

Musaliar College of Engineering & Technology

MUSALIAR COLLEGE P.O., PATHANAMTHITTA - 689 653



LABORATORY RECORD

Certified that this is the Bonafide Record of the work done by
Sri/Smt.....
of.....Semester Class of(Roll No.....)
ofBranch
in theLaboratory
during the academic year 20 - 20

Name of Examination

Reg. No.

External Examiner

Staff in- charge

DEPARTMENT OF COMPUTER APPLICATIONS

VISION

“To produce competent and dynamic professionals in the field of Computer Applications to thrive and cater the changing needs of the society through research and education”.

MISSION

To impart high quality technical education and knowledge in Computer Applications.

To introduce moral, ethical and social values to Computer Application students.

To establish industry institute interaction to enhance the skills of Computer Application students.

To promote research aimed towards betterment of society.

INDEX

[illegible]

[illegible]

Experiment No: 1

DISPLAY FUTURE LEAP YEAS FROM THE CURRENT YEAR TO FINAL YEAR

AIM

To write a Python program to display future leap yeas from the current year to final year

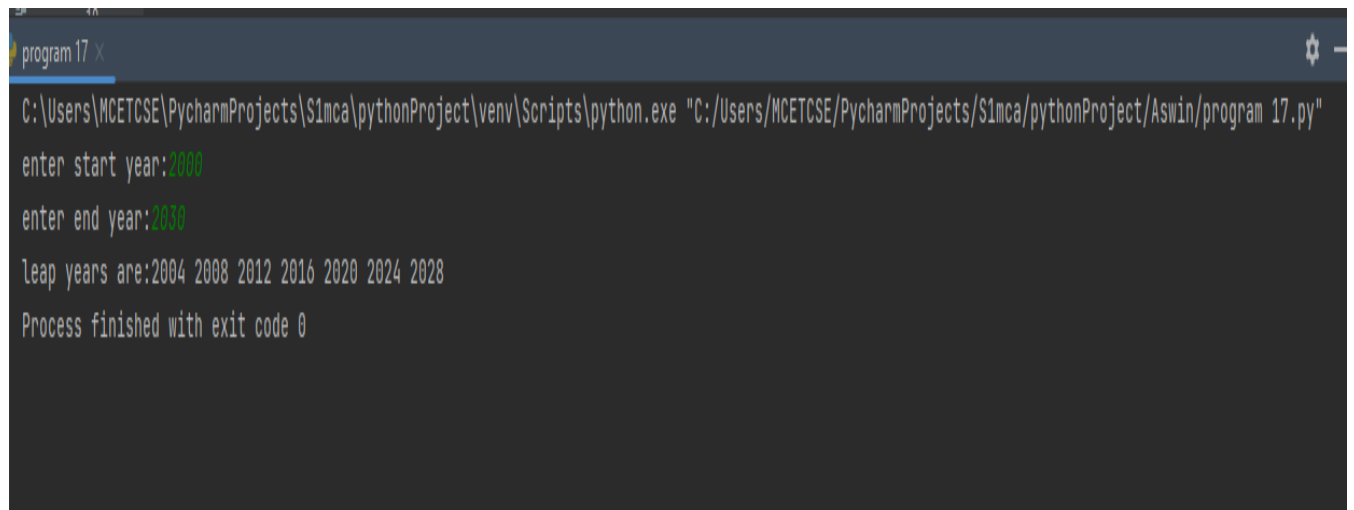
ALGORITHM

1. Read the year using input function
2. Convert this value into integers
3. Store this value in a variable.
4. Follow the steps to check whether the year is leap year or not
 - a. If a year is evenly divisible by 4 means having no remainder then go to next step. If it is not divisible by 4. It is not a leap year.
 - b. If a year is divisible by 4, but not by 100. For example: 2012, it is a leap year. If a year is divisible by both 4 and 100, go to next step.
5. If a year is divisible by 100, but not by 400. For example: 1900, then it is not a leap year. If a year is divisible by both, then it is a leap year.
6. Print the list of leap years till the final year entered by the user.

PROGRAM

```
def find_leap_years(given_year):  
    year=int(input("Enter the year upto you want to print:"))  
    list_of_leap_years=[]  
    while(given_year<year):  
        if(given_year%4==0 or given_year%400==0 and given_year%100==0):  
            list_of_leap_years.append(given_year)  
            given_year=given_year+1  
    return list_of_leap_years  
  
list_of_leap_years=find_leap_years(2021)  
print(list_of_leap_years)
```

OUTPUT



```
program 17 x
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/Aswin/program 17.py"
enter start year:2000
enter end year:2030
Leap years are:2004 2008 2012 2016 2020 2024 2028
Process finished with exit code 0
```

RESULT

The program to display future leap yeas from the current year to final year has executed and verified successfully.

Experiment No: 2

PROMPT THE USER FOR A LIST OF INTEGERS

AIM

To write a Python program to prompt the user for a list of integers. For all values greater than 100, store 'over' instead.

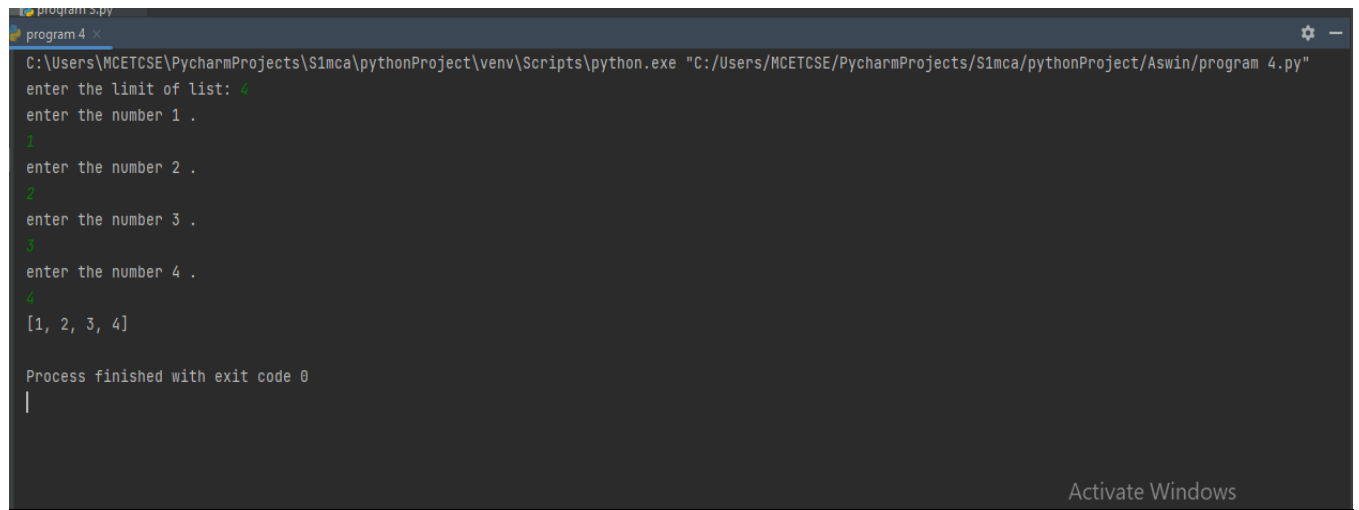
ALGORITHM

1. Read a list of numbers from user.
2. Convert this value into integers.
3. Store this value in a variable.
4. If the value is less than 100, then store the value
5. Else store over in the list

PROGRAM

```
lit=[]
n= int(input("Enter the limit of list :"))
for i in range(0,n):
    print "Enter the number ", i+1, ":"
    num= int(input())
    if(num<100):
        lit.append(num)
    else:
        lit.append("over")
print(lit)
```

OUTPUT



The screenshot shows a terminal window titled "program 4" with the following content:

```
C:\Users\MCETCSE\PycharmProjects\Simca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/Simca/pythonProject/Aswin/program 4.py"
enter the limit of list: 4
enter the number 1 .
1
enter the number 2 .
2
enter the number 3 .
3
enter the number 4 .
4
[1, 2, 3, 4]

Process finished with exit code 0
|
```

An "Activate Windows" watermark is visible in the bottom right corner of the terminal window.

RESULT

The program to prompt the user for a list of integers has executed and verified successfully.

Experiment No: 3

AIM

AREA OF CIRCLE

To write a Python program to accept a radius from user and find the area of the circle by importing math package to assign pi value.

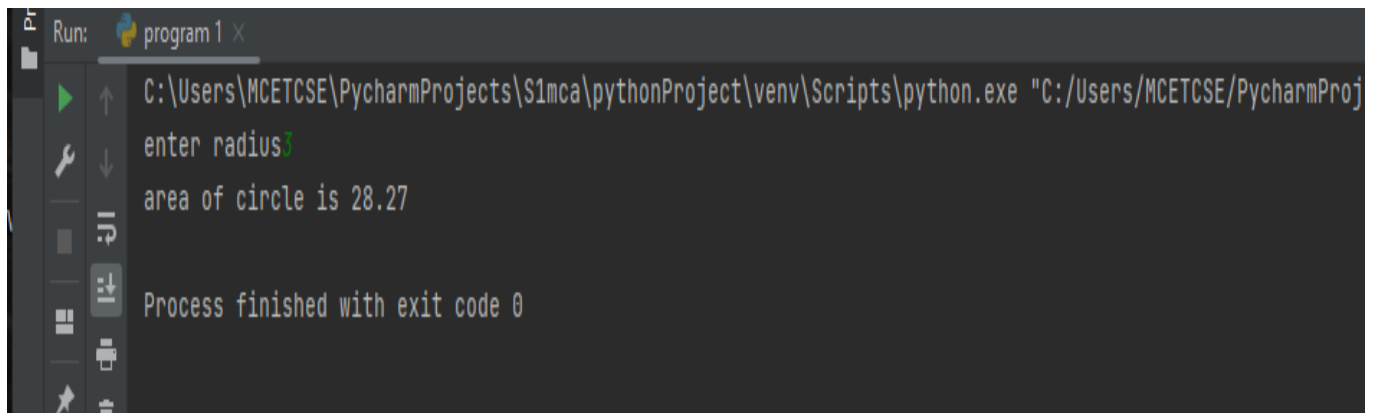
ALGORITHM

1. Import the math package
2. Read value of input from user
3. Convert the value into float
4. Find the area using the math module and radius
5. Print the area of circle

PROGRAM

```
import math
r=float(input("Enter the radius of the circle:"))
area=math.pi*(r**2)
print ("Area of a circle is : %.2f " %area)
```

OUTPUT

A screenshot of a Python IDE's Run window. The title bar says 'Run: program 1 x'. The command line shows the path to the Python interpreter: 'C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProj'. The input 'enter radius' is shown with a green cursor. The output 'area of circle is 28.27' is displayed. At the bottom, it says 'Process finished with exit code 0'.

```
Run: program 1 x
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProj
enter radius
area of circle is 28.27
Process finished with exit code 0
```

RESULT

The program to find area of a circle has executed and verified successfully.

Experiment No: 4

AIM

BIGGEST OF THREE NUMBERS

To write a Python program to accept three numbers from user and find the biggest number.

ALGORITHM

1. Read three numbers from user.
2. Convert these values into float.
3. Store these value in a three variable num1, num2,num3.
4. If num1 is greater than num2 and num3 then print num1 is largest.
5. If num2 is greater than num1 and num3 then print num2 is largest.
6. Else print num3 is largest.

PROGRAM

```
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))
if (num1 > num2) and (num1 > num3):
    largest = num1
elif (num2 > num1) and (num2 > num3):
    largest = num2
else:
    largest = num3
print("The largest number is",largest)
```

OUTPUT

```
program 2 x
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/Aswin/program 2.py"
enter first number:1
enter second number:55
enter third number:3
largest number 55

Process finished with exit code 0
```

RESULT

The program to find biggest among three give number has executed and verified successfully.

Experiment No: 5

FACTORIAL OF A NUMBER

AIM

To write a Python program to accept a number from user and find the factorial of the number

ALGORITHM

1. Read an input from user
2. Convert it into integer
3. Initialize a variable to one
4. If input is less than zero then print an error message
5. If input is equal to zero then display 1 as output
6. Else calculate factorial and print the result
7. Exit.

PROGRAM

```
num = int(input("Enter the number to find factorial :"))
factorial = 1
if (num < 0):
    print("Sorry, factorial does not exist for negative numbers")
elif (num == 0):
    print("The factorial of 0 is 1")
else:
    for i in range(1,num + 1):
        factorial = factorial*i
    print "The factorial of the give number ",num,"is ",factorial
```

OUTPUT

```
program 5
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/Aswin/program 5.py"
enter the number to find factorial 3
the factorial of the given number 3 is 6

Process finished with exit code 0
```

RESULT

The program to find the factorial of a number has executed and verified successfully.

Experiment No: 6

AIM

GENERATE FIBONACCI SERIES OF N TERMS

To write a Python program to generate the Fibonacci series of n terms.

ALGORITHM

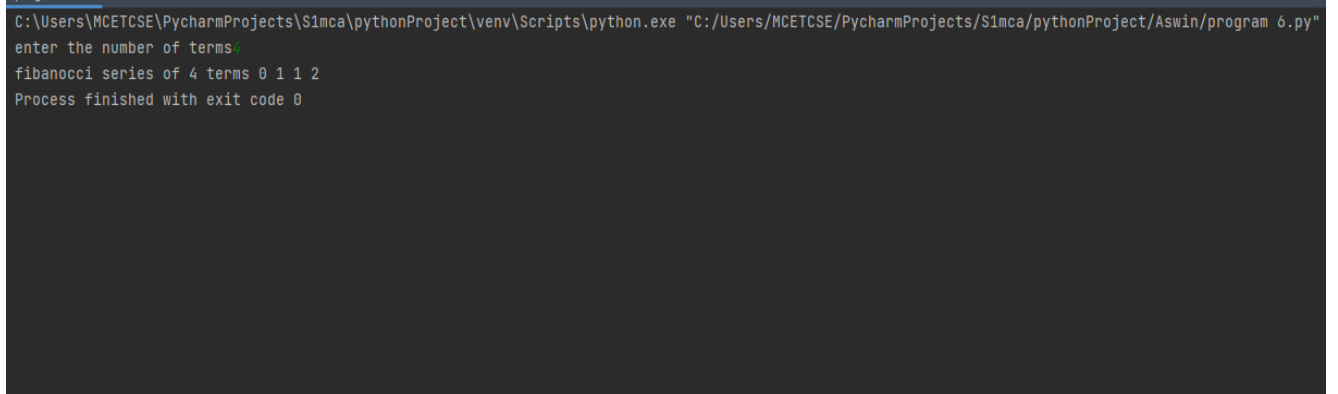
1. Input the 'n' value until which the Fibonacci series has to be generated
2. Initialize sum = 0, f1 = 0, f2 = 1 and count = 1
3. while (count <= n)
4. Print sum
5. Increment the count variable
6. Swap f1 and f2
7. while (count > n)
8. Else
9. Repeat from steps 4 to 7

PROGRAM

```
n = int(input("Enter the number of n terms : "))
f1 = 0
f2 = 1
sum = 0
count = 1
print("Fibonacci Series of n terms: ", end = " ")
while(count <= n):
    print(sum, end = " ")
    count += 1
    f1 = f2
    f2 = sum
```

$sum = f1 + f2$

OUTPUT



```
C:\Users\MCETCSE\PycharmProjects\Simca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/Simca/pythonProject/Aswin/program 6.py"
enter the number of terms
fibanocci series of 4 terms 0 1 1 2
Process finished with exit code 0
```

RESULT

The program to generate Fibonacci series of n terms has executed and verified successfully.

Experiment No: 7

COUNT THE NUMBER OF VOWELS IN A STRING

AIM

To write a Python program to accepted a string from user and count the number of vowels in the string.

ALGORITHM

1. Read the string from user
2. Assign a variable count=0
3. Using a for loop traverse the string
4. if the character in contain 'aeiouAEIOU' the increment the count value by 1
5. print the count

PROGRAM

```
str=raw_input("Enter the string :")
```

```
count=0
```

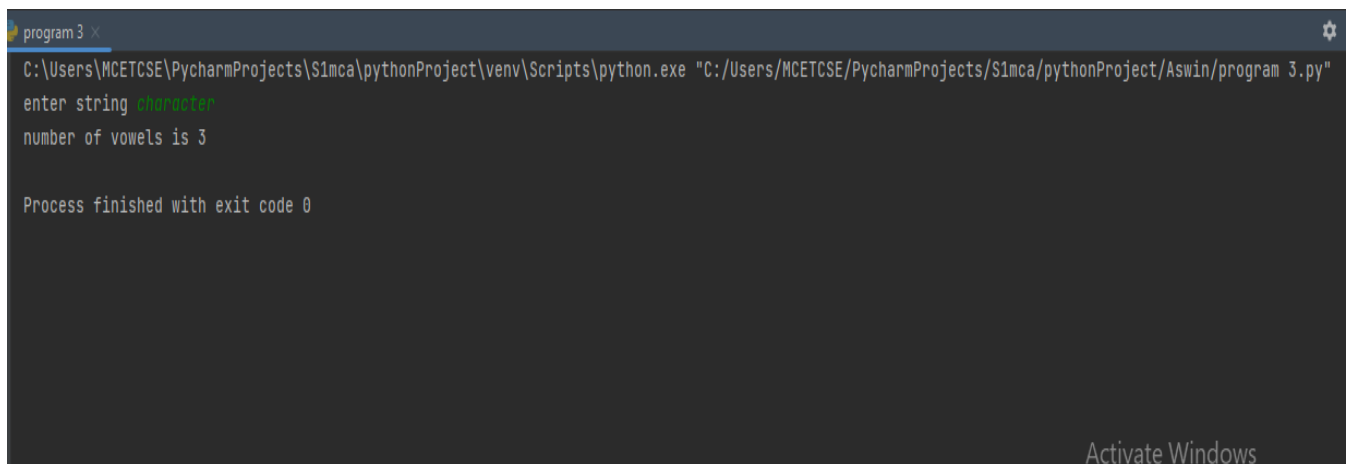
```
for i in str:
```

```
    if i in 'aeiouAEIOU':
```

```
        count +=1
```

```
print "The number of vowels in", str, "is " count
```

OUTPUT



```
program 3 x
C:\Users\MCETCSE\PycharmProjects\Simca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/Simca/pythonProject/Aswin/program 3.py"
enter string character
number of vowels is 3

Process finished with exit code 0

Activate Windows
```

RESULT

The program to count the number of vowels in a given string has executed and verified successfully.

Experiment No: 8

TO PRINT THE PERFECT SQUARES

AIM

To write a Python program to print the perfect squares upto the limit accepted from user

ALGORITHM

1. Read the limit n
2. Assign B=1 and i=1
3. Use for loop to iterate I from B to n
4. Compute $P = B * B$
5. Increment $B = B + 1$
6. check ($P < N$) if true go to step 7 otherwise step8
6. Print P
7. Increment the value of i by 1 and go to step 4 until ($i < \text{limit}$)
8. Exit

PROGRAM

```
n = raw_input("Enter the limit :")
n=int(n)
B,i=1,1
print "The perfect squares upto", n, "is :"
for i in range (B,n):
    P=B*B
    B=B+1
    if (P<N):
        print P
```

OUTPUT

```
program 7 x
C:\Users\MCECSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCECSE/PycharmProjects/S1mca/pythonProject/Aswin/p
enter the limit 9
the perfect square up to 9 is
1
4

Process finished with exit code 0
```

RESULT

The program to print perfect squares has executed and verified successfully.

Experiment No: 9

GENERATE ALL FACTORS OF A NUMBER

AIM

To write a Python program to accept a number from user and generate all factors of that number.

ALGORITHM

1. Read an input from user and pass the value to the function
2. Use a for loop to iterate i from 1 to given number
3. check if number % i == 0 if true print the i else increment the loop value by 1 until i < given number + 1
4. Exit

PROGRAM

```
def print_factors(x):  
    print("The factors of ",x,"are:")  
    for i in range(1, x + 1):  
        if (x % i == 0):  
            print(i)  
  
num = raw_input("Enter the number to find the factors :")  
print_factors(num)
```

OUTPUT

```
C:\Users\MCETCSE\PycharmProjects\Simca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/Simca/pythonProject/Aswin/p  
enter the number to find factor 5  
the factors of 5 are  
1  
5  
  
Process finished with exit code 0
```

Activate Windd

RESULT

The program to find factorial of a given number has executed and verified successfully.

Experiment No: 10

INTEGER OPERATIONS

AIM

Write a python program to accept an integer n and compute $n+nn+nnn$.

ALGORITHM

1. Read a values from user.
2. Convert it into integer
3. Convert to integer and store it in n1
4. Concatenate the string twice, convert into integer and store it in n2
5. Concatenate the string thrice, convert into integer and store it in n3
6. Add n1,n2 and n3 and print the result

PROGRAM

```
a = int(input("Input an integer : "))
n1 = int( "%s" % a )
n2 = int( "%s%s" % (a,a) )
n3 = int( "%s%s%s" % (a,a,a) )
print "n=", n1, \n, "nn= ", n2, \n, "nnn= ", n3
print "sum (n+nn+nnn)=", (n1+n2+n3)
```

OUTPUT

```
C:\Users\MCECSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCECSE/PycharmProjects/S1mca/pythonProject/Aswin/program 9.py"
input an integer 4
n= 4
nn= 44
nnn= 444
sum(n+nn+nnn)= 492

Process finished with exit code 0
|
```

Activate Windows

RESULT

The program to perform integer operation has executed and verified successfully.

Experiment No: 11

LIST OPERATIONS

AIM

Write a python program to Enter 2 lists of integers. Check

- (a) Whether list are of samelength
- (b) whether list sums to same value
- (c) whether any value occur in both.

ALGORITHM

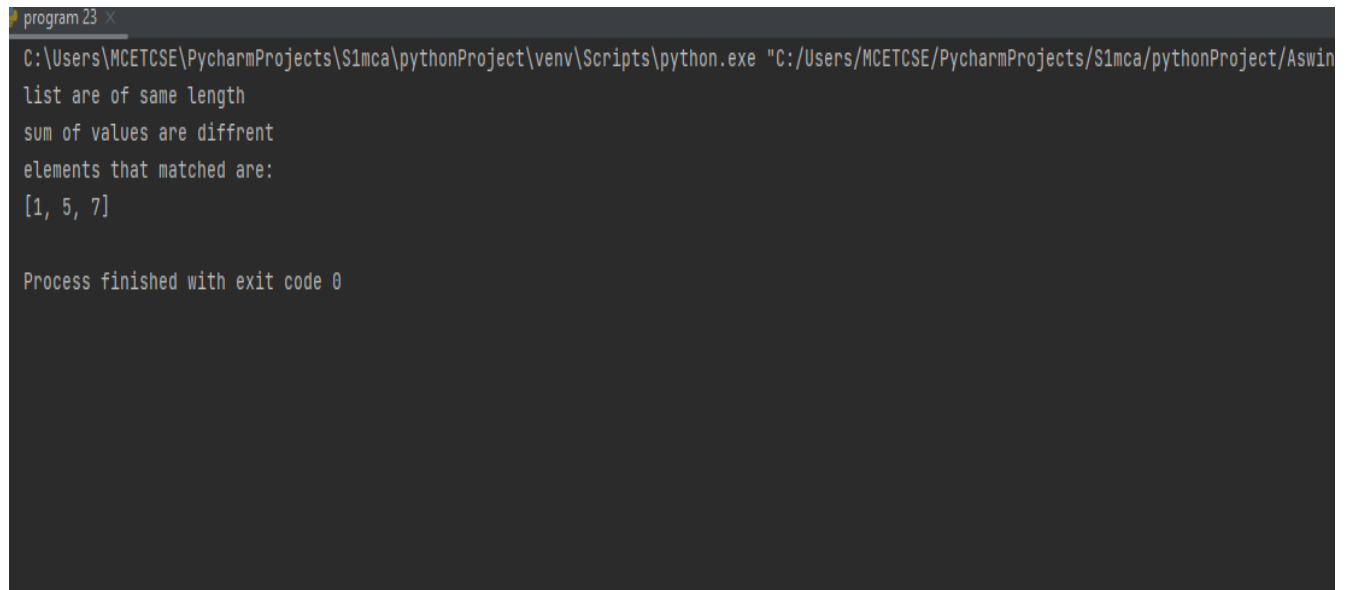
1. Create two integer list and pass the values to each functions
2. Check whether two list contain common elements using for loop
3. Check whether the list sums to same value
4. Check whether list are of same length using sizeof operator.
5. Print the result

PROGRAM

```
lst=[1,3,5,7,9,11,34]
lst1=[5,13,45,7,20,65,1]
s=int(0)
c=int(0)
for i in lst and lst1:
    if len(lst)==len(lst1):
        print("Lists are of same length")
        break
    else:
        print("Lists have different length")break
for i in range(0,len(lst) and len(lst1)):
    s=s+lst[i]
    c=c+lst1[i]
for i in range(0, len(lst) and len(lst1)):if
    s==c:
```

```
print("Sum of values are same")  
break
```

OUTPUT

A screenshot of a Python terminal window titled 'program 23'. The command prompt shows the execution of a Python script. The output of the script is displayed in the terminal, showing that two lists are of the same length, their sums are different, and the elements that matched are [1, 5, 7]. The process finished with exit code 0.

```
program 23  
C:\Users\MCECSE\PycharmProjects\Simca\pythonProject\venv\Scripts\python.exe "C:/Users/MCECSE/PycharmProjects/Simca/pythonProject/Aswin  
list are of same length  
sum of values are diffrent  
elements that matched are:  
[1, 5, 7]  
  
Process finished with exit code 0
```

RESULT

The program to perform list operation has executed and verified successfully.

Experiment No: 12

STRING DATA TYPE OPERATION

AIM

Write a python program to get a string from an input string where all occurrences of first character replaced with '\$', except first character.

ALGORITHM

1. Get a string value and pass the value to the function
2. Store the first character of string to a character variable
3. Replace the occurrence of first character in the string with '\$'
4. Exit

PROGRAM

```
def change_char(str1):  
    char = str1[0]  
    str1 = str1.replace(char, '$')  
    str1 = char + str1[1:]  
    return str1  
  
str= input("Enter the string:")  
print "The original string :",str  
print ("The replaced string :",change_char(str))
```

OUTPUT

```
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/Aswin
Enter the string:paper
the original string: paper
the replaced string: pa$er

Process finished with exit code 0
```

RESULT

The program to get a string from an input string where all occurrences of first character replaced with '\$', except first character has executed and verified successfully.

Experiment No: 13

SWAPING FIRST AND LAST CHARACTER IN A STRING

AIM

Write a python program to create a string from given string where first and last characters

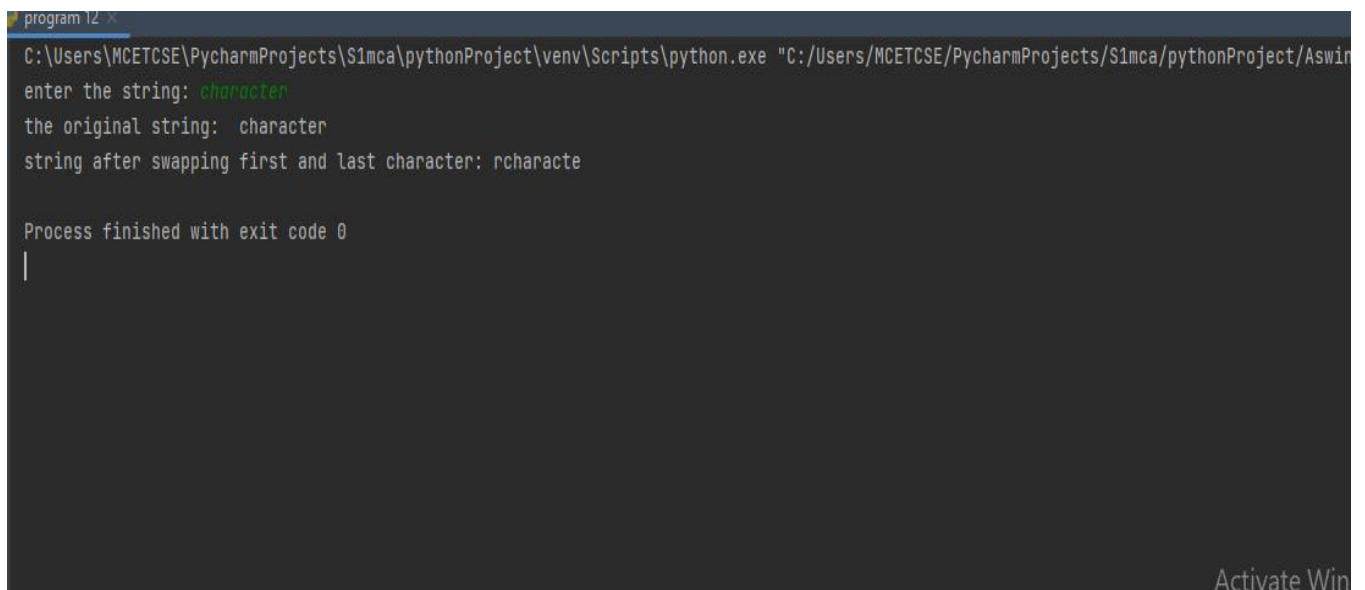
ALGORITHM

1. Get a string value and pass the string to function
2. Apply slice operator ([] and[:]) where the index starting from 0 and ending at -1 and store value str2 and return the value
3. Exit

PROGRAM

```
def character_exchange(str1):  
    str2=(str1[-1:] + str1[1: = -1] + str1[:1])  
    return str2  
  
str= input("Enter the string:")  
print "The original string :",str  
print ("String after swapping first and last character :",character_exchange(str))
```

OUTPUT



```
program 12  
C:\Users\MCECSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCECSE/PycharmProjects/S1mca/pythonProject/Aswin  
enter the string: character  
the original string: character  
string after swapping first and last character: rcharacte  
  
Process finished with exit code 0  
|
```

Activate Win

RESULT

The program to create a string from given string where first and last characters exchanged has executed and verified successfully.

Experiment No: 14

TO PRINT FILENAME EXTENSION

AIM

To write a Python program to print the filename extension.

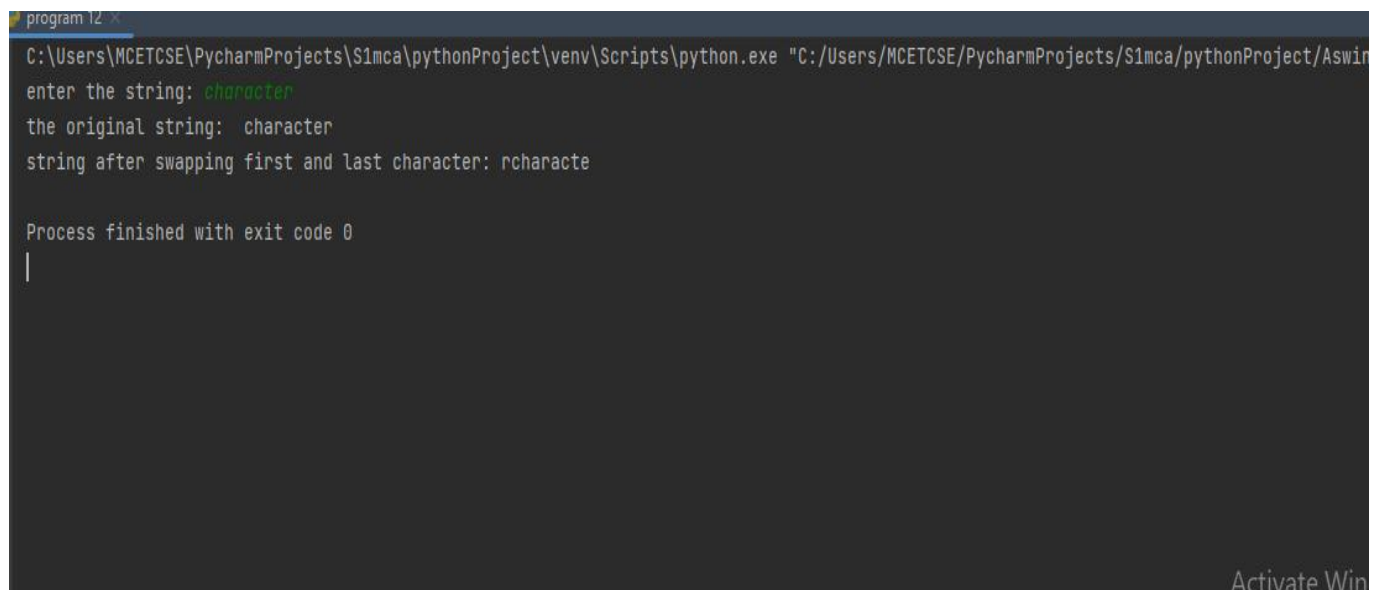
ALGORITHM

1. Read the filename from user
2. Split the filename on the occurrence of dot
3. Store the extension in f_extns
4. Print the extension
5. Exit

PROGRAM

```
filename = input("Input the Filename: ")
f_extns = filename.split(".")
print ("The extension of the file is : " + repr(f_extns[-1]))
```

OUTPUT



```
program 12
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/Aswin
enter the string: character
the original string: character
string after swapping first and last character: rcharacter

Process finished with exit code 0
|
```

Activate Win

RESULT

The program to print the filename extension has executed and verified successfully.

Experiment No: 15

CHECK A STRING IS PALINDROME OR NOT

AIM

To write a Python program to read a string and check whether the string is palindrome or not.

ALGORITHM

1. Read the string from user
2. Declare a variable with the length of the string.
3. Declare a for loop, using half of the length of the string as a reference point.
4. Check if each letter is the same as its mirror equivalent — or, a character on the other side

PROGRAM

```
str = raw_input("Enter the string to check :")
i=0
s=0
k= len(str)
for j in range (k-1,-1,-1):

    if (str[i]!= str[j]):
        s=1
        break
    i=i+1
if(s==0):
    print " The given string", str, " is palindrome"
else:
    print " The given string", str, " is not palindrome"
```

OUTPUT

```
program.py
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/Aswin
enter the string to check:civic
the given string civic is palindrome

Process finished with exit code 0
```

RESULT

The program has executed and verified successfully

Experiment No: 16

PATTERN PRINTING

AIM

To write a Python program to construct the following pattern using nested for loop

```
#
# #
# # #
# # # #
# # # # #
# # # #
# # #
# #
#
```

ALGORITHM

1. Initialize the value of N that decides the size of pattern.
2. Iterate the number of rows using outer for loop
3. Next, the inner loop to handle the number of columns. Inner loop iteration depends on the values of the outer loop.
4. Print the pattern using print() function.
5. Add a new line after each row, i.e. after each iteration of outer for loop so you can display the pattern appropriately.

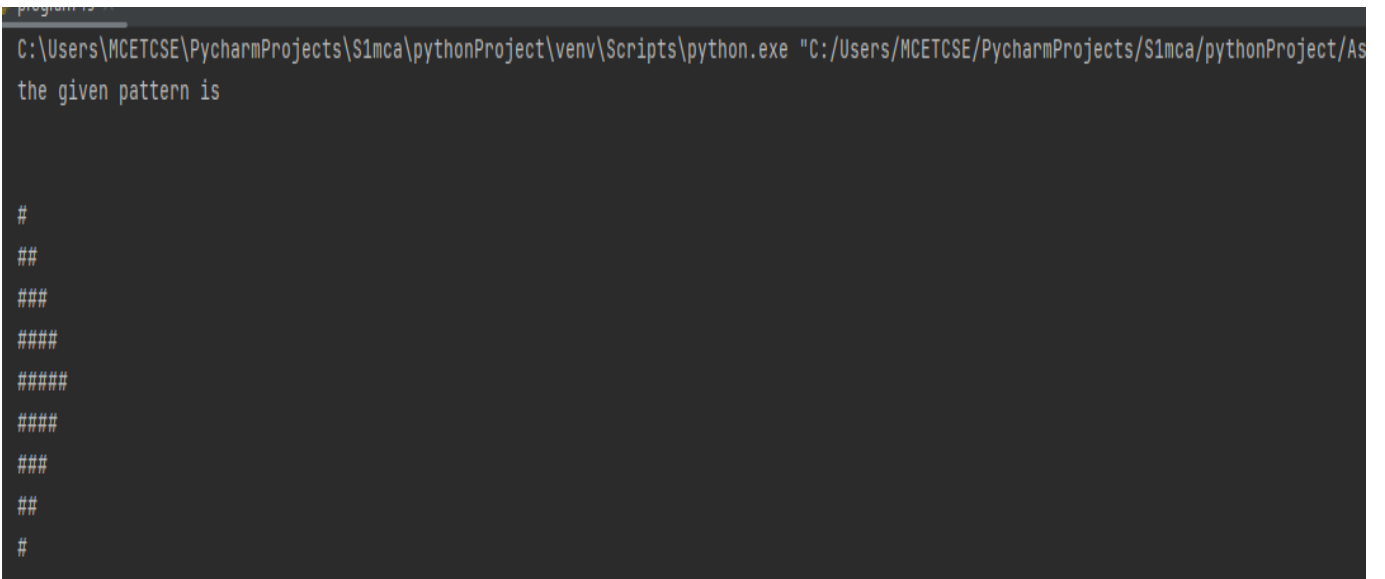
PROGRAM

```
n= 5
print " The given pattern is", \n
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



```
program 12
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/As
the given pattern is

#
##
###
####
#####
####
###
##
#
```

RESULT

The program to print the given pattern has executed and verified successfully.

Experiment No: 17

PRINT A GIVEN PYRAMID OF NUMBERS

AIM

Write a python program to print a given pyramid of numbers.

ALGORITHM

1. Initialize the step size of n that decides the height of pyramid.
2. Iterate the number of rows using outer for loop where i starts from 1 and ends at $i < n+1$
3. Assign $k=i$
4. Next, the inner loop to handle the number of columns. Inner loop iteration depends on the values of the outer loop.
5. Print the value of k using print() function.
6. Add a new line after each row, i.e. after each iteration of outer for loop so you can display the pyramid.

PROGRAM

```
n=int(input("Enter the step size:"))
print " The pyramid for the given size ",n, "is:" \n
for i in range(1,n+1):
    k=i
    for j in range (1,i+1):
        print k, end= " "
        k+=i
    print " "
```

OUTPUT

```
program 16 ×
C:\Users\MCECSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe "C:/Users/MCECSE/
enter the step size 3
the pyramid for the given size 3 is:

1
2 4
3 6 9

Process finished with exit code 0
```

RESULT

The program to print the pyramid given size has executed and verified successfully.

Experiment No: 18

CHARACTER SWAPPING

AIM

Write a python program to create a single string separated with space from two strings by swapping the character at position 1.

ALGORITHM

1. Read two characters
2. Swap the first character of two string and store it in new variable.
3. Concatenate new string separated by space
4. Print the resultant string
5. Exit.

PROGRAM

```
a= input("Enter first string: ")
b=input("Enter second string: ")
new_a = b[:1] + a[1:]
new_b = a[:1] + b[1:]
print " The string after character swapping :"(new_a + ' ' + new_b)
```

OUTPUT

```
Enter first string: abc
Enter second string: xyz
The string after character swapping : xbc ayz

Process finished with exit code 0
```

RESULT

The program to create a single string separated with space from two strings by swapping the character at position 1 has executed and verified successfully.

Experiment No: 19

GCD OF 2 NUMBERS

AIM

Write a Python program to find gcd of 2 numbers.

ALGORITHM

1. Import the math package
2. Read two values from user.
3. Convert it into integer using int function.
4. Calculate and print gcd of input using gcd function.

PROGRAM

```
import math
num1= int(input("Enter first number:"))
num2=int(input("Enter second number:"))
print("The gcd of",num1, " and ",num2," is : ")
print(math.gcd(60, 48))
```

OUTPUT

```
Enter first number:60
Enter second number:48
The gcd of 60 and 48 is :
12

Process finished with exit code 0
```

RESULT

The program to calculate the gcd of 2 numbers has executed and verified successfully.

Experiment No: 20

WORKING WITH GRAPHIC PACKAGES

AIM

Write a python program to find area and perimeter of figures by different importing statements.

ALGORITHM

1. Create a package called graphics.
2. Include modules rectangle and circle
3. Include methods to find area and perimeter of rectangle and circle.
4. Create a sub package called three graphics.
5. Include modules cuboid and sphere.
6. Include methods to find area and perimeter of rectangle and circle.
7. Import statements to print the area and perimeter of figures.
8. Exit.

PROGRAM :

```
circle.py
print("****CIRCLE****")
import math
def circle_perimeter(radius):
    return math.pi*radius*2
def circle_area(radius):
    return math.pi*radius*radius
def main():
    radius=float(input("Enter value for radius of circle :"))
    area=circle_area(radius)
    perimeter=circle_perimeter(radius)
    area=round(area,4)
    perimeter=round(perimeter,4)
```



```
print("The Area of circle is :",area)
print("The perimeter of circle is :",perimeter)main()
```

rectanle.py

```
print("****RECTANGLE****")
def rect_perimeter(l,w):
    return 2*(l+w)
def rect_area(l,w):
    return l*w
def main():
    l=int(input("Enter the length of rectangle:"))
    w=int (input("Enter the width of rectangle:"))
    area=rect_area(l,w)
    perimeter=rect_perimeter(l,w)
    area=round(area,4)
    perimeter=round(perimeter,4)
    print("Area of rectangle :",area)
    print("perimeter of rectangle :",perimeter)
main()
```

cuboid.py

```
print("****CUBOID****")
def cuboid_SA(length,width,height):
    return 2*(length*width+height+width*height)
def cuboid_volume(length,width,height):
    return length*width*height
def main()
    length=float(input("please enter the length of a cuboid:"))
    width=float(input("please enter the width of a cuboid:"))
    height=float(input("please enter the height of a cuboid:"))
    area=cuboid_SA(length,width,height)
    perimeter=cuboid_volume(lenth,width,height)
    area= round(area,4)
    perimeter=round(perimeter,4)
```

```
print("The Area of cuboid is :",area)
print("The perimeter of cuboid is :",perimeter)
main()
```

sphere.py

```
print("****SPHERE****")
import math
def sphere_area(radius):
    return 4*math.pi*radius**2
def sphere_vol(radius):
    return(4/3)*math.pi*radius**3
def main():
    radius=float(input("enter radius of sphere:"))
    area=sphere_area(radius)
    volume=sphere_vol(radius)
    area=round(area,4)
    volume=round(volume,4)
    print("The area of sphere is:",area)
    print("The perimeter of sphere is:",volume)
main()
```

main.py

```
import graphics.cicle
import graphics.rectangle
from graphics.threedgra.cuboid import*
from graphics.threedgra.sphere import*
```

OUTPUT

```
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject
****CIRCLE****
Enter radius: 3
AREA OF CIRCLE IS: 28.2743
PERIMETER OF CIRCLE IS: 18.8496
****RECTANGLE****
Enter the length of rectangle: 2
Enter the width: 3
Area of Rectangle: 6
Perimeter of rectangle : 10
****CUBOID****
ENTER THE LENGTH OF CUBOID: 2
ENTER THE WIDTH: 3
Enter the height: 3
Area of cuboid: 12.0
Perimeter of cuboid: 12.0
****SPHERE****
Enter the radius of sphere: 2
AREA OF SPHERE 50.2655
Perimeter of sphere: 33.5103
```

RESULT

The python program to find area and perimeter of figures by different importing statements.

Experiment No: 21

COMPARE TWO RECTANGLE OBJECTS BY THEIR AREA

AIM

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

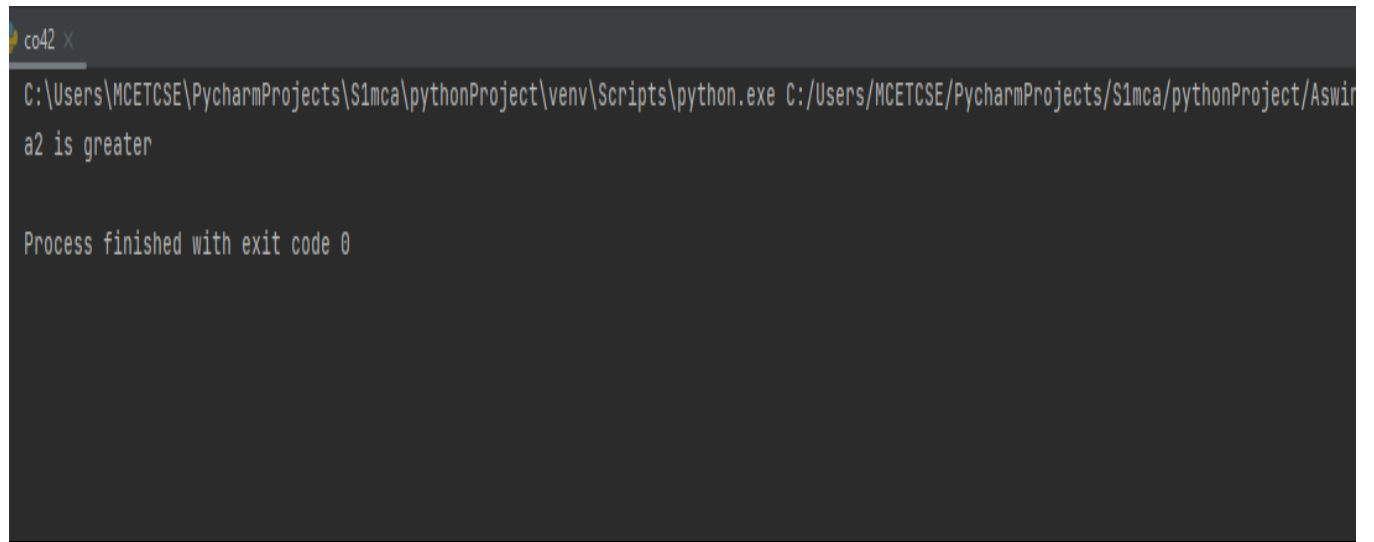
ALGORITHM

1. Create a class rectangle with attributes length and breadth to find area and perimeter of a rectangle.
2. Create three function inside class Rectangle.
 - i. `def __init__()` for inputing length & breadth.
 - ii. `def area()` to find area of the rectangle.
 - iii. `def perimeter()` to find perimeter of a rectangle
3. Display the result of area of both rectangles and find it whether it is matching or not.
4. Display the result.

PROGRAM

```
class rect:
    def __init__(self,l,b): self.length=l
        self.width=b
    def findArea(self): b=(self.length * self.width)
        return b
    def findPerimeter(self):
        c=2*(self.length+self.width) return c
a1=rect(10,3) a2=rect(1,3)
print(a1.findArea())
print(a1.findPerimeter())
if a1.findArea()>a2.findArea():print("a1 is greater")
else:
    print("a2 is greater")
```

OUTPUT



```
co42 x
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject/Aswin
a2 is greater

Process finished with exit code 0
```

RESULT

The program to find area of rectangle and perimeter of rectangle and compare the area of rectangle is executed and verified successful.

Experiment No: 22

BANK ACCOUNT TRANSACTION USING CLASS

AIM

To create a bank account 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.

ALGORITHM

1. Create a class Bank_Account
2. Define a function `__init__()`
3. Define a function `deposit()` for deposit functions
4. Define a function `withdraw()` for withdrawing money
5. Define a function `display()` to display the balance amount after transaction

PROGRAM

```

Class bank_account:
    def getData (self,name,accno,acctype,balance):
        self.name=name
        self.accno=accno
        self.acctype=acctype
        self.balance=balance
    def displayCustomer (self):
        print("customer Name:", self.name)
        print("Account Number:",self.accno)
        print("Account Type:", self.acctype)
        print("Balance amount :", self.balance)
    def deposit(self,amount):
        self.balance=self.balance+amount
    def withdrawal(self,amount):
        if self.balance-amount<0:
            print("insufficent funds")
        else:
            self.balance=self.balance-amount

print("Hello Welcome to BANKING SYSTEM")
ch=0
obj=bank_account()

```

```

while ch!=5:
    print("Select your option")
    print("1.New customer")
    print("2.Deposit")
    print("3.Withdrawal")
    print("4.Display")
    print("5.Exit")
    ch=int(input("Enter your choice:"))
    if ch==1:
        obj=bank_account()
        n=input("Enter name:")
        no=int(input("Enter account number:"))
        t=input("Enter Account Type(SB/C):")
        b=int(input("Enter the Amount:"))
        obj.getData(n,no,t,b)
    if ch==2:
        b=int(input("Enter the amount to be deposited :"))
        obj.deposit(b)
    if ch==3:
        b=int(input("Enter the amount to be withdrawns:"))
        obj.withdrawal(b)
    if ch==4:
        obj.displayCustomer()
else:print("program terminated !!!")

```

OUTPUT

```

C:\Users\MCETCSE\PycharmProjects\Simca\pythonProject\venv\Scripts\python.exe C:/Users/MCETCSE/PycharmProjects/Simca/pythonProje
Hello Welcome to BANKING SYSTEM
Select your option
1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:1
Enter name:ASWIN
Enter account number:123456677
Enter Account Type(SB/C):SB
Enter the Amount:1000
program terminated !!!
Select your option
1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:2
Enter the amount to be deposited :1000
program terminated !!!
Select your option
1.New customer
2.Deposit

```

Acti

```

1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:4
customer Name: ASWIN
Account Number: 123456677
Account Type: SB
Balance amount : 2000
Select your option
1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:3
Enter the amount to be withdrawns:500
program terminated !!!
Select your option
1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:4

```



```
1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:3
Enter the amount to be withdrawns:500
program terminated !!!
Select your option
1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:4
customer Name: ASWIN
Account Number: 123456677
Account Type: SB
Balance amount : 1500
Select your option
1.New customer
2.Deposit
3.Withdrawal
4.Display
5.Exit
Enter your choice:
```

RESULT

The program to create bank account and display the transaction has executed and verified successfully

Experiment No: 23

DISPLAY INFORMATION ABOUT A PYTHON BOOK

AIM

To create a class publisher (name).derive class book from publisher with attribute title and author.Derive class python from book with attribute price and no: of pages. Display information about a python book .

ALGORITHM

1. Create a class publisher
2. Define a function `__init__()`
3. Create a derived class book
4. Create a derived class python
5. Define a function `display()` to display the details of python book

PROGRAM

```
class publisher:
    def __init__(self,n):
        self.name=n
class book(publisher):
    def __init__(self,n,t,a):
        super().__init__(n)
        self.title=t
        self.author=a
class python(book):
    def __init__(self,n,t,a,p,pgs):
        super().__init__(n,t,a)
        self.price=p
        self.pages=pgs
    def display(self):
        print(p1.name)
        print(p1.title)
        print(p1.author)
        print(p1.price)
        print(p1.pages)
p1 = python("python", "introduction to python", "jeeva jose", 450, 300)
p1.display()
```

OUTPUT

```
C:\Users\MCETCSE\PycharmProjects\S1mca\pythonProject\venv\Scripts\python.exe C:/Users/MCETCSE/PycharmProjects/S1mca/pythonProject,
python
introduction to python
jeeva jose
450
300

Process finished with exit code 0
```

RESULT

The program to class publisher and display information about a python book has executed and verified successfully

Experiment No: 24

READ FILE LINE BY LINE AND STORE IN LIST

AIM

To write a Python program to read a file line by line and store it in a list

ALGORITHM

1. Create a function named “read_file(file_name)”
2. Create a text file named file1.txt for writing the content
3. Read the file file1.txt and store it in the list and display the output.

PROGRAM

```
fn=open("newfile1.txt",'r')
s=fn.readline()
l=s.split()
print(l)
```

INPUT TEXT FILE: file1.txt

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance.

OUTPUT

```
[‘Python is an interpreted, object-oriented, high-level programming language with dynamic’
,“semantics. Python's simple, easy to learn syntax emphasizes readability and therefore reduces
the “, ”cost of program maintenance”]
```

RESULT

The program to print the filename extension has executed and verified successfully

Experiment No:25**COPY ODD LINES OF ONE FILE TO ANOTHER****AIM**

To write a python program to copy odd lines of one text file to another text file

ALGORITHM

- 1) Create a file named file1.txt and file2.txt
- 2) Write some data line by line in file1.txt file
- 3) file2.txt file is used to store odd lines from file1.txt file
- 4) After copying the odd lines to file2.txt file display the content of file2.txt file

PROGRAM

```

file1 = open('file1.txt', 'r')
file2 = open('file2.txt', 'w')
lines = file1.readlines()
for i in range(0, len(lines)):
    if(i % 2 == 0):
        file2.write(lines[i])
file1.close()
file2.close()
file1 = open('file1.txt', 'r')
file2 = open('file2.txt', 'r')
str1 = file1.read()
str2 = file2.read()
print("file1 content...")
print(str1)
print()
print("file2 content...")
print(str2)
file1.close()
file2.close()

```

OUTPUT:

```

file1 content...
aa
bb
cc
dd
file2 content... aa
cc

```

RESULT

The python program to copy odd lines of one text file to another text file has executed and verified successfully.

