

Experiment No.: 2

Aim

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

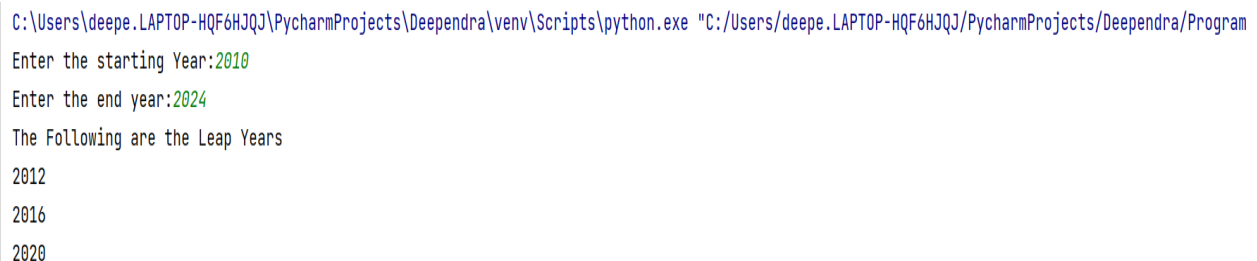
CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
x= int(input("Enter the starting Year:"))
y= int(input("Enter the end year:"))
print("The Following are the Leap Years")
for i in range(x,y):
    if((i%400==0)or((i%100!=0)and(i%4==0))):
        print(i)
```

Output Screenshot



```
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the starting Year:2010
Enter the end year:2024
The Following are the Leap Years
2012
2016
2020
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 3

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

CO1

Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

(A)

Procedure

```
list1=[12,34,-16,75,-44]
print("List items are:",list1)
print("Positive numbers are:")
for num in list1:
    if (num>0):
        print(num)
```

Output Screenshot



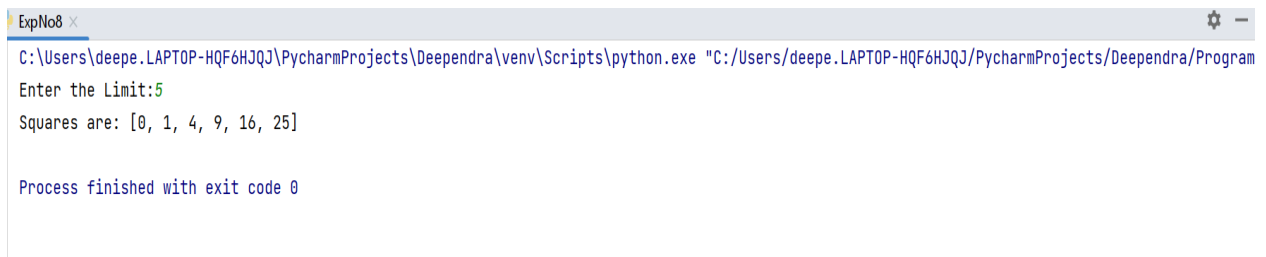
The screenshot shows a terminal window titled 'ExpNo7'. The command prompt is 'C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program'. The output is as follows:

```
List items are: [12, 34, -16, 75, -44]
Positive numbers are:
12
34
75

Process finished with exit code 0
```

(B)**Procedure**

```
n=int(input("Enter the Limit:"))
squares=[i*i for i in range(0,n+1)]
print("Squares are:",squares)
```

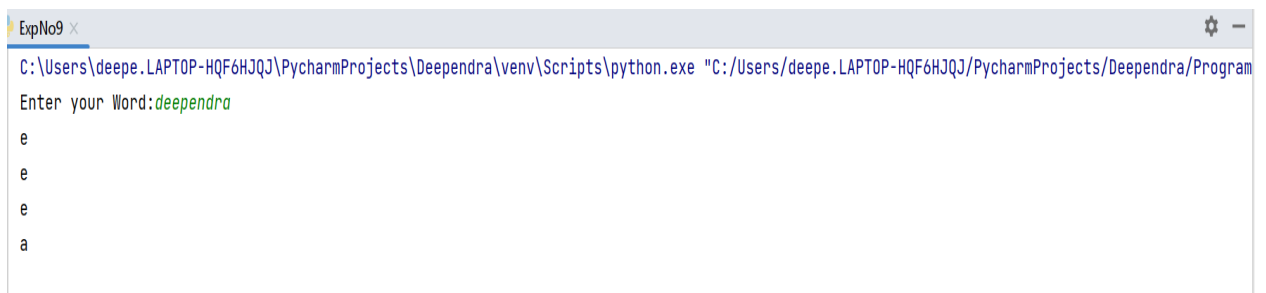
Output Screenshot

```
ExpNo8 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the Limit:5
Squares are: [0, 1, 4, 9, 16, 25]

Process finished with exit code 0
```

(C)**Procedure**

```
word=input("Enter your Word:")
for letter in word:
    if letter in "aeiou":
        print(letter)
```

Output Screenshot

```
ExpNo9 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter your Word:deependra
e
e
e
a
```

(D)**Procedure**

```
list1=[]  
list2=["Windows","Linux"]  
for item in list2:  
    for ele in item:  
        result=ord(ele)  
        list1.append(result)  
print(list1)
```

Output Screenshot

```
ExpNo47 x  
C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo47.py  
[87, 105, 110, 100, 111, 119, 115, 76, 105, 110, 117, 120]  
  
Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 4

Aim

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

CO1

Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

Procedure

```
str=input("Enter the String:")
```

```
counts = dict()
```

```
str = str.split()
```

```
for i in str:
```

```
    if i in counts:
```

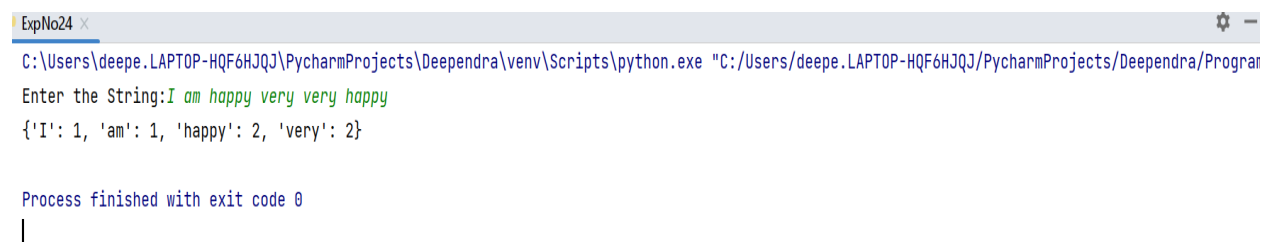
```
        counts[i] += 1
```

```
    else:
```

```
        counts[i] = 1
```

```
print(counts)
```

Output Screenshot



```
ExpNo24 x [gear icon] [minus icon]
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Programs/ExpNo24.py"
Enter the String:I am happy very very happy
{'I': 1, 'am': 1, 'happy': 2, 'very': 2}

Process finished with exit code 0
|
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 5

Aim

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

CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
x=int(input("Enter the list of integers:\n"))
```

```
for i in range(0,x):
```

```
    a=(int(input()))
```

```
    if(a>100):
```

```
        a="over"
```

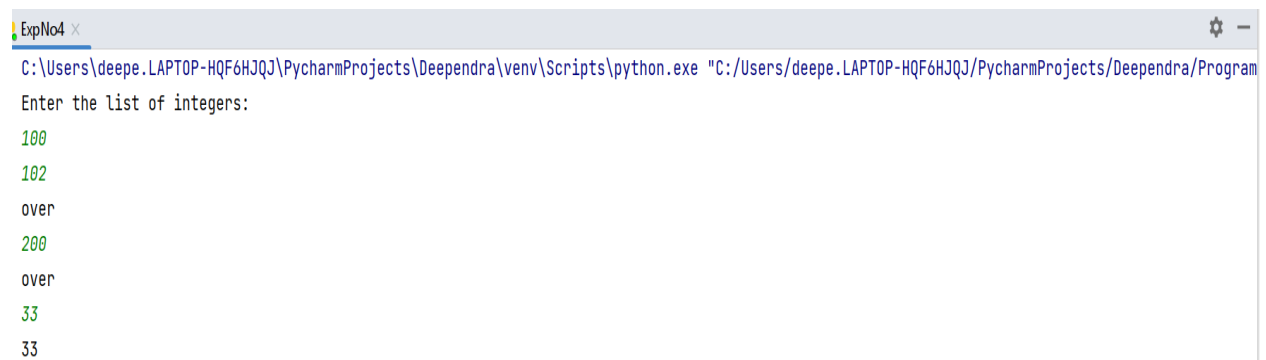
```
    print(a)
```

```
else:
```

```
    print(a)
```

```
print(counts)
```

Output Screenshot

A screenshot of a Python script execution window titled 'ExpNo4'. The window shows the command prompt path 'C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program' and the prompt 'Enter the list of integers:'. The input sequence is shown as follows: '100' (green), '102' (green), 'over' (black), '200' (green), 'over' (black), '33' (green), and '33' (black).

```
ExpNo4 <
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the list of integers:
100
102
over
200
over
33
33
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 6

Aim

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

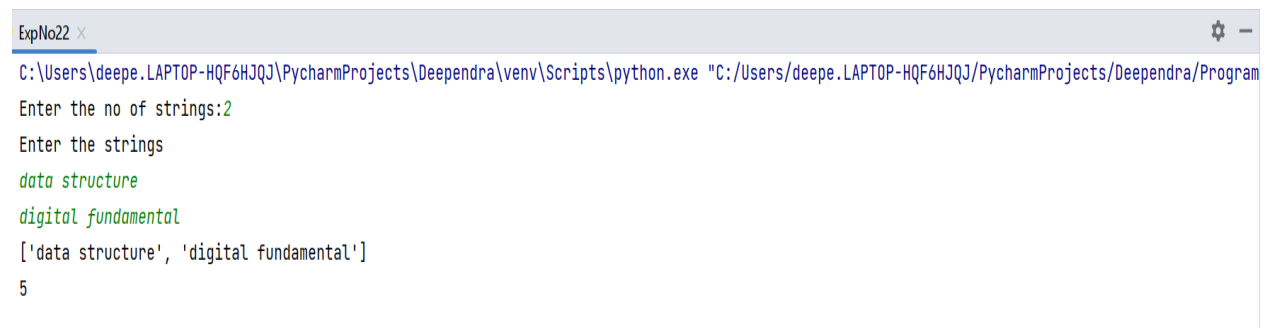
CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
a=int(input("Enter the no of strings:"))
print("Enter the strings")
list=[]
count=0
for i in range(0,a):
    ele=input()
    list.append(ele)
print(list)
for i in list:
    for j in i:
        if j == 'a':
            count=count+1
print(count)
```

Output Screenshot



```
ExpNo22 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the no of strings:2
Enter the strings
data structure
digital fundamental
['data structure', 'digital fundamental']
5
```


Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 7**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

CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
list1=[]
n = int(input("Enter number of elements : "))
print("Enter the elements:")
for i in range(0, n):
    i = int(input())
    list1.append(i)
print(list1)
list2=[]
k = int(input("Enter number of elements : "))
print("Enter the elements:")
for i in range(0, k):
    i = int(input())
    list2.append(i)
print(list2)
total=0
final=0
a=len(list1)
b=len(list2)
if(a==b):
    print("list1 and list2 are of same length")
```

```
for i in range(0, len(list1)):
    total = total + list1[i]
print("sum of list1 is:",total)

for j in range(0,len(list2)):
    final=final+list2[j]
print("sum of list2 is:",final)
z=total+final

print("sum of 2 lists:",z)
if(total==final):
    print("list sums to the same value")
else:
    print("sum of both list aren't the same")
c=list(set(list1).intersection(list2))
print("common elements are:",c)
```

Output Screenshot

```
ExpNo15 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter number of elements : 3
Enter the elements:
2
3
4
[2, 3, 4]
Enter number of elements : 3
Enter the elements:
4
5
6
[4, 5, 6]
list1 and list2 are of same length
sum of list1 is: 9
sum of list2 is: 15
sum of 2 lists: 24
sum of both list aren't the same
common elements are: [4]
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 8

Aim

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

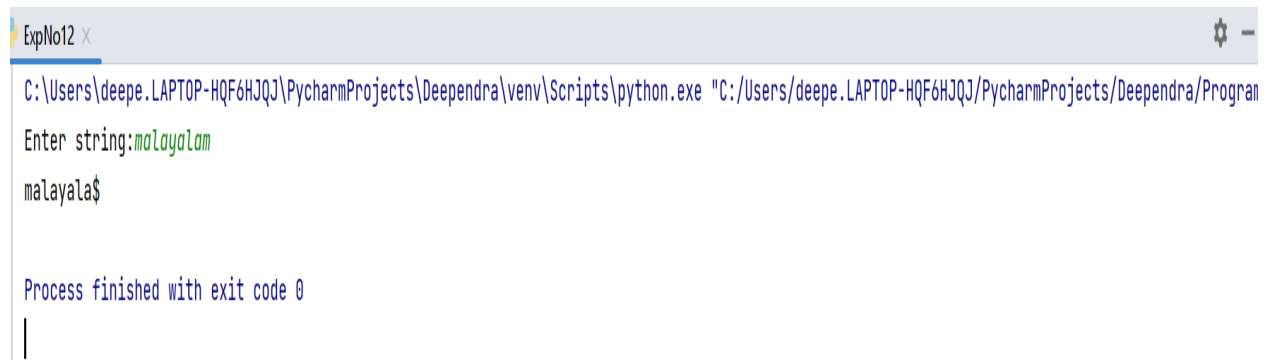
CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
n=input("Enter string:")
a=n[0]
for i in n:
    if i==a:
        n=n.replace(i,"$")
        n=a+n[1:]
print(n)
```

Output Screenshot



```
ExpNo12 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter string:malayalam
malayala$

Process finished with exit code 0
|
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 9

Aim

Create a string from given string where first and last characters exchanged.

[eg: python -> nythop]

CO1

Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

Procedure

```
str=input("Enter the Character:")
```

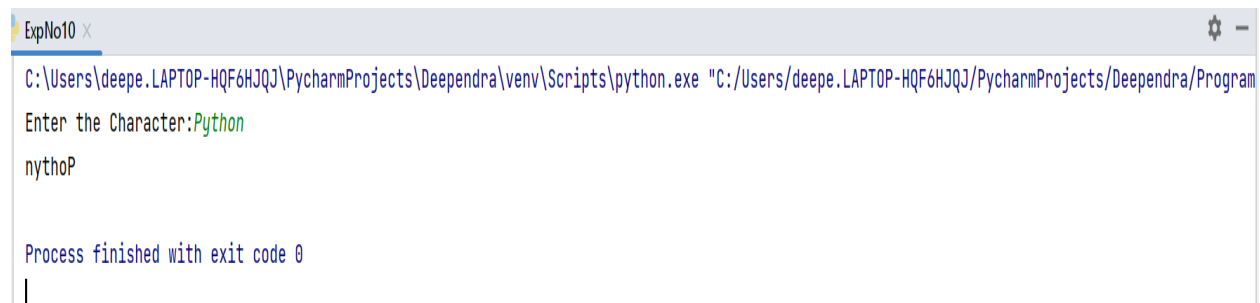
```
a=str[-1]
```

```
b=str[0]
```

```
c=str[1:-1]
```

```
print(a+c+b)
```

Output Screenshot



```
ExpNo10 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the Character:Python
nythoP

Process finished with exit code 0
|
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 10

Aim

Accept the radius from user and find area of circle.

CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

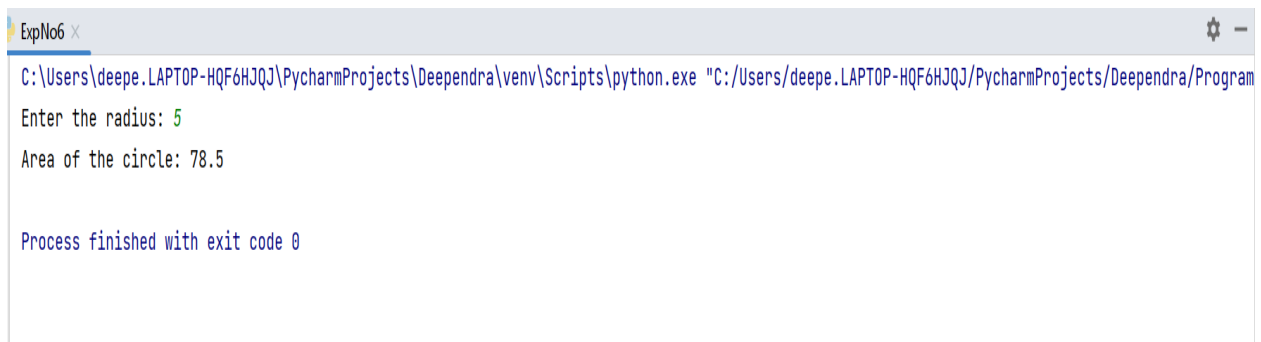
$\pi = 3.14$

Radius = float(input("Enter the radius: "))

a = π * Radius * Radius

print("Area of the circle:" , a)

Output Screenshot



```
ExpNo6 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the radius: 5
Area of the circle: 78.5

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 11

Aim

Find biggest of 3 numbers entered.

CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
x=int(input("Enter the First Number:"))
y=int(input("Enter the Second Number:"))
z=int(input("Enter the Third Number:"))
if(x>=y)and(x>=z):
    largest=x
elif (y>=x)and(y>=z):
    largest=y
else:
    largest=z

print("Largest number is ",largest)
```

Output Screenshot



```
ExpNo4 x ExpNo5 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the First Number:34
Enter the Second Number:50
Enter the Third Number:13
Largest number is 50
```


Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 12

Aim

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

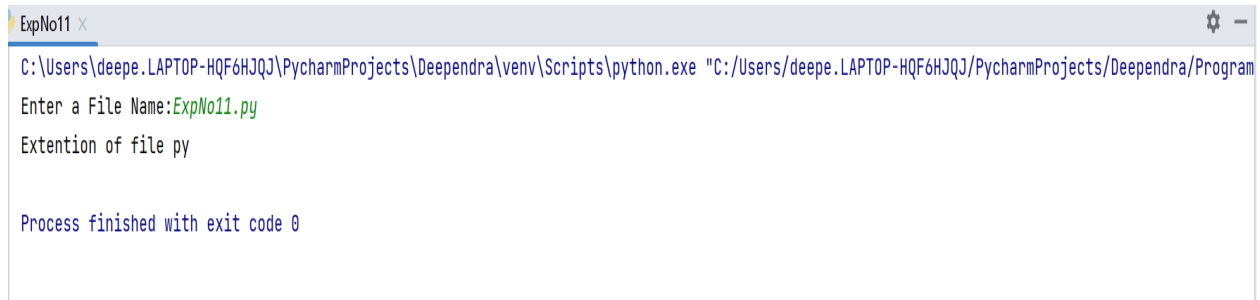
CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
file1=input("Enter a File Name:")  
text=file1.split('.')  
print("Extention of file",text[1])
```

Output Screenshot



```
ExpNo11 x  
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program  
Enter a File Name:ExpNo11.py  
Extention of file py  
  
Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 13

Aim

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

CO1

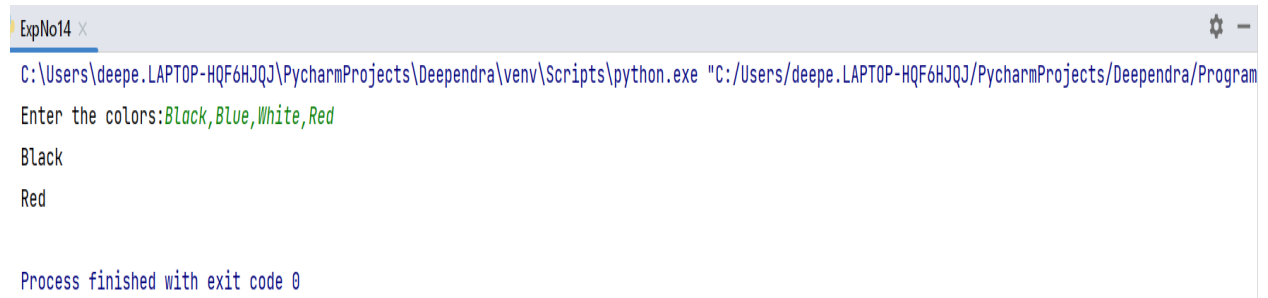
Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

Procedure

```
color=input("Enter the colors:")  
colorList=color.split(',')  
print(colorList[0])  
print(colorList[-1])
```

Output Screenshot



```
ExpNo14 x  
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program  
Enter the colors:Black,Blue,White,Red  
Black  
Red  
  
Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 14

Aim

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

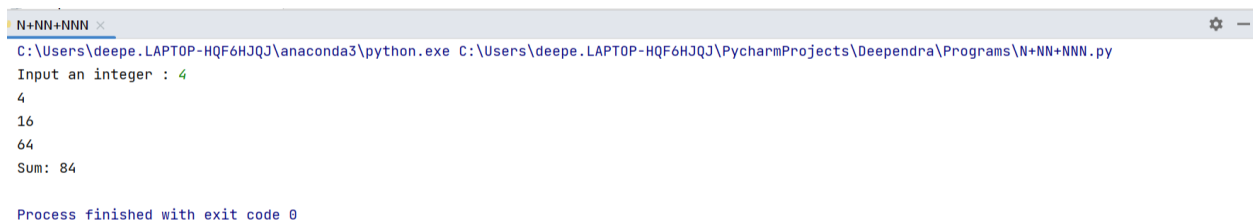
CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
n = int(input("Input an integer : "))
sum = 0
for i in range(3):
    h = int(pow(n, i+1))
    print(h)
    sum = sum + h
print("Sum :",sum)
```

Output Screenshot



```
N+NN+NNN
C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\N+NN+NNN.py
Input an integer : 4
4
16
64
Sum: 84

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 15

Aim

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

CO1

Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

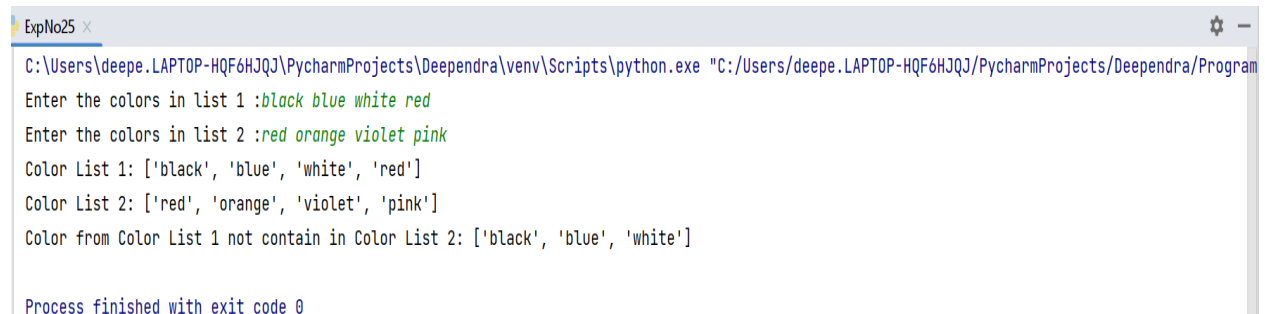
Procedure

```
color_list1=input("Enter the colors in list 1 :")
color_list2=input("Enter the colors in list 2 :")
list1=color_list1.split()
list2=color_list2.split()
list3=[]

print("Color List 1:",list1)
print("Color List 2:",list2)

for i in list1:
    if i not in list2:
        list3.append(i)
print("Color from Color List 1 not contain in Color List 2:",list3)
```

Output Screenshot



```
ExpNo25 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the colors in list 1 :black blue white red
Enter the colors in list 2 :red orange violet pink
Color List 1: ['black', 'blue', 'white', 'red']
Color List 2: ['red', 'orange', 'violet', 'pink']
Color from Color List 1 not contain in Color List 2: ['black', 'blue', 'white']

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 16

Aim

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

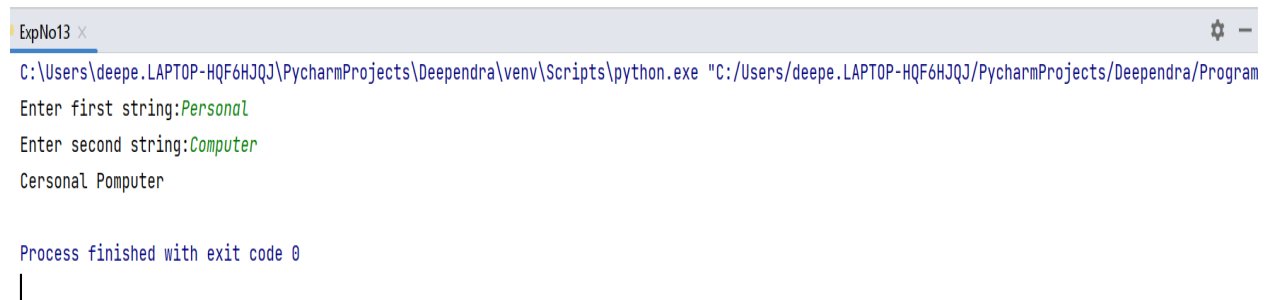
CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
str1=input("Enter first string:")
str2=input("Enter second string:")
a=str1[0]
b=str2[0]
newstr1=b+str1[1:]
newstr2=a+str2[1:]
print(newstr1+" "+newstr2)
```

Output Screenshot



```
ExpNo13 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program"
Enter first string:Personal
Enter second string:Computer
Cersonal Pomputer

Process finished with exit code 0
|
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 17

Aim

Sort dictionary in ascending and descending order

CO1

Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

Procedure

```
dict1={'13':'31','12':'21'}
sorted_a=sorted(dict1.keys())
print(sorted_a)
sorted_a=sorted(dict1.items())
print(sorted_a)
sorted_a=sorted(dict1.values())
print(sorted_a)
sorted_a=sorted(dict1.items(),reverse=True)
print(sorted_a)
```

Output Screenshot

```
ExpNo18 x
C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/venv/Scripts/python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
['12', '13']
[('12', '21'), ('13', '31')]
['21', '31']
[('13', '31'), ('12', '21')]
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 18**Aim**

Merge two dictionaries

CO1

Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

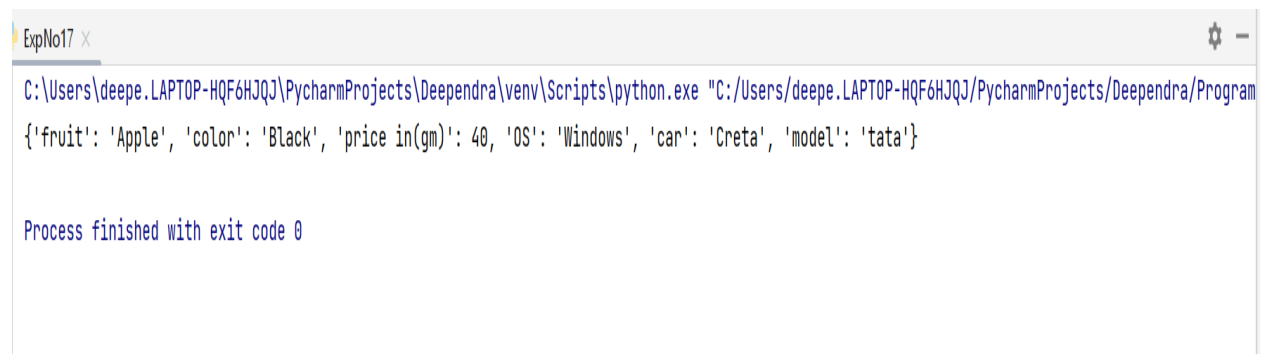
Procedure

```
d1={'fruit':'Apple','color':'Black','price in(gm)':40}
```

```
d2={'OS':'Windows','car':'Creta','model':'tata'}
```

```
d1.update(d2)
```

```
print(d1)
```

Output Screenshot

```
ExpNo17 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
{'fruit': 'Apple', 'color': 'Black', 'price in(gm)': 40, 'OS': 'Windows', 'car': 'Creta', 'model': 'tata'}

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 19

Aim

Find gcd of 2 numbers

CO1

Understands basics of Python Programming language including input/output

functions, operators, basic and collection data types

Procedure

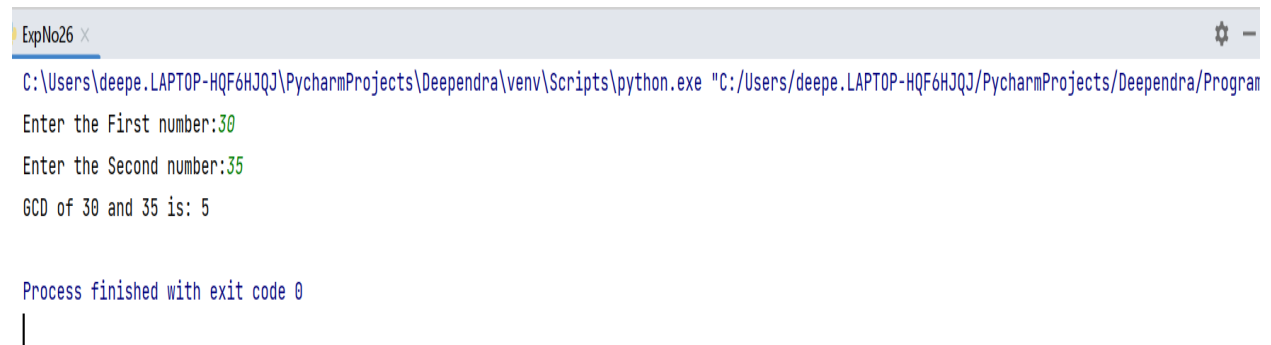
import math

num1=int(input("Enter the First number:"))

num2=int(input("Enter the Second number:"))

print("GCD of " + str(num1) + " and " + str(num2) + " is:",math.gcd(num1,num2))

Output Screenshot

A screenshot of a terminal window titled 'ExpNo26'. The window shows the execution of a Python script. The prompt is 'C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program'. The user enters '30' for the first number and '35' for the second number. The output is 'GCD of 30 and 35 is: 5'. The process finishes with exit code 0.

```
ExpNo26 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the First number:30
Enter the Second number:35
GCD of 30 and 35 is: 5

Process finished with exit code 0
|
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 20

Aim

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

CO1

Understands basics of Python Programming language including input/output functions, operators, basic and collection data types

Procedure

```
a=int(input("Enter the no of elements:"))
```

```
list=[]
```

```
for i in range(a) :
```

```
    n = int(input("Enter the elements:"))
```

```
    list.append(n)
```

```
print("List Items",list)
```

```
for i in list:
```

```
    if(i%2==0):
```

```
        list.remove(i)
```

```
print("List after removing even items",list)
```

Output Screenshot

```
ExpNo19 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the no of elements:4
Enter the elements:3
Enter the elements:4
Enter the elements:5
Enter the elements:6
List Items [3, 4, 5, 6]
List after removing even items [3, 5]
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 21

Aim

Program to find the factorial of a number

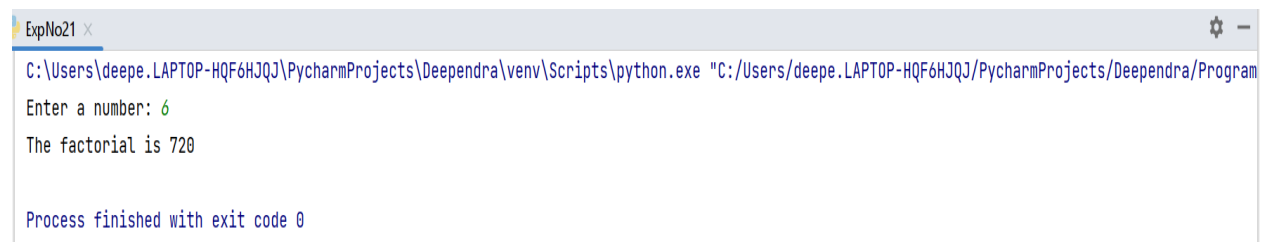
CO2

Implement decision making, looping constructs and functions

Procedure

```
n=int(input("Enter a number: "))
fact=1
if n<0:
    print("Factorial for negative numbers does not exist")
elif n==0:
    print("The factorial of 0 is 1")
else:
    for i in range(1,n+1):
        fact=fact*i
    print("The factorial is",fact)
```

Output Screenshot

A screenshot of a terminal window titled 'ExpNo21'. The command prompt shows the execution of a Python script. The user enters '6' as the number, and the program outputs 'The factorial is 720'. The process finishes with exit code 0.

```
ExpNo21 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter a number: 6
The factorial is 720

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 22**Aim**

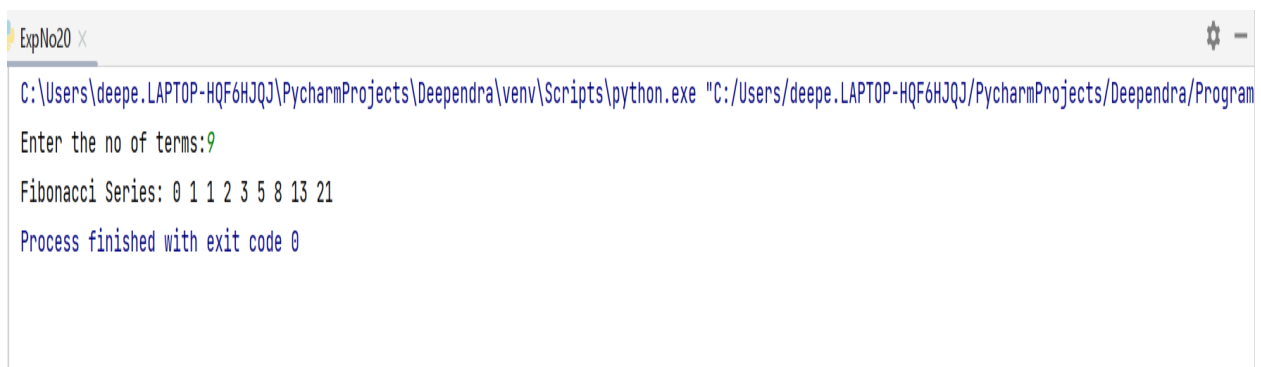
Generate Fibonacci series of N terms

CO2

Implement decision making, looping constructs and functions

Procedure

```
num=int(input("Enter the no of terms:"))
n1=0
n2=1
print("Fibonacci Series:", n1, n2, end=" ")
for i in range(2, num):
    n3 = n1 + n2
    n1 = n2
    n2 = n3
    print(n3, end=" ")
```

Output ScreenshotA screenshot of a terminal window titled 'ExpNo20'. The command prompt shows the path 'C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe' followed by the script path. The user enters '9' for the number of terms. The output displays the Fibonacci series: '0 1 1 2 3 5 8 13 21'. The terminal concludes with 'Process finished with exit code 0'.

```
ExpNo20 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the no of terms:9
Fibonacci Series: 0 1 1 2 3 5 8 13 21
Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 23**Aim**

Find the sum of all items in a list

CO2

Implement decision making, looping constructs and functions

Procedure**Output Screenshot****Result**

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 24

Aim

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

CO2

Implement decision making, looping constructs and functions

Procedure

```
a=int(input("Enter upper limit:"))
```

```
b=int(input("Enter lower limit:"))
```

```
lists=[]
```

```
for i in range (a,b+1):
```

```
    for j in range(1,i):
```

```
        if j * j == i:
```

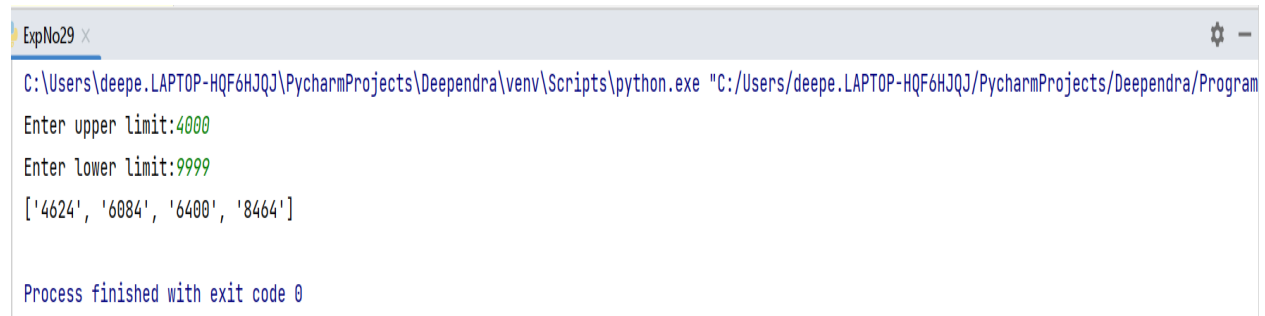
```
            string=str(i)
```

```
            if int(string[0]) % 2 == 0 and int(string[1]) % 2 == 0 and int(string[2]) % 2 == 0 and  
int(string[3]) % 2 == 0:
```

```
                lists.append(string)
```

```
print(lists)
```

Output Screenshot



```
ExpNo29 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter upper limit:4000
Enter lower limit:999
['4624', '6084', '6400', '8464']

Process finished with exit code 0
```


Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 25

Aim

Display the given pyramid with step number accepted from user.

Eg: N=4

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

CO2

Implement decision making, looping constructs and functions

Procedure

```
n=int(input("Enter a limit:"))
```

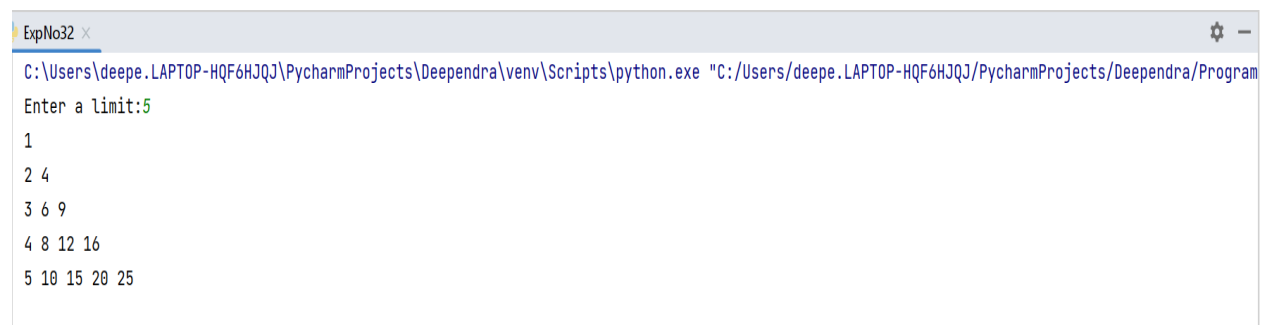
```
for i in range(1,n+1):
```

```
    for j in range(1,i+1):
```

```
        print(i*j,end=" ")
```

```
    print()
```

Output Screenshot



The screenshot shows a terminal window titled 'ExpNo32'. The command prompt is 'C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program'. The user has entered 'Enter a limit:5'. The output is a pyramid pattern of numbers: 1, 2 4, 3 6 9, 4 8 12 16, 5 10 15 20 25.

```
ExpNo32 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter a limit:5
1
2 4
3 6 9
4 8 12 16
5 10 15 20 25
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 26**Aim**

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

CO2

Implement decision making, looping constructs and functions

Procedure

```
str=input("Enter a string:")
```

```
dict={ }
```

```
for i in str:
```

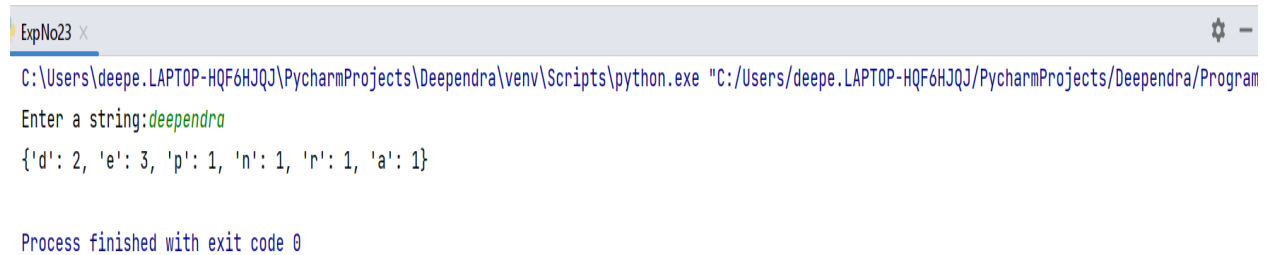
```
    if i in dict:
```

```
        dict[i]+=1
```

```
    else:
```

```
        dict[i]=1
```

```
print(dict)
```

Output Screenshot

```
ExpNo23 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter a string:deependra
{'d': 2, 'e': 3, 'p': 1, 'n': 1, 'r': 1, 'a': 1}

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 27

Aim

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

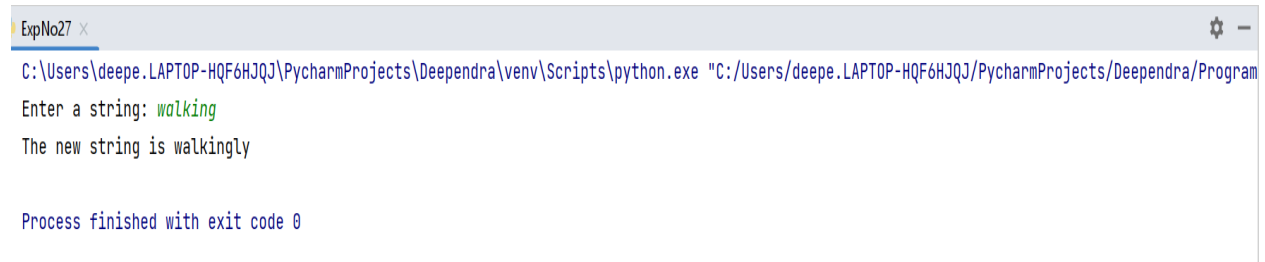
CO2

Implement decision making, looping constructs and functions

Procedure

```
str=input("Enter a string: ")
if str[-3:] == 'ing':
    print("The new string is",str + "ly")
else:
    print("The new string is",str + "ing")
```

Output Screenshot



```
ExpNo27 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter a string: walking
The new string is walkingly

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 28**Aim**

Accept a list of words and return length of longest word

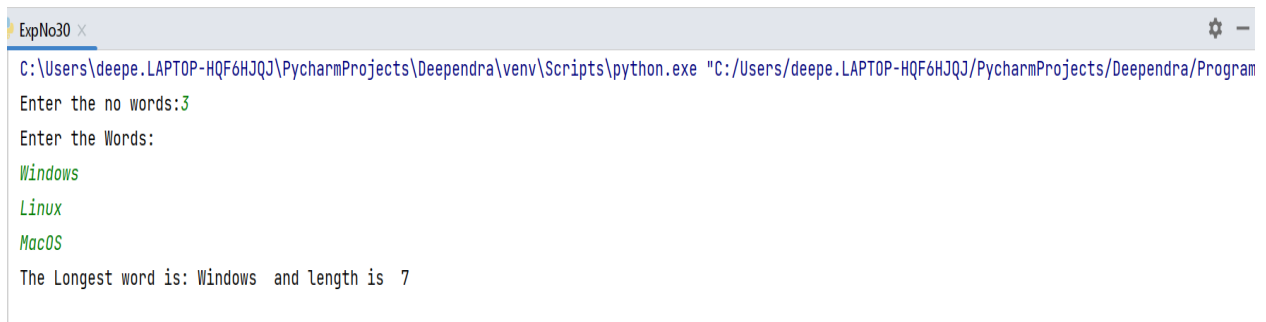
CO2

Implement decision making, looping constructs and functions

Procedure

```
def longestLength(a):  
    max1 = len(a[0])  
    temp = a[0]  
  
    for i in a:  
        if (len(i) > max1):  
            max1 = len(i)  
            temp = i  
  
    print("The Longest word is:", temp,  
          " and length is ", max1)  
  
a=[]  
n = int(input("Enter the no words:"))  
print("Enter the Words:")  
for j in range(0,n):  
    ele=input()  
    a.append(ele)  
longestLength(a)
```

Output Screenshot



```
ExpNo30 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the no words:3
Enter the Words:
Windows
Linux
MacOS
The Longest word is: Windows and length is 7
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 29**Aim**

Construct following pattern using nested loop

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

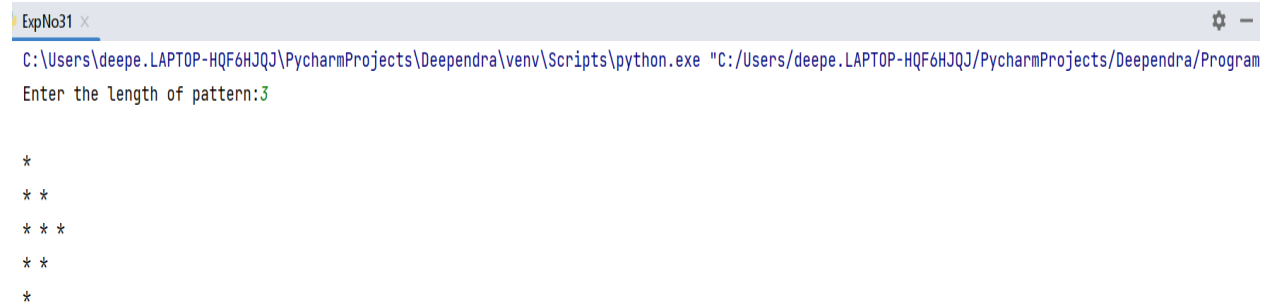
CO2

Implement decision making, looping constructs and functions

Procedure

```
n= int(input("Enter the length of pattern:"))  
for i in range(n):  
    for j in range(i):  
        print('*',end=" ")  
    print("")  
for i in range(n,0,-1):  
    for j in range(i):  
        print('*',end=" ")  
    print("")
```

Output Screenshot



The screenshot shows a terminal window titled 'ExpNo31'. The command prompt displays the file path 'C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program' and the input 'Enter the length of pattern:3'. The output is a star pattern consisting of five lines: the first line has one star, the second has two, the third has three, the fourth has two, and the fifth has one.

```
ExpNo31 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter the length of pattern:3

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

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 30**Aim**

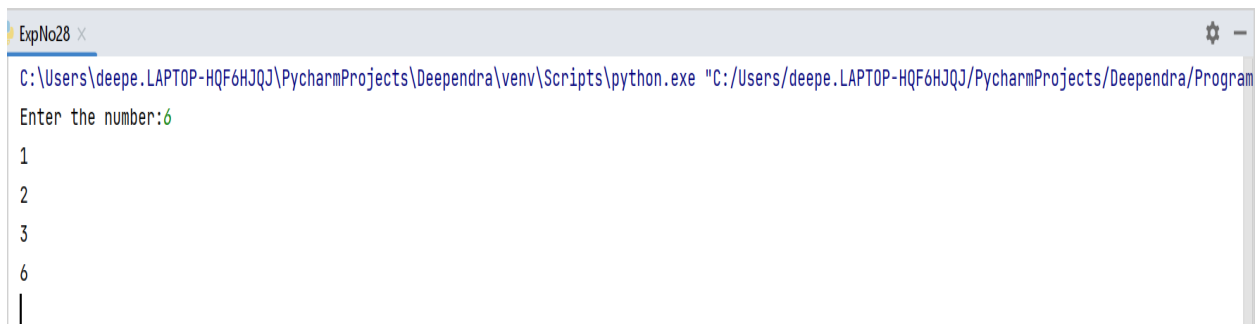
Generate all factors of a number.

CO2

Implement decision making, looping constructs and functions

Procedure

```
def factor(num):  
    for i in range(1,num+1):  
        if num % i == 0:  
            print(i)  
num = int(input("Enter the number:"))  
factor(num)
```

Output ScreenshotA screenshot of a Python terminal window titled 'ExpNo28'. The command prompt shows the execution of a Python script. The user is prompted to 'Enter the number:' and enters '6'. The program then prints the factors of 6, which are 1, 2, 3, and 6, each on a new line.

```
ExpNo28 x  
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program  
Enter the number:6  
1  
2  
3  
6  
|
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 31

Aim

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

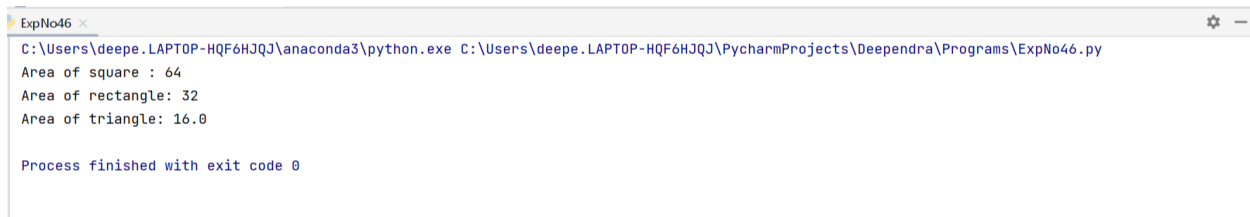
CO2

Implement decision making, looping constructs and functions

Procedure

```
area_square = lambda x:x*x
area_rectangle = lambda x,y: x*y
area_triangle = lambda x,y: 1/2*x*y
a=8
b=4
print("Area of square :",area_square(a))
print("Area of rectangle:",area_rectangle(a,b))
print("Area of triangle:",area_triangle(a,b))
```

Output Screenshot



```
ExpNo46 x
C:\Users\deepe.LAPT0P-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPT0P-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo46.py
Area of square : 64
Area of rectangle: 32
Area of triangle: 16.0

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 32**Aim**

Work with built-in packages

CO3

Design modules and packages - built in and user defined packages

Procedure**Output Screenshot****Result**

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 33**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)

CO3

Design modules and packages - built in and user defined packages

Procedure**Circle.py**

```
def circleArea(r):  
    z=3.14*r*r  
    print("Area of circle:",z)  
  
def circlePerimeter(r):  
    y=2*3.14*r  
    print("Perimeter of circle:",y)
```

Rectangle.py

```
def rectangleArea(l,b):  
    x=l*b  
    print("Area of rectangle:",x)  
  
def rectanglePerimeter(l,b):  
    y=2*(l+b)  
    print("Perimeter of rectangle:",y)
```

Cuboid.py

```
def cuboidArea(l,w,h):  
    q=2*l*w+2*l*h+2*h*w  
    print("Area of cuboid:",q)  
  
def cuboidPerimeter(l,w,h):  
    w=4*(l+w+h)  
    print("Perimeter of cuboid:",w)
```

Sphere.py

```
def sphereArea(r):  
    t=4*3.14*r*r  
    print("Area of sphere:",t)  
  
def spherePerimeter(r):  
    u=4*3.14*r  
    print("Perimeter of sphere:",u)
```

ExpNo33

```
import Graphics.circle  
import Graphics.rectangle  
import Graphics.ThreeDGraphics.cuboid  
import Graphics.ThreeDGraphics.sphere  
  
Graphics.circle.circleArea(6)  
Graphics.circle.circlePerimeter(6)  
  
Graphics.rectangle.rectangleArea(10,5)  
Graphics.rectangle.rectanglePerimeter(10,5)
```

Graphics.ThreeDGraphics.cuboid.cuboidArea(3,6,6)

Graphics.ThreeDGraphics.cuboid.cuboidPerimeter(3,6,6)

Graphics.ThreeDGraphics.sphere.sphereArea(2)

Graphics.ThreeDGraphics.sphere.spherePerimeter(2)

Output Screenshot



```
ExpNo33 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Area of circle: 113.03999999999999
Perimeter of circle: 37.68
Area of rectangle: 50
Perimeter of rectangle: 30
Area of cuboid: 144
Perimeter of cuboid: 60
Area of sphere: 50.24
Perimeter of sphere: 25.12
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 34**Aim**

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

CO4

Implement object-oriented programming and exception handling.

Procedure

```
class Rectangle:
```

```
    def __init__(self,length,breadth):
```

```
        self.length=length
```

```
        self.breadth=breadth
```

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

```
        return self.breadth*self.length
```

```
    def perimeter(self):
```

```
        return 2*(self.length+self.breadth)
```

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

```
b=int(input("Enter the breadth:"))
```

```
o=Rectangle(l,b)
```

```
x=o.area()
```

```
y=o.perimeter()
```

```
print("Area=",x)
```

```
print("Perimeter=",y)
```

```
l1=int(input("Enter the length:"))
```

```
b1=int(input("Enter the breadth:"))
```

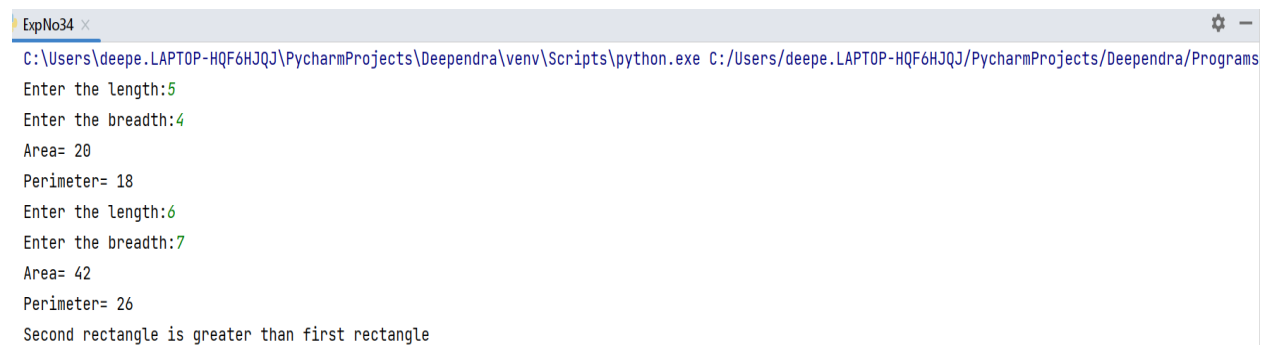
```
p=Rectangle(l1,b1)
```

```
x1=p.area()
```

```
y1=p.perimeter()
print("Area=",x1)
print("Perimeter=",y1)

if(x>x1):
    print("First rectangle is greater than second rectangle")
else:
    print("Second rectangle is greater than first rectangle")
```

Output Screenshot



The screenshot shows a terminal window titled 'ExpNo34'. The command executed is `C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Programs`. The program prompts for the length and breadth of two rectangles. For the first rectangle, length is 5 and breadth is 4, resulting in Area= 20 and Perimeter= 18. For the second rectangle, length is 6 and breadth is 7, resulting in Area= 42 and Perimeter= 26. The program then prints 'Second rectangle is greater than first rectangle'.

```
ExpNo34 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Programs
Enter the length:5
Enter the breadth:4
Area= 20
Perimeter= 18
Enter the length:6
Enter the breadth:7
Area= 42
Perimeter= 26
Second rectangle is greater than first rectangle
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 35**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.

CO4

Implement object-oriented programming and exception handling.

Procedure

class Bank:

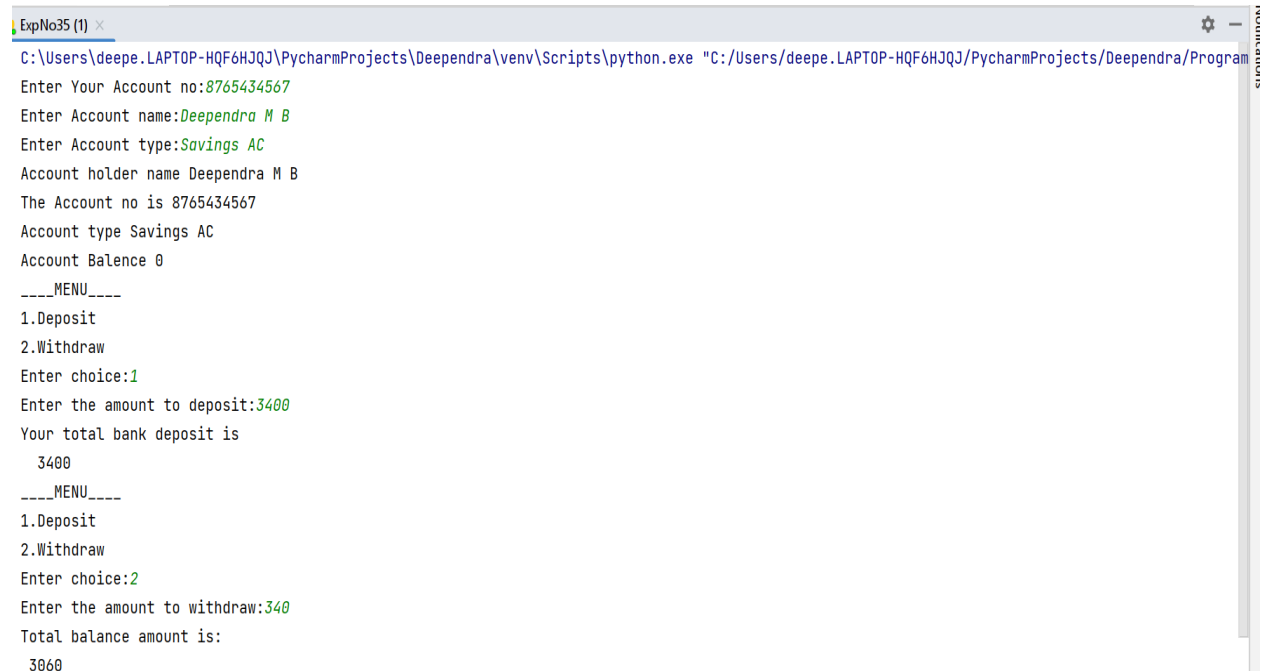
```
def __init__(self,accno,name,accty):  
    self.accno=accno  
    self.name=name  
    self.accty=accty  
    self.bal=0  
  
def showaccount(self):  
    print("Account holder name",self.name)  
    print("The Account no is", self.accno)  
    print("Account type",self.accty)  
    print("Account Balance",self.bal)
```

```
def deposit(self,d1):  
    self.bal=self.bal+d1  
    return self.bal  
  
def withdraw(self,w1):  
    self.bal=self.bal-w1  
    return self.bal
```

```
b=int(input("Enter Your Account no:"))
a=input("Enter Account name:")
c=input("Enter Account type:")
d=Bank(b,a,c)
d.showaccount()
while(True):
    print("MENU")
    print("\n 1.Deposit")
    print("\n 2.Withdraw")
    c=int(input("Enter choice:"))
    f=0
    if(c==1):
        f=int(input("Enter the amount to deposit:"))
        print("Your total bank deposit is\n ",d.deposit(f))

    elif(c==2):
        g=int(input("Enter the amount to withdraw:"))
        if(g<f):
            print("Insufficient balance")
        else:
            print("Total balance amount is:\n",d.withdraw(g))
    else:
        print("Enter valid choice")
```

Output Screenshot



```
ExpNo35 (1) x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe "C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Program
Enter Your Account no:8765434567
Enter Account name:Deependra M B
Enter Account type:Savings AC
Account holder name Deependra M B
The Account no is 8765434567
Account type Savings AC
Account Balance 0
____MENU____
1.Deposit
2.Withdraw
Enter choice:1
Enter the amount to deposit:3400
Your total bank deposit is
    3400
____MENU____
1.Deposit
2.Withdraw
Enter choice:2
Enter the amount to withdraw:340
Total balance amount is:
    3060
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 36**Aim**

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

CO4

Implement object-oriented programming and exception handling.

Procedure

```
class Rectangle:
```

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

```
        self.__length = length
```

```
        self.__width = width
```

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

```
        return self.__length * self.__width
```

```
    def __lt__(self, other):
```

```
        return self.area() < other.area()
```

```
rect1 = Rectangle(4, 7)
```

```
rect2 = Rectangle(4, 5)
```

```
print("Area of rectangle 1 :",rect1.area())
```

```
print("Area of rectangle 2 :",rect2.area())
```

```
if rect1<rect2:
```

```
    print("Area of rectangle 1 less than Rectangle 2")
```

```
else:
```

```
    print("Area of rectangle 2 is less than rectangle 1")
```

Output Screenshot

A screenshot of a terminal window showing the output of a Python script. The window has two tabs: 'ExpNo35 (1)' and 'ExpNo36 (1)'. The command prompt shows the path 'C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe' followed by a file path. The output consists of three lines: 'Area of rectangle 1 : 28', 'Area of rectangle 2 : 20', and 'Area of rectangle 2 is less than rectangle 1'. At the bottom, it says 'Process finished with exit code 0'.

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 37**Aim**

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

CO4

Implement object-oriented programming and exception handling.

Procedure

class Time:

```
def __init__(self, hour, minute, second):
```

```
    self.hour = hour
```

```
    self.minute = minute
```

```
    self.second = second
```

```
def __str__(self):
```

```
    return f"{self.hour}:{self.minute}:{self.second}"
```

```
def __add__(self, other):
```

```
    hour = self.hour + other.hour
```

```
    minute = self.minute + other.minute
```

```
    second = self.second + other.second
```

```
    if second >= 60:
```

```
        second -= 60
```

```
        minute += 1
```

```
    if minute >= 60:
```

```
        minute -= 60
```

```
        hour += 1
```

```
return Time(hour, minute, second)
```

```
time1 = Time(1, 20, 30)
```

```
time2 = Time(2, 45, 15)
```

```
print(time1)
```

```
print(time2)
```

```
print(time1 + time2)
```

Output Screenshot



```
ExpNo35 (1) x ExpNo37 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Programs
1:20:30
2:45:15
4:5:45

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 38**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.

CO4

Implement object-oriented programming and exception handling.

Procedure

```
class Publisher:
```

```
    def getpublisher(self):
```

```
        self.name=input("Enter the name of the publisher:")
```

```
    def display(self):
```

```
        print("Name of the publisher:",self.name)
```

```
class Book(Publisher):
```

```
    def getbook(self):
```

```
        self.title=input("Enter the title of the book:")
```

```
        self.author=input("Enter the name of the author:")
```

```
    def display1(self):
```

```
        print("Title:",self.title)
```

```
        print("Author:",self.author)
```

```
class Python(Book):
```

```
    def bookdetails(self):
```



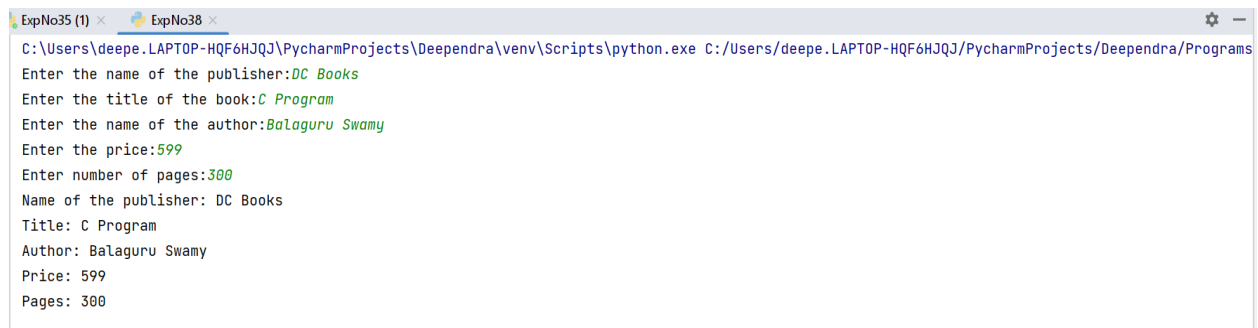
```
self.price=int(input("Enter the price:"))  
self.pages=int(input("Enter number of pages:"))
```

```
def display2(self):
```

```
    print("Price:",self.price)  
    print("Pages:",self.pages)
```

```
obj1=Python()  
obj1.getpublisher()  
obj1.getbook()  
obj1.bookdetails()  
obj1.display()  
obj1.display1()  
obj1.display2()
```

Output Screenshot



```
ExpNo35 (1) x ExpNo38 x  
C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\venv\Scripts\python.exe C:/Users/deepe.LAPTOP-HQF6HJQJ/PycharmProjects/Deependra/Programs  
Enter the name of the publisher:DC Books  
Enter the title of the book:C Program  
Enter the name of the author:Balaguru Swamy  
Enter the price:599  
Enter number of pages:300  
Name of the publisher: DC Books  
Title: C Program  
Author: Balaguru Swamy  
Price: 599  
Pages: 300
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 39

Aim

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

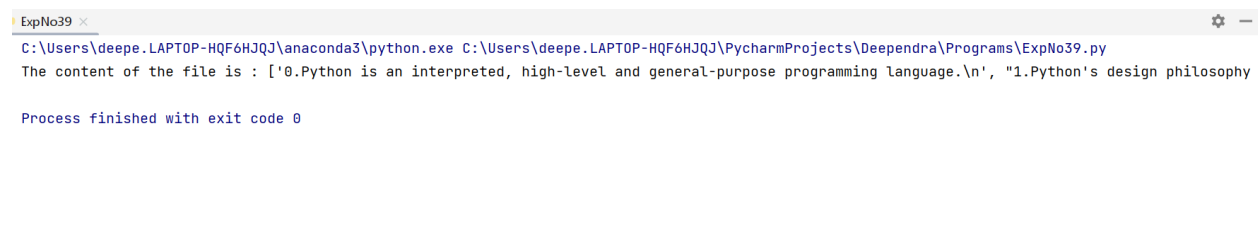
CO5

Create files and form regular expressions for effective search operations on strings and files.

Procedure

```
f=open("demo.txt","r")
list=f.readlines()
print("The content of the file is :",list)
f.close()
```

Output Screenshot

A screenshot of a terminal window titled 'ExpNo39'. The command prompt shows the execution of a Python script: 'C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo39.py'. The output of the script is displayed as 'The content of the file is : ['0.Python is an interpreted, high-level and general-purpose programming language.\n', '1.Python's design philosophy'. Below the output, it says 'Process finished with exit code 0'.

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 40**Aim**

Python program to copy odd lines of one file to other

CO5

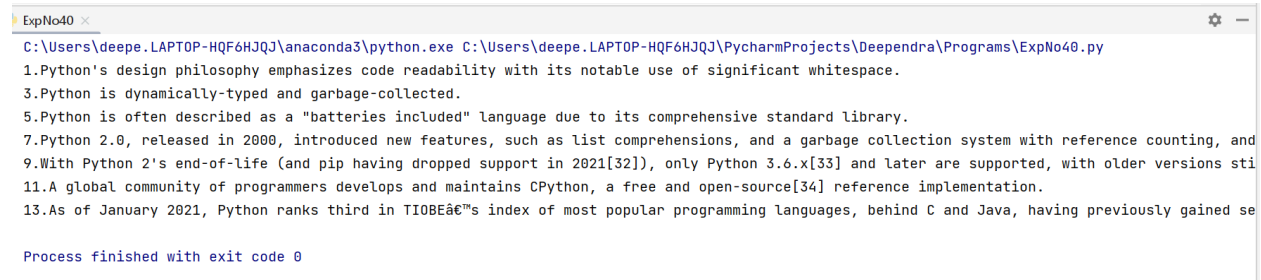
Create files and form regular expressions for effective search operations on strings and files.

Procedure

```
f=open("demo.txt","r")
f1=open("odd.txt","w")
content=f.readlines()
for i in range(0,len(content)):
    if(i%2!=0):
        f1.write(content[i])
    else:
        pass
f.close()
f1.close()

f=open("odd.txt","r")
c=f.read()
print(c)
f.close()
```

Output Screenshot

A screenshot of a code editor window titled 'ExpNo40'. The window shows the execution of a Python script. The command line at the top reads: 'C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo40.py'. The output of the script is displayed below, consisting of a numbered list of facts about Python. The list includes: 1. Python's design philosophy emphasizes code readability with its notable use of significant whitespace. 2. Python is dynamically-typed and garbage-collected. 3. Python is often described as a "batteries included" language due to its comprehensive standard library. 4. Python 2.0, released in 2000, introduced new features, such as list comprehensions, and a garbage collection system with reference counting, and 5. With Python 2's end-of-life (and pip having dropped support in 2021[32]), only Python 3.6.x[33] and later are supported, with older versions sti... 6. A global community of programmers develops and maintains CPython, a free and open-source[34] reference implementation. 7. As of January 2021, Python ranks third in TIOBE's index of most popular programming languages, behind C and Java, having previously gained se... The window concludes with the message 'Process finished with exit code 0'.

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 41

Aim

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

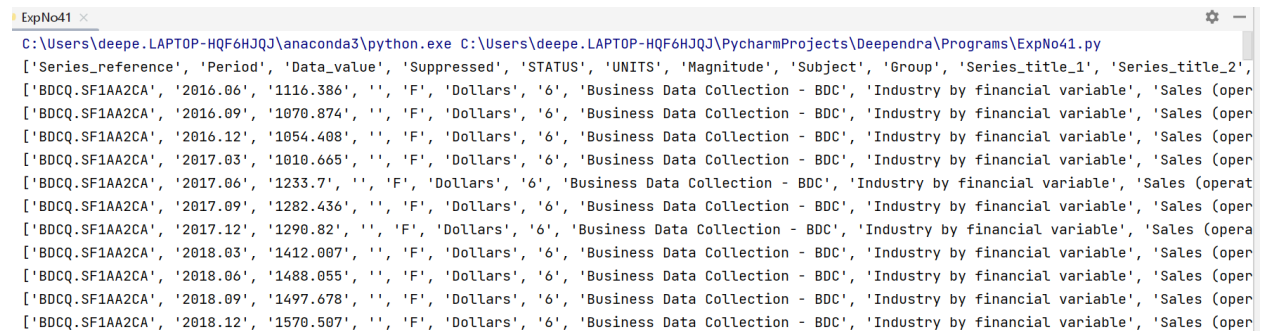
CO5

Create files and form regular expressions for effective search operations on strings and files.

Procedure

```
import csv
with open("dep.csv","r")as f:
    r=csv.reader(f)
    for i in r:
        print(i)
```

Output Screenshot



The screenshot shows a terminal window titled 'ExpNo41' with the following output:

```
C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo41.py
['Series_reference', 'Period', 'Data_value', 'Suppressed', 'STATUS', 'UNITS', 'Magnitude', 'Subject', 'Group', 'Series_title_1', 'Series_title_2',
['BDCQ.SF1AA2CA', '2016.06', '1116.386', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2016.09', '1070.874', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2016.12', '1054.408', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2017.03', '1010.665', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2017.06', '1233.7', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (operat
['BDCQ.SF1AA2CA', '2017.09', '1282.436', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2017.12', '1290.82', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (opera
['BDCQ.SF1AA2CA', '2018.03', '1412.007', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2018.06', '1488.055', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2018.09', '1497.678', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2018.12', '1570.507', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 42

Aim

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

CO5

Create files and form regular expressions for effective search operations on strings and files.

Procedure

```
import csv

with open("dep.csv",newline=")as f:

    d=csv.DictReader(f)

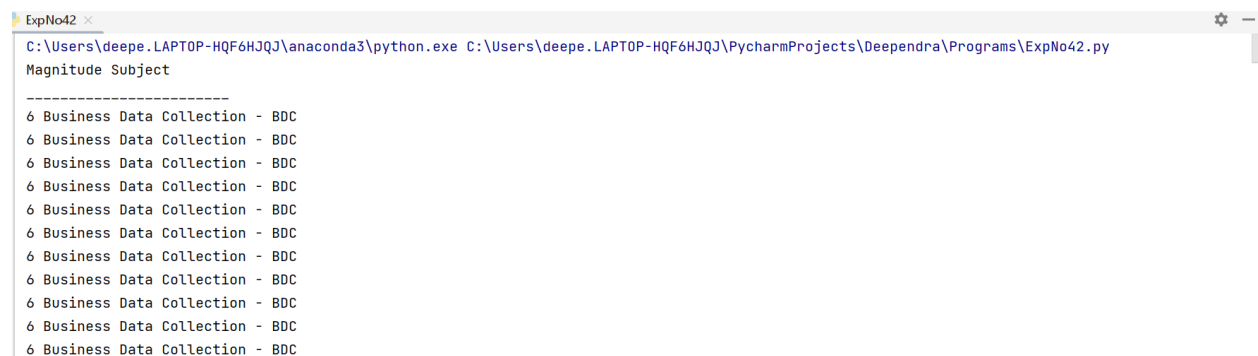
    print("Magnitude Subject")

    print("_____")

    for i in d:

        print(i['Magnitude'],i['Subject'])
```

Output Screenshot



```
ExpNo42 x
C:\Users\deepe.LAPT0P-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPT0P-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo42.py
Magnitude Subject
-----
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
6 Business Data Collection - BDC
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 43**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.

CO5

Create files and form regular expressions for effective search operations on strings and files.

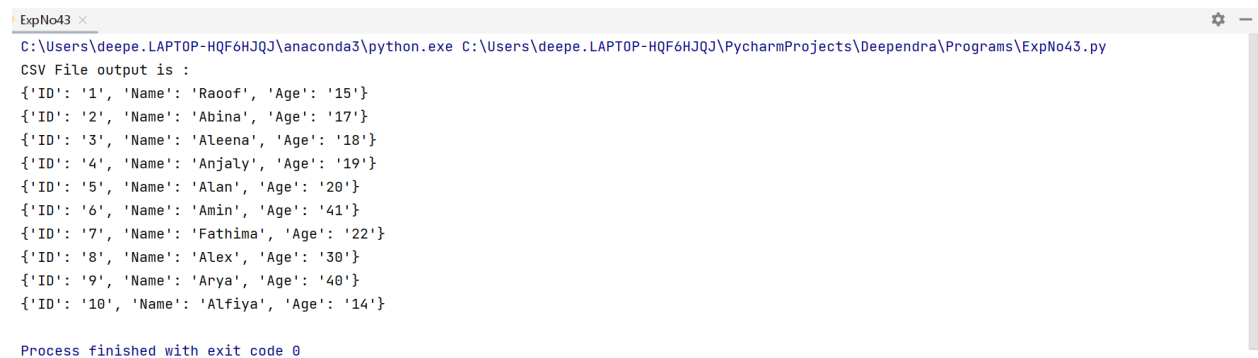
Procedure

```
import csv
c_col=['ID','Name','Age']
dict_data=[{'ID':1,'Name':'Raoof','Age':15},
            {'ID':2,'Name':'Abina','Age':17},
            {'ID':3,'Name':'Aleena','Age':18},
            {'ID':4,'Name':'Anjaly','Age':19},
            {'ID':5,'Name':'Alan','Age':20},
            {'ID':6,'Name':'Amin','Age':41},
            {'ID':7,'Name':'Fathima','Age':22},
            {'ID':8,'Name':'Alex','Age':30},
            {'ID':9,'Name':'Arya','Age':40},
            {'ID':10,'Name':'Alfiya','Age':14}]

try:
    with open("name.csv","w")as f:
        write=csv.DictWriter(f,fieldnames=c_col)
        write.writeheader()
        for i in dict_data:
            write.writerow(i)
except IOError:
    print("Input/Output Error")
```

```
d=csv.DictReader(open("name.csv"))
print('CSV File output is : ')
for i in d:
    print(i)
```

Output Screenshot



The screenshot shows a terminal window titled 'ExpNo43'. The command executed is 'C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo43.py'. The output is 'CSV File output is :', followed by ten JSON objects representing rows from a CSV file. Each object contains 'ID', 'Name', and 'Age' fields. The process finished with exit code 0.

```
ExpNo43
C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo43.py
CSV File output is :
{'ID': '1', 'Name': 'Raooof', 'Age': '15'}
{'ID': '2', 'Name': 'Abina', 'Age': '17'}
{'ID': '3', 'Name': 'Aleena', 'Age': '18'}
{'ID': '4', 'Name': 'AnjaLy', 'Age': '19'}
{'ID': '5', 'Name': 'Alan', 'Age': '20'}
{'ID': '6', 'Name': 'Amin', 'Age': '41'}
{'ID': '7', 'Name': 'Fathima', 'Age': '22'}
{'ID': '8', 'Name': 'Alex', 'Age': '30'}
{'ID': '9', 'Name': 'Arya', 'Age': '40'}
{'ID': '10', 'Name': 'Alfiya', 'Age': '14'}

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 44

Aim

Write a python program to read a CSV file and write the first and display the result in List format

CO5

Create files and form regular expressions for effective search operations on strings and files.

Procedure

```
import csv

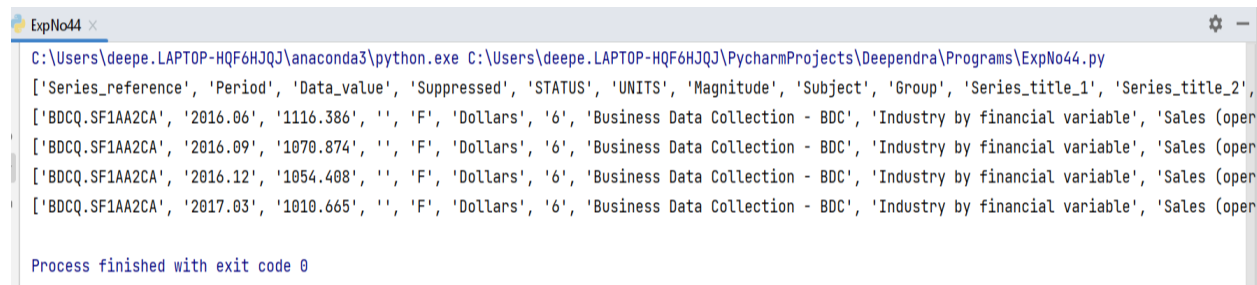
with open('dep.csv', 'r') as original_file:
    reader = csv.reader(original_file)

    with open('new.csv', 'w', newline='') as new_file:
        writer = csv.writer(new_file)

        for i in range(5):
            writer.writerow(next(reader))

    with open('new.csv', 'r') as new_file:
        reader = csv.reader(new_file)
        for row in reader:
            print(row)
```

Output Screenshot



```
ExpNo44 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo44.py
['Series_reference', 'Period', 'Data_value', 'Suppressed', 'STATUS', 'UNITS', 'Magnitude', 'Subject', 'Group', 'Series_title_1', 'Series_title_2',
['BDCQ.SF1AA2CA', '2016.06', '1116.386', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2016.09', '1070.874', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2016.12', '1054.408', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2017.03', '1010.665', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper

Process finished with exit code 0
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 45**Aim**

Write a python program to read a CSV file and write the odd rows to a new file and even rows another new file and finally display both.

CO5

Create files and form regular expressions for effective search operations on strings and files.

Procedure

```
import csv
```

```
with open('dep.csv', 'r') as original_file:  
    reader = csv.reader(original_file)
```

```
with open('odd.csv', 'w', newline='') as odd_file:  
    odd_writer = csv.writer(odd_file)
```

```
with open('even.csv', 'w', newline='') as even_file:  
    even_writer = csv.writer(even_file)
```

```
    i = 1  
    for row in reader:  
        if i % 2 == 1:  
            odd_writer.writerow(row)  
        else:  
            even_writer.writerow(row)  
        i += 1
```

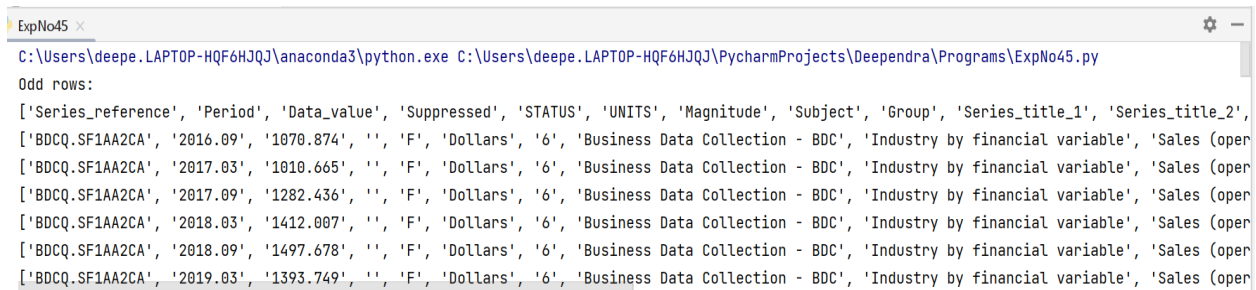
```
with open('odd.csv', 'r') as odd_file:  
    reader = csv.reader(odd_file)
```

```
    print("Odd rows:")  
    for row in reader:  
        print(row)
```

```
with open('even.csv', 'r') as even_file:
    reader = csv.reader(even_file)

    print("Even rows:")
    for row in reader:
        print(row)
```

Output Screenshot



```
ExpNo45 x
C:\Users\deepe.LAPTOP-HQF6HJQJ\anaconda3\python.exe C:\Users\deepe.LAPTOP-HQF6HJQJ\PycharmProjects\Deependra\Programs\ExpNo45.py
Odd rows:
['Series_reference', 'Period', 'Data_value', 'Suppressed', 'STATUS', 'UNITS', 'Magnitude', 'Subject', 'Group', 'Series_title_1', 'Series_title_2',
['BDCQ.SF1AA2CA', '2016.09', '1070.874', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2017.03', '1010.665', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2017.09', '1282.436', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2018.03', '1412.007', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2018.09', '1497.678', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
['BDCQ.SF1AA2CA', '2019.03', '1393.749', '', 'F', 'Dollars', '6', 'Business Data Collection - BDC', 'Industry by financial variable', 'Sales (oper
```

Result

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

Experiment No.: 0**Aim****CO****Procedure****Output Screenshot****Result**

The program was executed and the result was successfully obtained. Thus CO1 was obtained.