EXPERIMENT NO. 1

Objective - Write a program to find the gcd of two nos

Algorithm-

1. Start
2. Define a user defined function named hcf and initiate two variables(a,b)
3. Initiate a loop, if any one the number is 0 then return the other number
4. Else return a modulus b.
5. Then we have to pass the the function to the user defined function (hcf)
6. stop

Code snippet-

```
def hcf(a, b):
    if(b == 0):
        return a
    else:
        return hcf(b, a % b)


a = int(input("enter a first number"))
b = int(input("enter second number"))
  print("The gcd of a and b is : ", end="")
print(hcf(a, b))
```

Output-

```
enter a first number45
enter second number78
The gcd of a and b is : 3
```

EXPERIENT NO. 2

Objective- Write program to print multiplication table of any number

Algorithm-

1. start
2. take integer from the user
3. start for loop and initiate it.
4. Iterate the loop from 1 to till 11
5. now,, print n*i
6. stop

Code snippet-

```
##to print the table of a number

n=int(input("enter a number"))

for i in range(1,11):

    print(n*i)
```

Output-

```
enter a number8

8

16

24

32

40

48

56

64

72

80
```

Experiment no. 3

Objective- Write a program to check whether it is palindrome or not

Algorithm-

1. start
2. take input string from the user
3. initiate for loop and check the condition whether the input string and the reverse string are equal or not
4. if true, print string is palindrome else print string is not palindrome
5. stop

Code snippet-

```
str=input("enter set of strings:")

if str==str[::-1]:

 print("string is pallindrome")

else:

  print("string is not pallindrome")
```

Output-

```
enter set of strings: abccba

string is palindrome

enter set of strings: funny

string is not palindrome
```

EXPERIMENT NO. 4

Objective – Write a program Python Program to calculate arithmetic operation on two number using user-defined functions.

Algorithm-

1. start
2. take two input integers from the user and store them in the variable a,b
3. create user defined function sum, subtraction ,multiplication ,division
4. pass the two variables in the function using and using return we print the value.
5. stop

Code snippet-

```
a=int(input("enter first number"))

b=int(input("enter second nummber"))

def sum():

    c=a+b

    return c

print("sum of two numbers is",sum())

def subtraction():

    d=a-b

    return d

print("subtraction of two numbers is",subtraction())

def multiplication():

    e=a*b

    return e

print("multipliaction of two numbers is",multiplication())

def division():

    f=a/b
```

```
    return f
print("division of two numbers is", division())
```

Output-

```
enter first number8
enter second nummber4
sum of two numbers is 12
subtraction of two numbers is 4
multiplication of two numbers is 32
division of two numbers is 2.0
```

Experiment no. 5

Objective-Write a Program to Python program to Calculate diameter and area of circle using user defined function

ALGORITHM-

1. start
2. import math library
3. take a input integer from the user
4. create two user defined function diameter and area
5. under diameter function create a variable ‘a’ and equalise the variable to 2*r and print the value of variable
6. under area function create a variable ‘b’ and equalise the variable to pi*r*r and print the value of the variable.
7. stop

Code snippet-

```
import math

r=int(input("enter radius of the circle"))

def diameter():

    a=2*r

    return a

print("diameter of the circle is", diameter())

def area():

    b=math.pi*r*r

    return b

print("area of the circle is",area())
```

Output-

```
enter radius of the circle7

diameter of the circle is 14

area of the circle is 153.93804002589985
```

EXPERIMENT NO. 6

Objective- Input any number from user and calculate factorial of a number

Algorithm-

1. start
2. take input from the user and put it in a variable n
3. if n=0 ,print 0
4. elif n=1, print 1
5. else n>0, initialise a variable named fcatorial to1 , and iterate the for loop till n+1
6. Print factorial *i
7. stop

Code snippet-

```
n=int(input("enter a number"))

##factorial of a number

if n==0:

    print(1)

elif n==1:

    print(1)

elif n>0:

    factorial=1

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

    factorial=factorial*i

print("factorial of a number is =",factorial)
```

Output-

```
enter a number 7

factorial of a number is = 5040
```

EXPERIMENT NO. 7

OBJECTIVE- Input any number from user and check it is Prime no. or not

ALGORITHM-

1. start
2. Take input integer from the user
3. Initiate the for loop and enter the range from 2 to 10
4. Declare a variable named temp and Initialize the variable to 0
5. Check if n%i==0 ,increase the value of the variable by 1
6. Now out of the loop check whether the value of temp is 0 print the number is prime else print the number is not prime
7. stop

Code snippet-

```
n=int(input("enter a input integer"))

for i in range(2,10):

    temp=0

    if n%i==0:

        temp+=1

if temp==0:

    print("number is prime")

else:

    print("number is not prime")
```

Output-

```
enter a input integer5

number is prime

enter a input integer9

number is not prime
```

EXPERIMENT NO. 8

Objective- Write a program to find sum of elements of List recursively

Algorithm-

1. start
2. we have to initialize the elements of list
3. then we pass on the actual argument to the function
4. then we initialize a variable named with sum with 0
5. then after we start a for loop, and add the next element of the list to the variable sum.
6. And return the function
7. Stop

Code snippet-

```
list=[23,4,2,6,7]

def sumOfList(list):

    Sum=0

    for i in list:

        Sum+=i

    return Sum

print(sumOfList(list))
```

Output-

42

EXPERIMENT NO.9

Objective- Write a program to calculate the nth term of Fibonacci series

Algorithm-

1. Start
2. We declare a function named Fibonacci and pass argument n
3. We check whether n <=0 then the input is incorrect and if n=1 then return 0
4. And other condition print a+b
5. Repeat until n=2
6. C=a+b
7. a=b and b=c
8. stop

Code snippet-

```
def Fibonacci(n):
    if n<= 0:
        print("Incorrect input")
    elif n == 1:
        return 0
    elif n == 2:
        return 1
    else:
        return Fibonacci(n-1)+Fibonacci(n-2)
print(Fibonacci(10))
```

Output-

34

EXPERIMENT NO. 10

OBJECTIVE- Program to read the content of file and display the total number of consonants, uppercase, vowels and lower case characters.

Algorithm-

1. Start
2. We take input from the user as the character variable.
3. We initialise the variable named vowel, consonant, uppercase, lowercase as 0
4. We initiate for loop and iterate till the length of string
5. Check if the element is either a,e,i,,o,u then we increase the value of vowel by 1 otherwise increase the value of consonant by 1
6. Then, we will check whether the element is upper, then increase the value of uppercase by 1 using (isupper) function and check is lower and increase the value of lowercase by 1 using (islower) function
7. Stop

Code snippet-

```
s = input("Enter any string :")

vowel = consonant = uppercase = lowercase= 0

for i in s:

    if(i == 'a' or i == 'e' or i == 'i' or i == 'o' or i == 'u'or i == 'A' or i == 'E' or i == 'I' or i == 'O' or i == 'U'):

        vowel = vowel +1

    else:

        consonant = consonant + 1

    if i.isupper() :

       uppercase = uppercase + 1

    if i.islower():

       lowercase = lowercase + 1

print("Total number of vowel:",vowel)

print("Total number of consonent:",consonant)
```

```
print("Total number of uppercase letter:",uppercase)

print("Total number of lowercase letter:",lowercase)
```

output-

```
Enter any string :HEllo world

Total number of vowel: 3

Total number of consonent: 8

Total number of uppercase letter: 2

Total number of lowercase letter: 8
```

EXPERIMENT NO. 11

OBJECTIVE- Python program to write those lines which have the character ‘P’ from one text file to another text file

ALGORITHM-

1. Start
2. Open a text file in read mode and other file in write mode
3. Now we readlines from first file using readlines() command
4. Now we initialise for loop and check whether character ‘p’ is in s or not
5. Now we print i the other file.
6. And close both the files
7. stop

CODE SNIPPET-

```
fin=open(“book.txt”,”r”)

fout=open(“story.txt”,”w”)

s=fin.readlines()

for i in s:

        if ‘p’ in s:

                fout.write(i)

fin.close()

fout.close()
```