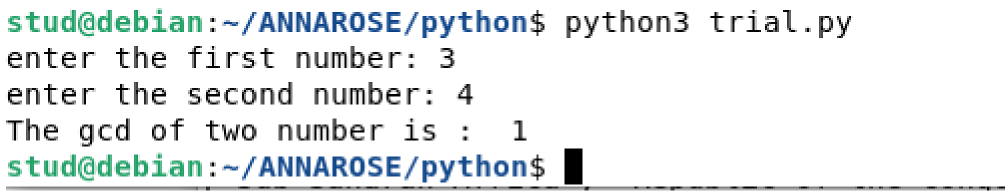
```
== RESTART: C:/Users/VARGHESE/AppData/Local/Programs/Python/Python38-32/c01.p
Directory 1 {'Name': 'Anne', 'Age': '20'}
Directory 2 {'Gender': 'Female', 'Qualification': 'BCA'}
After merging...
{'Name': 'Anne', 'Age': '20', 'Gender': 'Female', 'Qualification': 'BCA'}
>>> |
```

18) Find gcd of 2 numbers

Source code

```
a=int(input("Enter first number: "))
b=int(input("Enter first number: "))
x=min(a,b)
gcd=0
for i in range (1,x+1):
 if((a%x==0) and (b%x==0)):
        gcd=i
print("GCD is",i)
```

Output



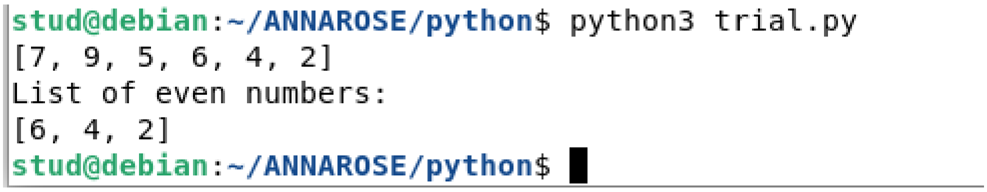
```
stud@debian:~/ANNAROSE/python$ python3 trial.py
enter the first number: 3
enter the second number: 4
The gcd of two number is :  1
stud@debian:~/ANNAROSE/python$
```

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

Source code

```
l1=[1,2,3,4,5,6,7,8,9,10]
print(l1)
l2=[]
for i in range(len(l1)):
 if l1[i]%2!=0:
        l2.append(l1[i])
print("List after removing even elements")
print(l2)
```

Output



```
stud@debian:~/ANNAROSE/python$ python3 trial.py
[7, 9, 5, 6, 4, 2]
List of even numbers:
[6, 4, 2]
stud@debian:~/ANNAROSE/python$ 
```

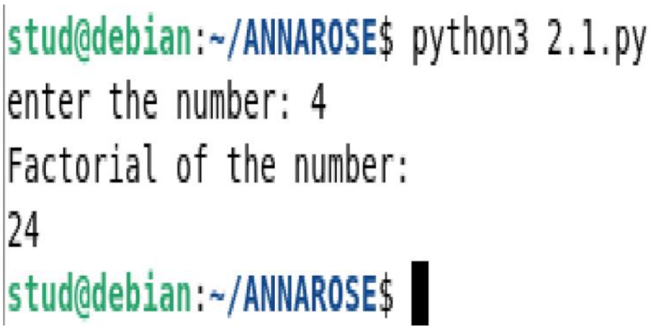
COURSE OUTCOME 2

20) Program to find the factorial of a number.

Source code

```
n=int(input('Enter a number:'))
fact=1
for i in range (1,n+1):
   fact=fact*i
print(fact)
```

Output



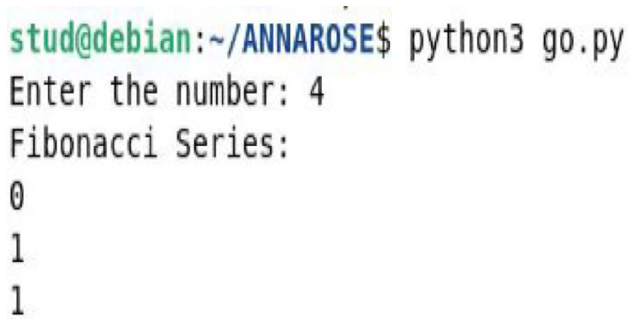
```
stud@debian:~/ANNAROSE$ python3 2.1.py
enter the number: 4
Factorial of the number:
24
stud@debian:~/ANNAROSE$ 
```

21) Generate fibonacci series of N terms.

Source code

```
n=int(input('Enter a limit:'))
a=0
b=1
print(a)
print(b)
for i in range (2,n):
        c=a+b
        print(c)
        a=b
        b=c
```

Output



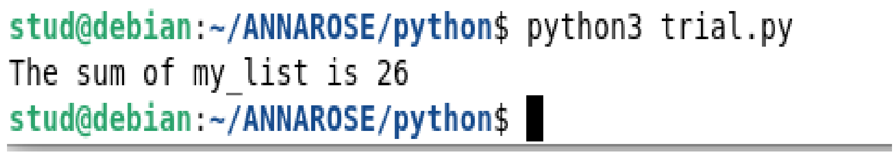
```
stud@debian:~/ANNAROSE$ python3 go.py
Enter the number: 4
Fibonacci Series:
0
1
1
```

22) **Find the sum of all items in a list.**

Source code

```
list=[ 3,5,7,9,2]
print("List elements are:",list)
sum=0
for i in list:
        sum=sum+i
print("The sum of list elements is:",sum)
```

Output



```
stud@debian:~/ANNAROSE/python$ python3 trial.py
The sum of my_list is 26
stud@debian:~/ANNAROSE/python$ 
```

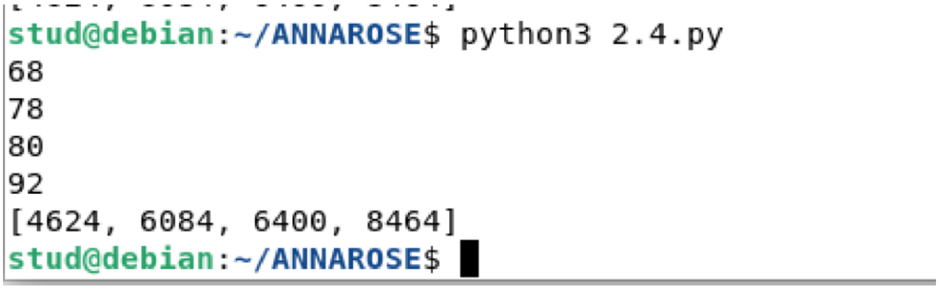
23) **Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.**

Source code

```
limit1=1000
limit2=9999
list1=[]
for i in range(limit1,limit2):
   j=i
   digit=[]
```

```
    while(i!=0):
        digit.append(i%10)
        i=int(i/10)
    count=0
    for n in digit:
        if n%2==0:
            count=count+1
        if count==4:
            for k in range(31,100):
                if((k**2)==j):
                    list1.append(j)
                    print(k)
print(list1)
```

Output



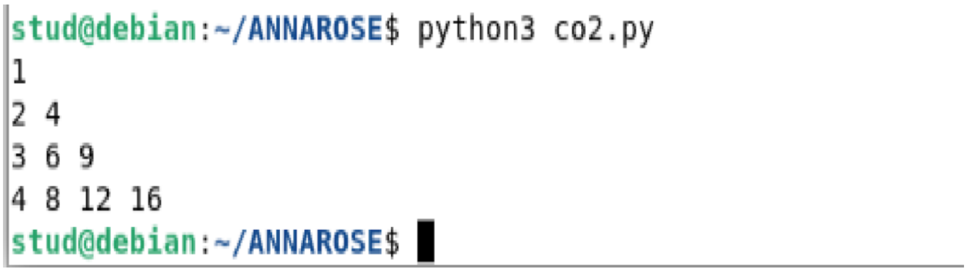
```
stud@debian:~/ANNAROSE$ python3 2.4.py
68
78
80
92
[4624, 6084, 6400, 8464]
stud@debian:~/ANNAROSE$ 
```

24) Display the given pyramid with step number accepted from user.

Source code

```
n=int(input("Enter a number:"))
for j in range(0,n+1):
    for i in range(1,j+1):
        i=j*i
        print(i,end=" ")
    print("\n")
```

Output



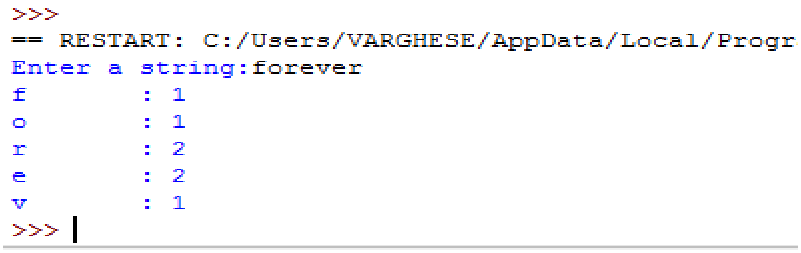
```
stud@debian:~/ANNAROSE$ python3 co2.py
1
2 4
3 6 9
4 8 12 16
stud@debian:~/ANNAROSE$ 
```

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

Source code

```
string=input("Enter a string:")
list1=[]
for i in string:
   if i not in list1:
            list1.append(i)
for i in list1:
   count=0
   for j in string:
            if(i==j):
                     count=count+1
   print(i,"\t:",count)
```

Output



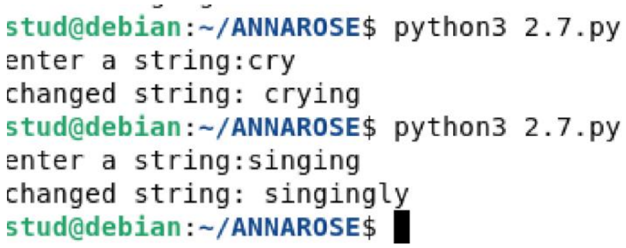
```
>>> 
== RESTART: C:/Users/VARGHESE/AppData/Local/Progr
Enter a string:forever
f        : 1
o        : 1
r        : 2
e        : 2
v        : 1
>>> 
```

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

Source code

```
string=input("Enter a string:")
if(string[-3:]=="ing"):
          string+="ly"
else:
        string+="ing"
print(string)
```

Output



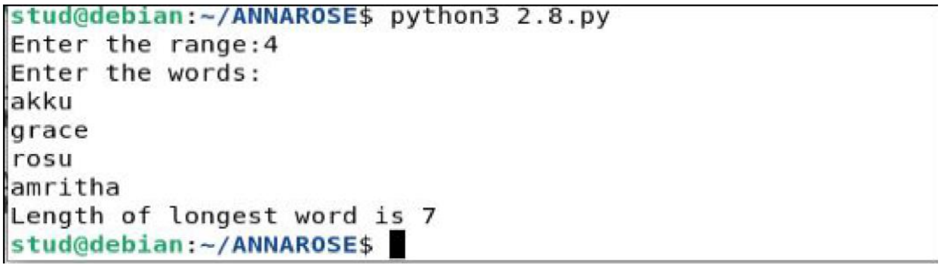
```
stud@debian:~/ANNAROSE$ python3 2.7.py
enter a string:cry
changed string: crying
stud@debian:~/ANNAROSE$ python3 2.7.py
enter a string:singing
changed string: singingly
stud@debian:~/ANNAROSE$ 
```

27) Accept a list of words and return length of longest word.

Source code

```
lis=[]
n=int(input("Enter the range:"))
print("Enter the words:")
for i in range(0,n):
        lis.append(input(""))
longest=lis[0]
for i in range(1,n):
        if(len(lis[i])>len(longest)):
          longest=lis[i]
print("Length of longest word is",len(longest))
```

Output



```
stud@debian:~/ANNAROSE$ python3 2.8.py
Enter the range:4
Enter the words:
akku
grace
rosu
amritha
Length of longest word is 7
stud@debian:~/ANNAROSE$ 
```

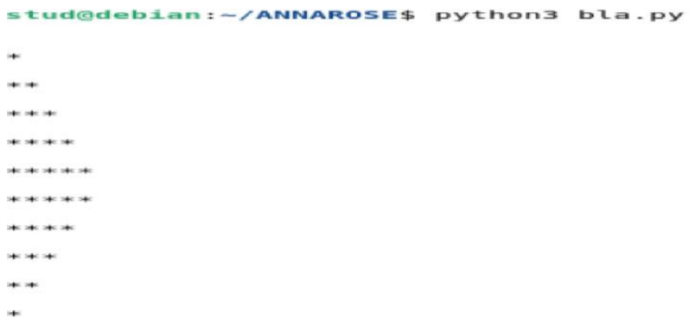
28) Construct following pattern using nested loop.

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

* * * * *

* * * *

* * *

* *

*
```

Source code

```
for i in range(1,6):
   for j in range(1,i+1):
            print("*",end=" ")
   print("\n")
for i in range(4,0,-1):
   for j in range(1,i+1):
            print("*",end=" ")
   print("\n")
```

Output



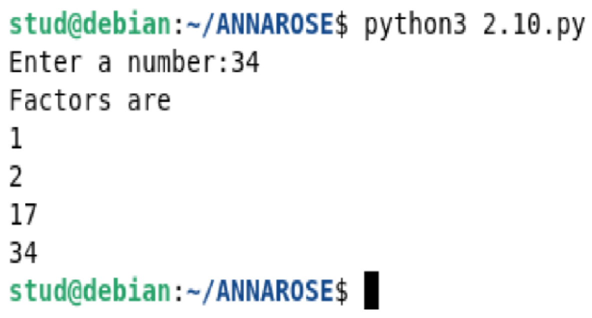
```
stud@debian:~/ANNAROSE$ python3 bla.py
*
* *
* * *
* * * *
* * * * *
* * * * *
* * * *
* * *
* *
*
```

29) Generate all factors of a number.

Source code

```
n=int(input("Enter a number:"))
print("Factors are")
for i in range(1,n+1):
   if(n%i==0):
            print(i)
```

Output



```
stud@debian:~/ANNAROSE$ python3 2.10.py
Enter a number:34
Factors are
1
2
17
34
stud@debian:~/ANNAROSE$ 
```

COURSE OUTCOME 3

30) 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)

Source code

Graphice\circle.py

```
from math import pi
def area_circle(radius):
   return pi*radius*radius
def perimeter_circle(radius):
   return 2*pi*radius
```

Graphics\rectangle.py

```
def area_rec(length,width):
   return length*width
def perimeter_rec(length,width):
   return 2*(length+width)
```

Graphics\tdgraphics\cuboid.py

```
def area_cuboid(l,b,h):
   return 2*(l*h + b*h + l*b)
def volume_cuboid(l,b,h):
   return l*b*h
```

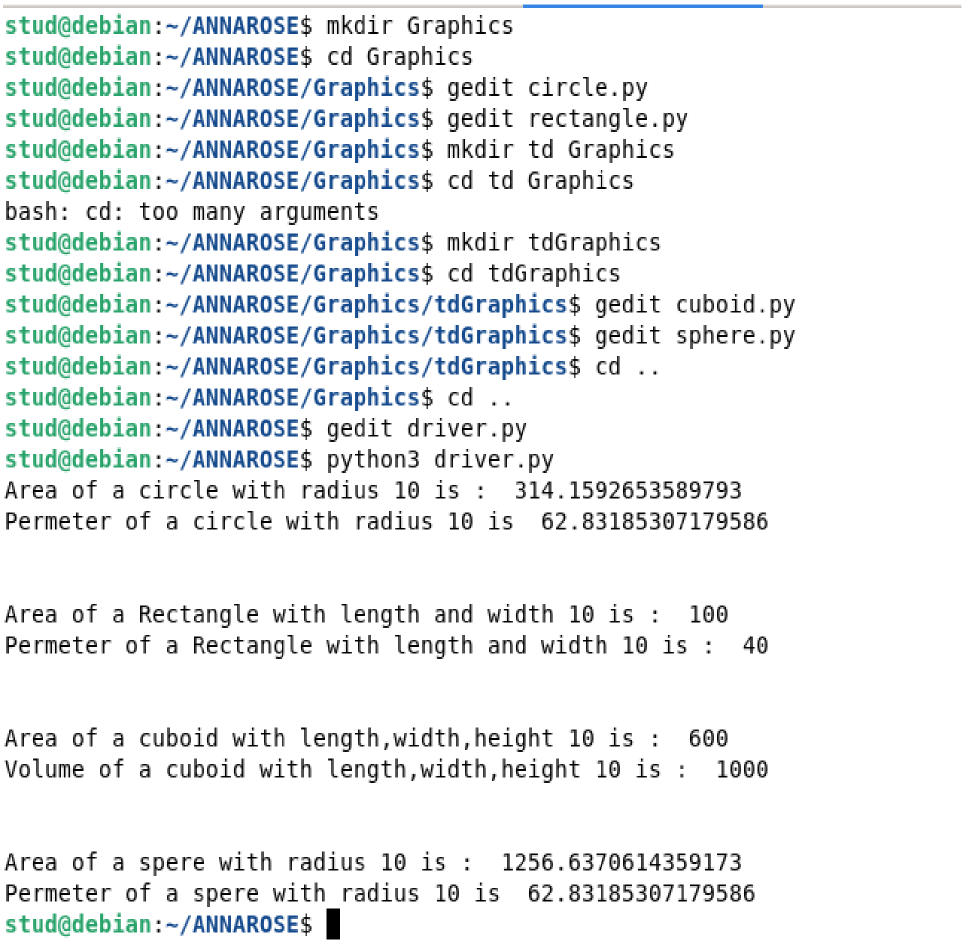
Graphics\tdgraphics\sphere.py

```
from math import pi

def area_sphere(radius):

    return 4*(pi*radius*radius)

def perimeter_sphere(radius):

    return 2*pi*radius
```

graphics.py (driver code)

```
import Graphics

from Graphics import circle,rectangle

from Graphics.tdgraphics import cuboid,sphere

from Graphics.circle import *

print("Area of a circle with radius 10 is : ",circle.area_circle(10))

print("Permeter of a circle with radius 10 is ",circle.perimeter_circle(10))

print("\n")


print("Area of a Rectangle with length and width 10 is :
        ",rectangle.area_rec(10,10))

print("Permeter of a Rectangle with length and width 10 is :
        ",rectangle.perimeter_rec(10,10))

print("\n")


print("Area of a  cuboid with length,width,height 10 is :
        ",cuboid.area_cuboid(10,10,10))

print("Volume of a cuboid with length,width,height 10 is :
        ",cuboid.volume_cuboid(10,10,10))

print("\n")


print("Area of a spere with radius 10 is : ",sphere.area_sphere(10))

print("Permeter of a spere with radius 10 is ",sphere.perimeter_sphere(10))
```

Output



```
stud@debian:~/ANNAROSE$ mkdir Graphics
stud@debian:~/ANNAROSE$ cd Graphics
stud@debian:~/ANNAROSE/Graphics$ gedit circle.py
stud@debian:~/ANNAROSE/Graphics$ gedit rectangle.py
stud@debian:~/ANNAROSE/Graphics$ mkdir td Graphics
stud@debian:~/ANNAROSE/Graphics$ cd td Graphics
bash: cd: too many arguments
stud@debian:~/ANNAROSE/Graphics$ mkdir tdGraphics
stud@debian:~/ANNAROSE/Graphics$ cd tdGraphics
stud@debian:~/ANNAROSE/Graphics/tdGraphics$ gedit cuboid.py
stud@debian:~/ANNAROSE/Graphics/tdGraphics$ gedit sphere.py
stud@debian:~/ANNAROSE/Graphics/tdGraphics$ cd ..
stud@debian:~/ANNAROSE/Graphics$ cd ..
stud@debian:~/ANNAROSE$ gedit driver.py
stud@debian:~/ANNAROSE$ python3 driver.py
Area of a circle with radius 10 is :  314.1592653589793
Permeter of a circle with radius 10 is  62.83185307179586


Area of a Rectangle with length and width 10 is :  100
Permeter of a Rectangle with length and width 10 is :  40


Area of a cuboid with length,width,height 10 is :  600
Volume of a cuboid with length,width,height 10 is :  1000


Area of a spere with radius 10 is :  1256.6370614359173
Permeter of a spere with radius 10 is  62.83185307179586
stud@debian:~/ANNAROSE$ 
```

COURSE OUTCOME 4

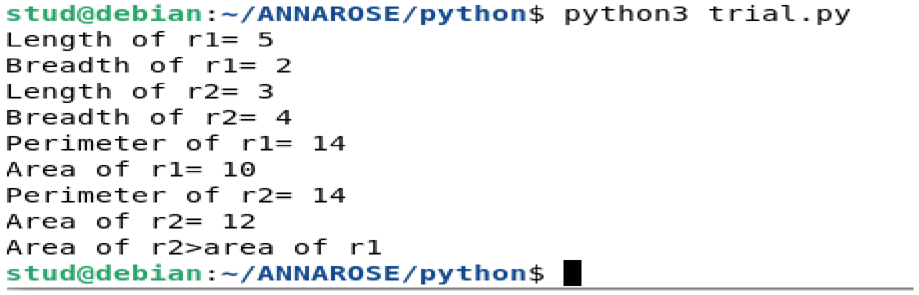
31) Create Rectangle class with attributes length and breadth and methods to find area and perimeter. Compare two Rectangle objects by their area.

Source code

```
class Rectangle:

  def __init__(self,length,breadth):

        self.length = length

        self.breadth = breadth

  def area(self):

        return self.length * self.breadth
```

```
    def perimeter(self):
                return 2*(self.length + self.breadth)
l=int(input("Enter length of rectangle1: "))
b=int(input("Enter breadth of rectangle1: "))
rect1 = Rectangle(l,b)
a1=rect1.area()
p1=rect1.perimeter()
print("Area:",a1)
print("Perimeter:",p1)
l=int(input("Enter length of rectangle2: "))
b=int(input("Enter breadth of rectangle2: "))
rect2 = Rectangle(l,b)
a2=rect2.area()
p2=rect2.perimeter()
print("Area:",a2)
print("Perimeter:",p2)
if (a1>a2):
    print("First rectangle is larger")
elif a1==a2:
    print("Rectangles are of same area")
else:
    print("Second rectangle is larger")
```

Output



```
stud@debian:~/ANNAROSE/python$ python3 trial.py
Length of r1= 5
Breadth of r1= 2
Length of r2= 3
Breadth of r2= 4
Perimeter of r1= 14
Area of r1= 10
Perimeter of r2= 14
Area of r2= 12
Area of r2>area of r1
stud@debian:~/ANNAROSE/python$ 
```

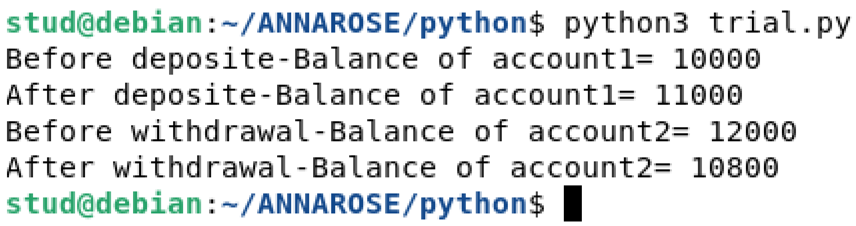
32) Create a Bank account with members account number, name, type of account and balance. Write constructor and methods to deposit at the bank and withdraw an amount from the bank.

Source code

```
class bank:
def __init__(self,acc_no,name,acc_type,bal):
          self.acc_no=acc_no
          self.name=name
          self.acc_type=acc_type
          self.bal=bal
  def deposit(self):
          self.bal=self.bal+y
          return self.bal
  def withdraw(self):
          return self.bal-y
  def display_balance(self):
          return self.bal
acc1=bank("b11","Ann","Savings",50000)
while(1):
  print("1.Deposit\n2.Withdraw\n3.Display balance\n4.Exit\n")
  ch=int(input("Enter your choice:"))
```

```
    if ch==1:
            amt=int(input("Enter the amount:"))
            b=acc1.deposit(amt)
            print("Current balance:",b)
    elif ch==2:
            amt=int(input("Enter the amount:"))
            b=acc1.withdraw(amt)
            print("Current balance:",b)
    elif ch==3:
            cb=acc1.display_balance()
            print("Current balance:",cb)
    elif ch==4:
            exit(1)
    else:
            print("Invalid choice")
```

Output



```
stud@debian:~/ANNAROSE/python$ python3 trial.py
Before deposite-Balance of account1= 10000
After deposite-Balance of account1= 11000
Before withdrawal-Balance of account2= 12000
After withdrawal-Balance of account2= 10800
stud@debian:~/ANNAROSE/python$ 
```

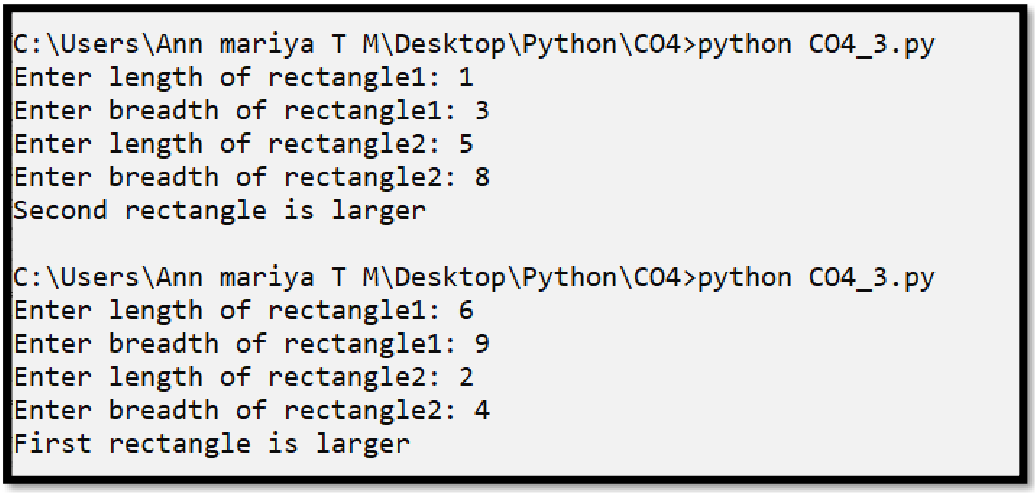
33) Create a class Rectangle with private attributes length and width. Overload ‘<’ operator to compare the area of 2 rectangles.

Source code

```
class Rectangle:
    def __init__(self,length,breadth):
            self.__length = length
```

```
        self.__breadth = breadth

    def __lt__ (self,rect2):

        if self.__length*self.__breadth < rect2.__length*rect2.__breadth:

            return True

        else:

            return False

l=int(input("Enter length of rectangle1: "))

b=int(input("Enter breadth of rectangle1: "))

rect1 = Rectangle(l,b)

l=int(input("Enter length of rectangle2: "))

b=int(input("Enter breadth of rectangle2: "))

rect2 = Rectangle(l,b)

if rect1 < rect2:

    print("Second rectangle is larger")

else:

    print("First rectangle is larger")
```

output



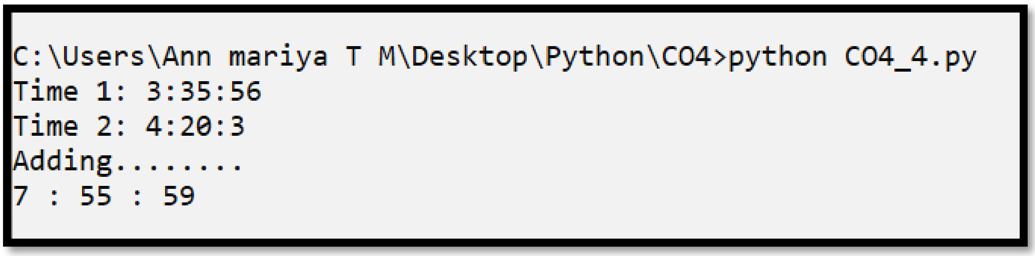
```
C:\Users\Ann mariya T M\Desktop\Python\CO4>python CO4_3.py
Enter length of rectangle1: 1
Enter breadth of rectangle1: 3
Enter length of rectangle2: 5
Enter breadth of rectangle2: 8
Second rectangle is larger

C:\Users\Ann mariya T M\Desktop\Python\CO4>python CO4_3.py
Enter length of rectangle1: 6
Enter breadth of rectangle1: 9
Enter length of rectangle2: 2
Enter breadth of rectangle2: 4
First rectangle is larger
```

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

Source code

```
class Time:
   def __init__(self,hr,min,sec):
           self.__hr=hr
           self.__min=min
           self.__sec=sec
   def __add__(t1,t2):
           hr=t1.__hr+t2.__hr
           min=t1.__min+t2.__min
           sec=t1.__sec+t2.__sec
           print(hr,":",min,":",sec)
t1=Time(3,35,56)
t2=Time(4,20,3)
print('Time 1: 3:35:56')
print('Time 2: 4:20:3')
print('Adding........')
t1+t2
```

Output



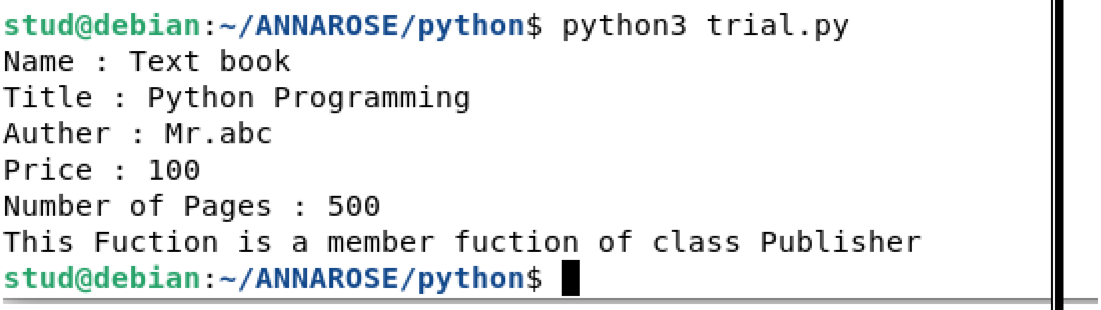
```
C:\Users\Ann mariya T M\Desktop\Python\CO4>python CO4_4.py
Time 1: 3:35:56
Time 2: 4:20:3
Adding........
7 : 55 : 59
```

35) 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.

Source code

```
class Publisher(object):
    def __init__(self,name):
        self.name=name
    def display1(self):
        print(self.title)
        print(self.author)
class Book(Publisher):
    def __init__(self,name,title,author):
        super().__init__(name)
        self.title=title
        self.author=author
    def display2(self):
        #super().display1()
        print(self.title)
        print(self.author)
class Python(Book):
    def __init__(self,name,title,author,price,no_of_pages):
        super().__init__(name,title,author)
        self.price=price
        self.no_of_pages=no_of_pages
    def display3(self):
        super().display2()
        print(self.price)
        print(self.no_of_pages)
p=Python("ABC Publications","Taming Python","jeeva jose",100,500)
p.display3()
q=Python("XYZ Publications","Java programming","E
Balagurusami",500,1200)
q.display3()
```

Output



```
stud@debian:~/ANNAROSE/python$ python3 trial.py
Name : Text book
Title : Python Programming
Auther : Mr.abc
Price : 100
Number of Pages : 500
This Fuction is a member fuction of class Publisher
stud@debian:~/ANNAROSE/python$ 
```

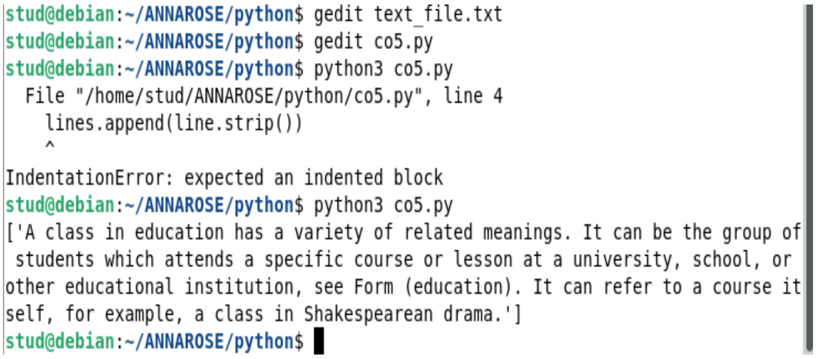
COURSE OUTCOME 5

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

Source code

```
fp=open("text_file.txt",'r')
lines=[]
for line in fp:
        lines.append(line.strip())
print(lines)
```

Output



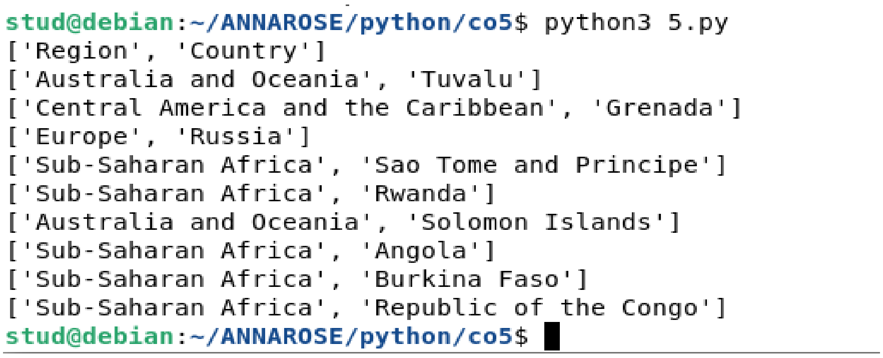
```
stud@debian:~/ANNAROSE/python$ gedit text_file.txt
stud@debian:~/ANNAROSE/python$ gedit co5.py
stud@debian:~/ANNAROSE/python$ python3 co5.py
  File "/home/stud/ANNAROSE/python/co5.py", line 4
    lines.append(line.strip())
    ^
IndentationError: expected an indented block
stud@debian:~/ANNAROSE/python$ python3 co5.py
['A class in education has a variety of related meanings. It can be the group of
 students which attends a specific course or lesson at a university, school, or
other educational institution, see Form (education). It can refer to a course it
self, for example, a class in Shakespearean drama.']
stud@debian:~/ANNAROSE/python$ 
```

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

Source code

```
import csv

with open('people.csv', 'r') as file:

    reader = csv.reader(file)
    for row in reader:
        print(row)
```

Output



```
stud@debian:~/ANNAROSE/python/co5$ python3 5.py
['Region', 'Country']
['Australia and Oceania', 'Tuvalu']
['Central America and the Caribbean', 'Grenada']
['Europe', 'Russia']
['Sub-Saharan Africa', 'Sao Tome and Principe']
['Sub-Saharan Africa', 'Rwanda']
['Australia and Oceania', 'Solomon Islands']
['Sub-Saharan Africa', 'Angola']
['Sub-Saharan Africa', 'Burkina Faso']
['Sub-Saharan Africa', 'Republic of the Congo']
stud@debian:~/ANNAROSE/python/co5$
```