

# **FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)<sup>TM</sup>**

**HORMIS NAGAR, MOOKKANNOOR, ANGAMALY-683577**



**FOCUS ON EXCELLENCE**

## **20MCA131 PROGRAMMING LAB LABORATORY RECORD**

**Name: ELIZABA MARIYAM BINNY**

**Branch: MASTER OF COMPUTER APPLICATIONS**

**Semester: 1**

**Batch: B**

**Roll No: 53**

**Register Number: *FIT21MCA-2053***

**MARCH 2022**

**FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY  
(FISAT)<sup>TM</sup>**

**HORMIS NAGAR, MOOKKANNOOR, ANGAMALY-683577**



**FOCUS ON EXCELLENCE**

**CERTIFICATE**

*This is to certify that this is a Bonafide record of the Practical work done by  
**Elizaba Mariyam Binny FIT21MCA-2053** 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

## CONTENT

SI No:	Date:	Name of Experiment:	Page No:	Signature of Staff –In – Charge:
1	28-10-21	Display future leap years from current year to a final year entered by user.	1	
2	28-10-21	List comprehensions:	1	
3	28-10-21	Count the occurrences of each word in a line of text.	2	
4	28-10-21	Prompt the user for a list of integers. For all values greater than 100, store 'over' instead.	3	
5	10-11-21	Store a list of first names. Count the occurrences of 'a' within the list	3	
6	10-11-21	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	4	
7	10-11-21	Get a string from an input string where all occurrences of first character replaced with '\$', except first character.	5	
8	10-11-21	Create a string from given string where first and last characters exchanged.	5	
9	10-11-21	Accept the radius from user and find area of circle.	6	
10	11-11-21	Find biggest of 3 numbers entered.	6	
11	11-11-21	Accept a file name from user and print extension of that.	6	
12	11-11-21	Create a list of colors from comma-separated color names entered by user. Display first and last colors.	7	
13	11-11-21	Accept an integer n and compute $n+nn+nnn$	7	
14	11-11-21	Print out all colors from color-list1 not contained in color-list2.	7	
15	11-11-21	Create a single string separated with space from two strings by swapping the character at position 1.	8	
16	17-11-21	Sort dictionary in ascending and descending order	8	

17	17-11-21	Merge two dictionaries	9	
18	17-11-21	Find gcd of 2 numbers.	9	
19	17-11-21	From a list of integers, create a list removing even numbers.	9	
20	17-11-21	Program to find the factorial of a number	10	
21	25-11-21	Generate Fibonacci series of N terms	10	
22	25-11-21	Find the sum of all items in a list	11	
23	25-11-21	Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.	11	
24	25-11-21	Display a pyramid with step number accepted from user.	12	
25	02-12-21	Count the number of characters (character frequency) in a string.	12	
26	02-12-21	Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'.	13	
27	02-12-21	Accept a list of words and return length of longest word.	13	
28	09-12-21	Construct a pattern using nested loop	14	
29	09-12-21	Generate all factors of a number.	15	
30	09-12-21	Write lambda functions to find area of square, rectangle and triangle.	15	
31	13-12-21	Work with built-in packages 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	16	
32	13-12-21	Create Rectangle class with attributes length and breadth and methods to find area and perimeter. Compare two Rectangle objects by their area.	18	

33	13-12-21	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.	18	
34	20-01-22	Create a class Rectangle with private attributes length and width. Overload ‘	19	
35	20-01-22	Create a class Time with private attributes hour, minute and second. Overload ‘+’ operator to find sum of 2 time.	20	
36	03-02-22	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.	21	
37	03-02-22	Write a python program to read a file line by line and store it into a list.	22	
38	03-02-22	Write a python program to read each row from a given csv file and print a list of strings	22	

**COURSE OUTCOME 1**

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

**PROGRAM:**

```
print ("Enter last year")
endYear = int(input())
from datetime import date
today = date.today()
print ("List of leap years:")
for year in range(today.year, endYear+1):
    if (year % 4==0) and (year % 100 != 0) or (0 == year % 400):
        print (year)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco2.py
Enter last year
2028
List of leap years:
2024
2028
```

2. 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:**

```
list1 = []
n = int(input("Enter number of elements : "))
print(" enter numbers to find positive : ")
for i in range(0, n):
    element = int(input())
    list1.append(element)
print("positive numbers are : ")
s=[p for p in list1 if p>0]
print(s)

print("square number are : ")
for num in list1:
    print(num*num)

word = input("Enter any word : ")
```

```
vowels=['a','e','i','o','u']
list1=[]
print("Vowels present in given statement :",[x for x in word if x in vowels and
x not in list1])
```

```
word1 = input("Enter any word : ")
print("Ordinal values are :",[ord(x)for x in word1])
```

## OUTPUT

```
stud@debian:~/elizabamca/python$ python3 lco3.py
Enter number of elements : 10
enter numbers to find positive :
-1
0
-2
2
1
30
48
65
34
3
positive numbers are :
[2, 1, 30, 48, 65, 34, 3]
square number are :
1
0
4
4
1
900
2304
4225
1156
9
Enter any word : alphabet
Vowels present in given statement : ['a', 'a', 'e']
Enter any word : python
Ordinal values are : [112, 121, 116, 104, 111, 110]
```

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

#### PROGRAM:

```
str1=input("Enter a string: ")
counts={}

words=str1.split()
for word in words:
    if word in counts:
        counts[word]+=1
    else:
        counts[word]=1
for k,v in counts.items():
    print(k,v)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco4.py
Enter a string: watermelon juice apple juice
watermelon 1
juice 2
apple 1
```

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

**PROGRAM**

```
list=[]
n=int(input("Enter the number of integers: "))
count=1
for num in range(0,n):
    num=int(input("Enter integer no %d : "%count))
    list.append(num)
    count+=1
print(list)
for m in range(0,n):
    if list[m]>100:
        list[m]="over"
print("List after correction : ",list)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco4.py
Enter the number of integers: 3
Enter integer no 1 : 234
Enter integer no 2 : 23
Enter integer no 3 : 45
[234, 23, 45]
List after correction : ['over', 23, 45]
```

5. Store a list of first names. Count the occurrences of 'a' within the list

**PROGRAM:**

```
list1 = []
count=0
n = int(input("Enter number of elements : "))
print(" enter names : ")
for i in range(0, n):
    element = input()
    list1.append(element)
```



```

for i in range(0, n):
    for y in list1[i]:
        if y=="a" or y=="A":
            count=count+1
print("Number of a is : ",count)

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 lco6.py
Enter number of elements : 4
enter names :
anagha
john
max
jerry
Number of a is : 4
-

```

- 6. 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**

```

l1=[1,2,3,4]
l2=[7,8]
s=0
q=0
c=0
l=0
flag=0
for i in l1:
    s=s+i
    c=c+1
    if i in l2:
        print(i,"occurs in both list")
        flag=1
if flag==0:
    print("no common values")
for j in l2:
    q=q+j
    l=l+1
print (s,q)
if(c==l):
    print("same length both are",c)
else:
    print("different, length of list is ",c,"and list 2 is",l)
if(s==q):
    print("same sum both are",s)
else: print("different, sum of list 1 is",s,"and list 2 is",q)

```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco7.py
no common values
10 15
different, length of list is 4 and list 2 is 2
different, sum of list 1 is 10 and list 2 is 15
```

7. Get a string from an input string where all occurrences of first character replaced with '\$', except first character.

**PROGRAM**

```
str1=input("enter string:")
print("original string",str1)
char=str1[0]
str1=str1.replace(char,'$')
str1=char+str1[1:]
print("replaced string:",str1)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco8.py
enter string:starts
original string starts
replaced string: start$
```

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

**PROGRAM**

```
str1=input("enter string:")
n=len(str1)
print("original string",str1)
charf=str1[0]
charl=str1[n-1]
str1=charl+str1[1:n-1]+charf
print("replaced string:",str1)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco9.py
enter string:india is my country
original string india is my country
replaced string: yndia is my countri
```

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

```
r = int(input('enter radius'))
a = 3.14*r*r
print(a)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco10.py
enter radius10
314.0
```

**10. Find biggest of 3 numbers entered.****PROGRAM**

```
a= int(input('enter a number'))
b= int(input('enter a number'))
c= int(input('enter a number'))
if a>b:
    if a>c:
        print("the greatest number is",a)
    else:
        print("the greatest number is",c)
else:
    if b>c:
        print("the greatest number is",b)
    else:
        print("the greatest number is",c)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco11.py
enter a number2
enter a number8
enter a number6
the greatest number is 8
```

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

```
import os
a=input('enter a file name')
print("The extension of",a,"is",os.path.splitext(a))
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lcol2.py
enter a file name lcol2.py
The extension of lcol2.py is (' lcol2', '.py')
```

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

**PROGRAM**

```
list1=[]
a= list(map(str,input("Enter values\n").split(',')))
print("\nThe values of input are", a)
print(min(a))
print(max(a))
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lcol3.py
Enter values
black,blue,yellow,green

The values of input are ['black', 'blue', 'yellow', 'green']
black
yellow
_
```

- 13. Accept an integer n and compute n+nn+nnn.**

**PROGRAM**

```
n=int(input("enter a number"))
print(n*123)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lcol5.py
blue does not occur in both list
_
```

- 14. Print out all colors from color-list I not contained in color-list2.**

**PROGRAM**

```
l1=['red','blue','green']
l2=['red','blue','green']
flag=0
for i in l1:
```

```

        if i not in l2:
            print(i,"does not occur in both list")
            flag=1
    if flag==0:
        print("common values only")

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 lco15.py
blue does not occur in both list
_

```

- 15. Create a single string separated with space from two strings by swapping the character at position one.**

**PROGRAM**

```

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

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 lco16.py
Enter first string:python
Enter second string:java
jython pava

```

- 16. Sort dictionary in ascending and descending order.**

**PROGRAM**

```

dict1={"a":1,"c":3,"d":2,"b":4}
l=list(dict1.items())
print(l)
l.sort()
print("Ascending order is\n",l)
l=list(dict1.items())
l.sort(reverse=True)
print("Descending order is\n",l)

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 lc017.py
[('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 2 dictionary****PROGRAM**

```
dict1={"Name":"Athidhi","Age":25}
dict2={"Gender":"F","Qualification":"PG"}
dict1.update(dict2)
print(dict1)
print(dict2)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco18.py
{'Name': 'Athidhi', 'Age': 25, 'Gender': 'F', 'Qualification': 'PG'}
{'Gender': 'F', 'Qualification': 'PG'}
```

**18. Find gcd of 2 numbers.****PROGRAM**

```
num1=int(input("enter two numbers"))
num2=int(input("enter two numbers"))
small=min(num1,num2)
for i in range(1,small+1):
    if(num1%i==0 and num2%i==0):
        j=i
        print("factor is",j)
print("GCD is",j)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco19.py
enter two numbers23
enter two numbers46
factor is 1
factor is 23
GCD is 23
```

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

```
l1=[1,2,3,4,5,6,7,8,9]
l2=[]
for i in l1:
    if i%2==1:
        l2.append(i)
print(l2)
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 lco20.py
[1, 3, 5, 7, 9]
```

**COURSE OUTCOME 2****20. Program to find the factorial of a number****PROGRAM**

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

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 2co1.py
enter a number5
120
```

**21. Generate Fibonacci series of N terms****PROGRAM**

```
a= int(input ('enter a number'))
f1=0
f2=1
print(f1)
print(f2)
for i in (range( 0,a-2 )):
    f3=f1+f2
    print(f3)
    f1=f2
    f2=f3
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 2co2.py
enter a number10
0
1
1
2
3
5
8
13
21
34
```

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

```

list=[]
n=int(input("Enter the number of integers: "))
count=1
for num in range(0,n):
    num=int(input("Enter integer no %d : "%count))
    list.append(num)
    count+=1
print("List of numbers are ",list)
sum=0
for num in list:
    sum =sum+num
print("Sum of the numbers in the list are =",sum)

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 lco22.py
Enter the number of integers: 4
Enter integer no 1 : 1
Enter integer no 1 : 3
Enter integer no 1 : 5
Enter integer no 1 : 7
List of numbers are [1, 3, 5, 7]
Sum of the numbers in the list are = 16

```

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

```

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:~/elizabamca/python$ python3 2co4.py
68
78
80
92
[4624, 6084, 6400, 8464]
```

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

**Eg: NO=4**

```
1
2 4
3 6 9
4 8 12 16
```

**PROGRAM**

```
a=int(input("enter a number"))
for row in range(1,a+1):
    c=row
    for col in range(0,row):
        print(c, end=" ")
        c=c+row
    print("\r")
```

**OUTPUT**

```
stud@debian:~/elizabamca/python$ python3 2co5.py
enter a number4
1
2 4
3 6 9
4 8 12 16
```

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

**PROGRAM**

```
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**

```

stud@debian:~/elizabamca/python$ python3 2co6.py
Enter a string:java
j      : 1
a      : 2
v      : 1

```

- 26. Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'**

**PROGRAM**

```

a=input("Enter a word\n")
l=len(a)
ll=a[l-3:l]
if(ll=="ing"):
    s=a+"ly"
else:
    s=a+"ing"
print (s)

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 2co7.py
Enter a word
happy
happying

```

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

**PROGRAM**

```

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:~/elizabamca/python$ python3 2co8.py
Enter the range:4
Enter the words:
python
java
php
html
Length of longest word is 6

```

## 28. Construct following pattern using nested loop

```

*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*

```

### PROGRAM

```

a=int(input("enter a number"))
for row in range(0,a):
    for col in range(0,row):
        print("* ", end=" ")
    print("\r")
for row in range(a,0,-1):
    for col in range(row,0,-1):
        print("* ", end=" ")
    print("\r")

```

### OUTPUT

```

stud@debian:~/elizabamca/python$ python3 2co9.py
enter a number5

*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*

```

**29. Generate all factors of a number.****PROGRAM**

```

num1=int(input("enter number"))
for i in range(1,num1+1):
    if(num1%i==0):
        j=i
        print("factor is",j)

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 2co10.py
enter number40
factor is 1
factor is 2
factor is 4
factor is 5
factor is 8
factor is 10
factor is 20
factor is 40

```

-

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

```

import math
triangle=lambda s,p,q,r:(s*(s-p)*(s-q)*(s-r))**0.5
rectangle=lambda l,h:l*h
square=lambda a:a*a
print("Area of triangle (3,4,5) is",triangle(6,3,4,5))
print("Area of rectangle (3,4) is",rectangle(3,4))
print("Area of square (3) is",square(3))

```

**OUTPUT**

```

stud@debian:~/elizabamca/python$ python3 1co30.py
Area of triangle (3,4,5) is 6.0
Area of rectangle (3,4) is 12
Area of square (3) is 9

```

-

**COURSE OUTCOME 3****31. Work with built-in packages**

**Create a package graphics with modules rectangle, circle and sub package 3D (td)- graphics with modules cuboid & 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**Circle.py

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

rectangle.py

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

sphere.py

```
from math import pi
def area_sphere(radius):
    return 4*(pi*radius*radius)
def perimeter_sphere(radius):
    return 2*pi*radius
```

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
```

driver1.py

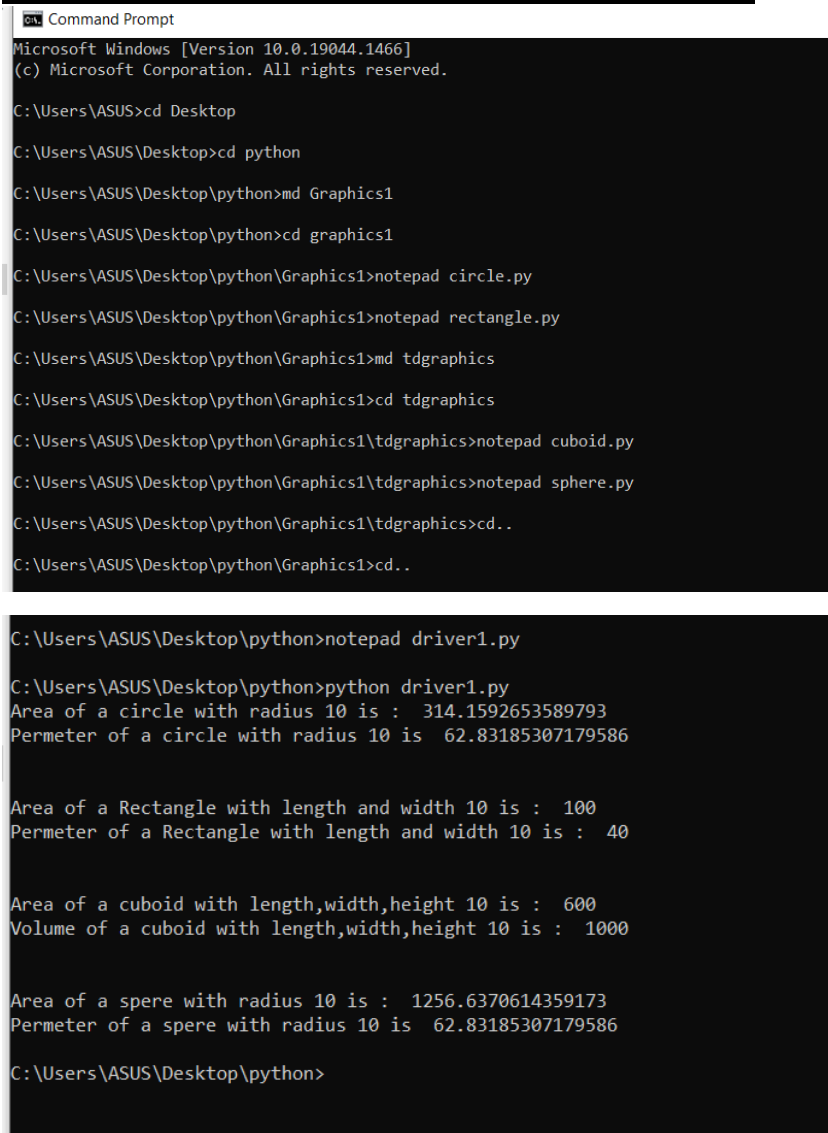
```
import Graphics1
from Graphics1 import circle,rectangle
from Graphics1.tdgraphics import cuboid,sphere
from Graphics1.circle import *
print("Area of a circle with radius 10 is :",circle.area_circle(10))
print("Perimeter of a circle with radius 10 is ",circle.perimeter_circle(10))
print("\n")
print("Area of a Rectangle with length and width 10 is :",rectangle.area_rec(10,10))
```

```

print("Perimeter 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 sphere with radius 10 is : ",sphere.area_sphere(10))
print("Perimeter of a sphere with radius 10 is ",sphere.perimeter_sphere(10))

```

## OUTPUT



```

C:\Users\ASUS>cd Desktop
C:\Users\ASUS\Desktop>cd python
C:\Users\ASUS\Desktop\python>md Graphics1
C:\Users\ASUS\Desktop\python>cd Graphics1
C:\Users\ASUS\Desktop\python\Graphics1>notepad circle.py
C:\Users\ASUS\Desktop\python\Graphics1>notepad rectangle.py
C:\Users\ASUS\Desktop\python\Graphics1>md tdgraphics
C:\Users\ASUS\Desktop\python\Graphics1>cd tdgraphics
C:\Users\ASUS\Desktop\python\Graphics1\tdgraphics>notepad cuboid.py
C:\Users\ASUS\Desktop\python\Graphics1\tdgraphics>notepad sphere.py
C:\Users\ASUS\Desktop\python\Graphics1\tdgraphics>cd..
C:\Users\ASUS\Desktop\python\Graphics1>cd..

C:\Users\ASUS\Desktop\python>notepad driver1.py
C:\Users\ASUS\Desktop\python>python driver1.py
Area of a circle with radius 10 is : 314.1592653589793
Perimeter of a circle with radius 10 is 62.83185307179586

Area of a Rectangle with length and width 10 is : 100
Perimeter 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 sphere with radius 10 is : 1256.6370614359173
Perimeter of a sphere with radius 10 is 62.83185307179586
C:\Users\ASUS\Desktop\python>

```

**COURSE OUTCOME 4**

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

**PROGRAM**

Program 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)
c=int(input("enter length of 1st rectangle"))
d=int(input("enter breadth 1st rectangle"))
u=int(input("enter length of 2nd rectangle"))
v=int(input("enter breadth of 2nd rectangle"))
r1= Rectangle(c,d)
r3= Rectangle(u,v)
a=r1.area()
b=r3.area()
print("area of 1st rectangle is:",a)
print("perimeter is:",r1.perimeter())
print("area of 2nd rectangle is:",b)
if (a>b):
print("1st is greater")
else:
    print("2nd is greater")
```

**OUTPUT:**

```
enter length of 1st rectangle3
enter breadth 1st rectangle4
enter length of 2nd rectangle5
enter breadth of 2nd rectangle7
area of 1st rectangle is: 12
perimeter is: 14
area of 2nd rectangle is: 35
2nd is greater
```

- 33. 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

```
class Bank:
def __init__(self,acc_no,name,type_of_acc,balance):
self.acc_no= acc_no
self.name=name
self.type_of_acc=type_of_acc
self.balance=balance
def deposit(self,x):
self.balance=self.balance+x
print("balance after deposit is=",self.balance)
def withdraw(self,y):
self.balance=self.balance-y
print("balance after withdrawal is=",self.balance)
x=int(input("amount to be deposited"))
y=int(input("amount to withdraw"))
ob1=Bank(1,"aaa","ccc",300000)
ob2=Bank(2,"bbb","ccc",500000)
ob1.deposit(x)
ob1.withdraw(y)
ob2.deposit(x)
ob2.withdraw(y)
```

### OUTPUT

```
amount to be deposited20000
amount to withdraw30000
balance after deposit is= 320000
balance after withdrawal is= 290000
balance after deposit is= 520000
balance after withdrawal is= 490000
```

- 34. Create a class Rectangle with private attributes length and width. Overload '>' operator to compare the area of 2 rectangles.**

### PROGRAM

```
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)
def __lt__(self,rr):
if (self.length > rr.length and self.breadth > rr.breadth):
```



```

print("Area of first rectangle is greater")
else:
    print("Area of second rectangle is greater")
c=int(input("enter length of 1st rectangle"))
d=int(input("enter breadth 1st rectangle"))
u=int(input("enter length of 2nd rectangle"))
v=int(input("enter breadth of 2nd rectangle"))
if c>u:
    gle(c,d)
else:
    gle(u,v)

```

```

v=r2.area()
print("area of 1st rectangle is:",a)
print("perimeter is:",r1.perimeter())
print("area of 2nd rectangle is:",b)
if r1 < r3

```

### OUTPUT

```

enter length of 1st rectangle2
enter breadth 1st rectangle3
enter length of 2nd rectangle1
enter breadth of 2nd rectangle5
area of 1st rectangle is: 6
perimeter is: 10
area of 2nd rectangle is: 5
Area of second rectangle is greater

```

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

### PROGRAM

```

class Time:
def __init__(self,hr,min,sec):
self.hr=hr
self.min=min
self.sec=sec
def __add__(self,t):
return(self.hr+t.hr,self.min+t.min,self.sec+t.sec)
t1=Time(3,20,35)
t2=Time(2,25,20)
print(t1+t2)

```

### OUTPUT

```

(5, 45, 55)

```

**36. 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

```
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("XYZ Publications","Wings of Fire","APJ ABDUL KALAM",100,500)
p.display3()
```

### OUTPUT

```
Wings of Fire
APJ ABDUL KALAM
Wings of Fire
APJ ABDUL KALAM
100
500
```

**COURSE OUTCOME 5**

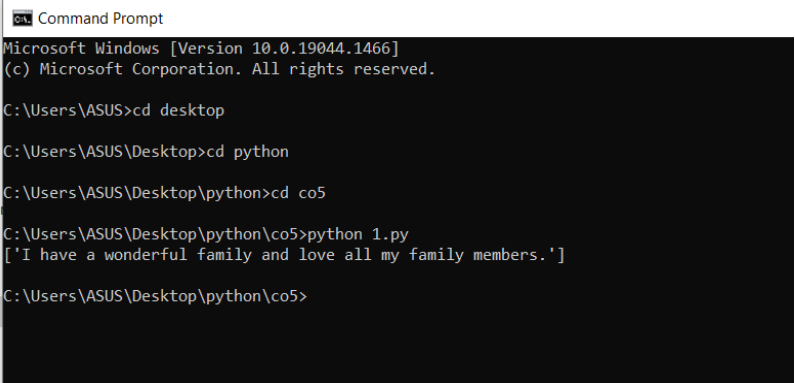
**37. Write a python program to read a file line by line and store it into a list.**

**PROGRAM**

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

text.txt

```
I have a wonderful family and love all my family members.
```

**OUTPUT**

```
Command Prompt
Microsoft Windows [Version 10.0.19044.1466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ASUS>cd desktop
C:\Users\ASUS\Desktop>cd python
C:\Users\ASUS\Desktop\python>cd co5
C:\Users\ASUS\Desktop\python\co5>python 1.py
['I have a wonderful family and love all my family members.']
C:\Users\ASUS\Desktop\python\co5>
```

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

**PROGRAM**

```
import csv
with open('work.csv', 'r') as file:
    reader = csv.reader(file)
    for row in reader:
        print(row)
```

work.csv

	A	B	C	D
1	Name	Age	Profession	
2	Das	40	Manager	
3	Vinu	38	Ass.Manager	
4	Manu	35	Staff	
5	Janaki	30	Nurse	
5				

**OUTPUT**

```

Microsoft Windows [Version 10.0.19044.1466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ASUS>cd desktop

C:\Users\ASUS\Desktop>cd python

C:\Users\ASUS\Desktop\python>cd co5

C:\Users\ASUS\Desktop\python\co5>python 2.py
['Name', 'Age', 'Profession']
['Das', '40', 'Manager']
['Vinu', '38', 'Ass.Manager']
['Manu', '35', 'Staff']
['Janaki', '30', 'Nurse']

C:\Users\ASUS\Desktop\python\co5>

```