

S.No: 1	Exp. Name: <i>Write a python script to display a simple message.</i>	Date: 2024-02-12
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Aim:

Write a python script to display a simple message.

Source Code:

sample_messag.py
<pre>### msg="Welcome to Python Programming Lab"; print(msg);</pre>

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Welcome to Python Programming Lab

S.No: 2	Exp. Name: Write a python script to perform basic arithmetic operations on two values which are accepted from the user	Date: 2024-02-26
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Aim:

Write a python script to perform basic arithmetic operations on two values which are accepted from the user

Source Code:

operation.py

```
num1 = input('Enter a number1: ')
num2 = input('Enter a number2: ')
sum = int(num1)+int(num2)
min = int(num1)-int(num2)
Mul = int(num1)*int(num2)
div = float(num1)/float(num2)
mod = int(num1)%int(num2)
fd = int(num1)//int(num2)
ex = int(num1)**int(num2)
print('Addition of {0} and {1} is {2}'.format(num1,num2, sum))
print('Subtraction of {0} from {1} is {2}'.format(num1,num2, min))
print('Multiplication of {0} with {1} is {2}'.format(num1,num2, Mul))
print('Division of {0} by {1} is {2}'.format(num1,num2, div))
print('Modulus of {0} by {1} is {2}'.format(num1,num2, mod))
print('Floor Division of {0} by {1} is {2}'.format(num1,num2, fd))
print('Exponent of {0} to the power of {1} is {2}'.format(num1,num2, ex))
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter a number1:
8
Enter a number2:
4
Addition of 8 and 4 is 12
Subtraction of 8 from 4 is 4
Multiplication of 8 with 4 is 32
Division of 8 by 4 is 2.0
Modulus of 8 by 4 is 0
Floor Division of 8 by 4 is 2
Exponent of 8 to the power of 4 is 4096

S.No: 3	Exp. Name: Write a python script to calculate the factorial of a given number.	Date: 2024-03-12
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Aim:

Write a python script to calculate the factorial of a given number.

Source Code:

factorial.py

```
import math
n=int(input("Enter a number :"))
fact=1
for i in range(1,n+1):
    fact = fact*i
print("Factorial of",n,"is",fact)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter a number :
5
Factorial of 5 is 120

S.No: 4	Exp. Name: Write a python script to calculate sum of individual digits of a given number	Date: 2024-03-12
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Aim:

Write a python script to calculate sum of individual digits of a given number

Source Code:

sumofindi.py

```
num = input("Sum of individual difits of a given number \nEnter a number :")
sum = 0
for i in num:
    sum = sum + int(i)
print("The sum of",num,"is :",sum)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Sum of individual difits of a given number
Enter a number :
5234
The sum of 5234 is : 14

S.No: 5	Exp. Name: Write a python script to display the prime number series up to the given N Value	Date: 2024-03-12
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Aim:

Write a python script to display the prime number series up to the given N Value

Source Code:

prime_interval.py

```
print("Enter Starting value :",end="")
start = int(input())
print("Enter Ending value :",end="")
end = int(input())
for num in range(start,end+1):
    if num>1:
        for i in range(2,int(num**0.5)+1):
            if (num%i)==0:
                break
        else:
            print(num)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter Starting value :
2
Enter Ending value :
11
2
3
5
7
11

S.No: 6	Exp. Name: Write a python script to find the largest number among three numbers and display them in ascending order using if-else construct.	Date: 2024-03-12
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Aim:

Write a python script to find the largest number among three numbers and display them in ascending order using if-else construct.

Source Code:

```
large_ascending.py

num1 = int(input("To find largest among three numbers and display in ascending order\nEnter first number :"))
num2 = int(input("Enter Second number :"))
num3 = int(input("Enter Third number :"))
if (num1 > num2) and (num1 > num3):
    largest = num1
elif (num2 > num1) and (num2 > num3):
    largest = num2
else:
    largest = num3
print("Largest number is :",largest)
if num1<num2 and num1<num3:
    if num2<num3:
        x,y,z=num1,num2,num3
    else:
        x,y,z=num1,num3,num2
elif num2<num1 and num2<num3:
    if num1<num3:
        x,y,z=num2,num1,num3
    else:
        x,y,z=num2,num3,num1
else:
    if num1<num2:
        x,y,z=num3,num1,num2
    else:
        x,y,z=num3,num2,num1
print('Ascending Order is : [{0}, {1}, {2}]'.format(x,y,z))
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
To find largest among three numbers and display in ascending order
Enter first number :
10
Enter Second number :
20
Enter Third number :
30

Largest number is : 30
Ascending Order is : [10, 20, 30]

Test Case - 2
User Output
To find largest among three numbers and display in ascending order
Enter first number :
12
Enter Second number :
25
Enter Third number :
98
Largest number is : 98
Ascending Order is : [12, 25, 98]

S.No: 8	Exp. Name: Write a python script to remove all the occurrences of a given character from a text file; copy the resultant text into another text file. Find the total occurrences of the eliminated characters and display the count along with the contents of the text file on to the console.	Date: 2024-05-16
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Aim:

Write a python script to remove all the occurrences of a given character from a text file; copy the resultant text into another text file. Find the total occurrences of the eliminated characters and display the count along with the contents of the text file on to the console.

Source Code:

occurrences.py

```
f1 = open("textfile.txt",'w')
f1.write("Write a python script to remove all the occurrences of a given character from a
text file; copy the resultant text into another text file. Find the total occurrences of the
eliminated characters and display the count along with the contents of the text file on to
the console.")
f1.close()
f2=open("textfile.txt",'r')
print("**** TEXT IN A FILE ****")
print(f2.read())
f2.seek(0)
f3=open("textfile2.txt",'w')
char=input("Enter a character to count its occurrence:")
count=0
rc=-1
while(rc):
    rc=f2.read(1)
    if rc==char:
        count+=1
    else:
        f3.write(rc)

f2.close()
f3.close()
print("Total count of "+ char +" is ",count)
f4=open("textfile2.txt",'r')
print("**** Text after eliminating "+char+" ****")
print(f4.read())
f4.close()
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
**** TEXT IN A FILE ****

Write a python script to remove all the occurrences of a given character from a text file; copy the resultant text into another text file. Find the total occurrences of the eliminated characters and display the count along with the contents of the text file on to the console.
Enter a character to count its occurrence:
e
Total count of e is 31
**** Text after eliminating e ****
Write a python script to remove all the occurrences of a given character from a text file; copy the resultant text into another text file. Find the total occurrences of the eliminated characters and display the count along with the contents of the text file on to the console.

Test Case - 2
User Output
**** TEXT IN A FILE ****
Write a python script to remove all the occurrences of a given character from a text file; copy the resultant text into another text file. Find the total occurrences of the eliminated characters and display the count along with the contents of the text file on to the console.
Enter a character to count its occurrence:
i
Total count of i is 12
**** Text after eliminating i ****
Write a python script to remove all the occurrences of a given character from a text file; copy the resultant text into another text file. Find the total occurrences of the eliminated characters and display the count along with the contents of the text file on to the console.

S.No: 9	Exp. Name: Write a python script to display Fibonacci sequence of numbers using while loop constructs.	Date: 2024-04-03
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Aim:

Write a python script to display Fibonacci sequence of numbers using while loop constructs.

Source Code:

fibonacci_while.py

```
print("Fibonacci Sequence")
n=int(input("Enter length of series :"))
a = 0
b = 1
sum = a+b
count = 1
print("Fibonacci Sequence using while loop")
while (count<=n):
    count+=1
    print(a, end="\n")
    a = b
    b = sum
    sum = a + b
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Fibonacci Sequence
Enter length of series :
5
Fibonacci Sequence using while loop
0
1
1
2
3

S.No: 10	Exp. Name: Write a python script to display Fibonacci sequence of numbers using for loop constructs.	Date: 2024-05-15
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Aim:

Write a python script to display Fibonacci sequence of numbers using for loop constructs.

Source Code:

fibonacci_for.py

```
print("Fibonacci Sequence using for loop")
n=int(input("Enter length of series :"))
a=0
b=1
if n<=0:
    print("The Output of your input is ",a)
else:
    print(a)
    print(b,end="\n")
    for i in range(2,n):
        c=a+b
        print(c,end="\n")
        a=b
        b=c
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Fibonacci Sequence using for loop
Enter length of series :
5
0
1
1
2
3

S.No: 11	Exp. Name: Write a python script to display Fibonacci sequence of numbers using do-while loop constructs.	Date: 2024-04-03
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Aim:

Write a python script to display Fibonacci sequence of numbers using do-while loop constructs.

Source Code:

Fibonacci.py

```
print("Fibonacci Sequence emulating do-while")
n = int(input("Enter length of series :"))
a = 0
b = 1
if(n==1):
    print(a)
else:
    print(a)
    print(b)
    for I in range(2,n):
        c = a+b
        a = b
        b = c
        print(c)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Fibonacci Sequence emulating do-while
Enter length of series :
5
0
1
1
2
3

Test Case - 2
User Output
Fibonacci Sequence emulating do-while
Enter length of series :
7
0
1
1
2
3

5
8

S.No: 12	Exp. Name: Write a python script to demonstrate string methods. 01.Capitaize the first character 02.Casefold the characters 03.Center the string 04.count the character 'a' in string 05.Encode to a binary 06.Check where the string ends with * 07.Check the position of the substring 'find' in the given input. 08.Starting index of 'c' character in a string 09.Check the string is numeric 10.Check the string is alphabet 11.Check the string is lower 12.split the string	Date: 2024-05-16
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Aim:

Write a python script to demonstrate string methods.

- 01.Capitaize the first character
- 02.Casefold the characters
- 03.Center the string
- 04.count the character 'a' in string
- 05.Encode to a binary
- 06.Check where the string ends with *
- 07.Check the position of the substring 'find' in the given input.
- 08.Starting index of 'c' character in a string
- 09.Check the string is numeric
- 10.Check the string is alphabet
- 11.Check the string is lower
- 12.split the string

Source Code:

string_methods.py

```
a=input("Enter String: ")
print("python script to demonstrate string methods")
print("To Capitaize first character ",a.capitalize())
print("To casefold the characters",a.casefold())
print("To center the string",a.center(75,""))
print("To count the character 'a' in string",a.count('a'))
print("To encode to a binary",a.encode())
print("To check where the string ends with *",a.endswith("*"))
print("To find the substring starting position",a.find("t",-1))
print("To get the starting index of 'c' character in a string",a.index('c'))
print("To check the string is numeric",a.isalnum())
print("To check the string is alphabet",a.isalpha())
print("To check the string is lower",a.islower())
print("To split the string",a.split())
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter String:
codetantra

python script to demonstrate string methods
To Capitaize first character Codetantra
To casefold the characters codetantra
To center the string *****codetantra*****
To count the character 'a' in string 2
To encode to a binary b'codetantra'
To check where the string ends with * False
To find the substring starting position -1
To get the starting index of 'c' character in a string 0
To check the string is numeric True
To check the string is alphabet True
To check the string is lower True
To split the string ['codetantra']

S.No: 13	Exp. Name: Write a python script to create a list and add n number of user-defined values to the list and display the same on to the console screen.	Date: 2024-05-16
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Aim:

Write a python script to create a list and add n number of user-defined values to the list and display the same on to the console screen.

Source Code:

list_creation.py

```
list=[]
n=int(input("Enter the size of list :"))
for i in range(n):
    ele=int(input("Enter the {} element :".format(i)))
    list.append(ele)
print("The elements in the list are :")
for i in list:
    print(i,end=' ')
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter the size of list :
5
Enter the 0 element :
1
Enter the 1 element :
5
Enter the 2 element :
3
Enter the 3 element :
6
Enter the 4 element :
5
The elements in the list are :
1 5 3 6 5

S.No: 14	Exp. Name: Write a Python program to perform addition of two matrices	Date: 2024-05-16
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Aim:

Write a **Python** program to find addition of two matrices.

Sample Input and Output-1:

```
Number of rows for matrix - A, m = 2
Number of columns for matrix - A, n = 3
Number of rows for matrix - B, p = 2
Number of columns for matrix - B, q = 3
Enter values for matrix - A
Entry in row: 1 column: 1
Entry in row: 1 column: 2
Entry in row: 1 column: 3
Entry in row: 2 column: 1
Entry in row: 2 column: 2
Entry in row: 2 column: 3
Enter values for matrix - B
Entry in row: 1 column: 1
Entry in row: 1 column: 2
Entry in row: 1 column: 3
Entry in row: 2 column: 1
Entry in row: 2 column: 2
Entry in row: 2 column: 3
Matrix a = [[11, 22, 33], [44, 55, 66]]
Matrix b = [[1, 2, 3], [4, 5, 6]]
Addition of two matrices = [[12, 24, 36], [48, 60, 72]]
```

Sample Input and Output-2:

```
Number of rows for matrix - A, m = 2
Number of columns for matrix - A, n = 2
Number of rows for matrix - B, p = 2
Number of columns for matrix - B, q = 3
Addition is not possible
```

Source Code:

Lab11b.py

```

m = int(input('Number of rows for matrix - A, m = '))
n = int(input('Number of columns for matrix - A, n = '))
p = int(input('Number of rows for matrix - B, p = '))
q = int(input('Number of columns for matrix - B, q = '))
A=[]
B=[]
if(m==p and n==q):
    print("Enter values for matrix - A")
    for i in range(1,m+1):
        a=[]
        for j in range(1,n+1):
            print("Entry in row: {} column: {}".format(i,j))
            a.append(int(input()))
        A.append(a)
    print("Enter values for matrix - B")
    for i in range(1,p+1):
        b=[]
        for j in range(1,q+1):
            print("Entry in row: {} column: {}".format(i,j))
            b.append(int(input()))
        B.append(b)
    print("Matrix a =",A)
    print("Matrix b =",B)
    sum=A.copy()
    for i in range(m):
        for j in range(n):
            sum[i][j]=A[i][j]+B[i][j]
    print("Addition of two matrices =",sum)
else:
    print("Addition is not possible")

```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Number of rows for matrix - A, m =
2
Number of columns for matrix - A, n =
3
Number of rows for matrix - B, p =
2
Number of columns for matrix - B, q =
3
Enter values for matrix - A
Entry in row: 1 column: 1
11
Entry in row: 1 column: 2
22
Entry in row: 1 column: 3
33

44
Entry in row: 2 column: 2
55
Entry in row: 2 column: 3
66
Enter values for matrix - B
Entry in row: 1 column: 1
1
Entry in row: 1 column: 2
2
Entry in row: 1 column: 3
3
Entry in row: 2 column: 1
4
Entry in row: 2 column: 2
5
Entry in row: 2 column: 3
6
Matrix a = [[11, 22, 33], [44, 55, 66]]
Matrix b = [[1, 2, 3], [4, 5, 6]]
Addition of two matrices = [[12, 24, 36], [48, 60, 72]]

Test Case - 2
User Output
Number of rows for matrix - A, m =
2
Number of columns for matrix - A, n =
2
Number of rows for matrix - B, p =
2
Number of columns for matrix - B, q =
3
Addition is not possible

Test Case - 3
User Output
Number of rows for matrix - A, m =
2
Number of columns for matrix - A, n =
2
Number of rows for matrix - B, p =
2
Number of columns for matrix - B, q =
2
Enter values for matrix - A
Entry in row: 1 column: 1

Entry in row: 1 column: 2
2
Entry in row: 2 column: 1
3
Entry in row: 2 column: 2
4
Enter values for matrix - B
Entry in row: 1 column: 1
1
Entry in row: 1 column: 2
2
Entry in row: 2 column: 1
3
Entry in row: 2 column: 2
4
Matrix a = [[1, 2], [3, 4]]
Matrix b = [[1, 2], [3, 4]]
Addition of two matrices = [[2, 4], [6, 8]]

Test Case - 4
User Output
Number of rows for matrix - A, m =
3
Number of columns for matrix - A, n =
3
Number of rows for matrix - B, p =
3
Number of columns for matrix - B, q =
3
Enter values for matrix - A
Entry in row: 1 column: 1
1
Entry in row: 1 column: 2
2
Entry in row: 1 column: 3
3
Entry in row: 2 column: 1
4
Entry in row: 2 column: 2
5
Entry in row: 2 column: 3
6
Entry in row: 3 column: 1
7
Entry in row: 3 column: 2
8
Entry in row: 3 column: 3

Enter values for matrix - B
Entry in row: 1 column: 1
9
Entry in row: 1 column: 2
8
Entry in row: 1 column: 3
7
Entry in row: 2 column: 1
6
Entry in row: 2 column: 2
5
Entry in row: 2 column: 3
4
Entry in row: 3 column: 1
3
Entry in row: 3 column: 2
2
Entry in row: 3 column: 3
1
Matrix a = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]
Matrix b = [[9, 8, 7], [6, 5, 4], [3, 2, 1]]
Addition of two matrices = [[10, 10, 10], [10, 10, 10], [10, 10, 10]]

Aim:

Write a python program to perform Matrix Multiplication.

Source Code:

matrixmul.py

```
A=[]
print("Enter values for matrix - A")
m=int(input("Number of rows, m = "))
n=int(input("Number of columns, n = "))
for i in range(m):
    a=[]
    for j in range(n):
        print("Entry in row: {} column: {}".format(i+1,j+1))
        a.append(int(input()))
    A.append(a)
B=[]
print("Enter values for matrix - B")
p=int(input("Number of rows, m = "))
q=int(input("Number of columns, n = "))
for i in range(p):
    b=[]
    for j in range(q):
        print("Entry in row: {} column: {}".format(i+1,j+1))
        b.append(int(input()))
    B.append(b)
print("Matrix - A =",A)
print("Matrix - B =",B)
if(n==p):
    mul=[]
    for j in range(len(A)):
        m1=[]
        for j in range(len(B[0])):
            m1.append(0)
        mul.append(m1)
    for i in range(len(A)):
        m1=[]
        for j in range(len(B[0])):
            for k in range(len(B)):
                mul[i][j]+=A[i][k]*B[k][j]
    print("Matrix - A * Matrix- B =",mul)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter values for matrix - A
Number of rows, m =
3

Number of columns, n =
3
Entry in row: 1 column: 1
12
Entry in row: 1 column: 2
7
Entry in row: 1 column: 3
3
Entry in row: 2 column: 1
4
Entry in row: 2 column: 2
5
Entry in row: 2 column: 3
6
Entry in row: 3 column: 1
7
Entry in row: 3 column: 2
8
Entry in row: 3 column: 3
9
Enter values for matrix - B
Number of rows, m =
3
Number of columns, n =
4
Entry in row: 1 column: 1
5
Entry in row: 1 column: 2
8
Entry in row: 1 column: 3
1
Entry in row: 1 column: 4
2
Entry in row: 2 column: 1
6
Entry in row: 2 column: 2
7
Entry in row: 2 column: 3
3
Entry in row: 2 column: 4
0
Entry in row: 3 column: 1
4
Entry in row: 3 column: 2
5
Entry in row: 3 column: 3
9
Entry in row: 3 column: 4

Matrix - A = [[12, 7, 3], [4, 5, 6], [7, 8, 9]]
Matrix - B = [[5, 8, 1, 2], [6, 7, 3, 0], [4, 5, 9, 1]]
Matrix - A * Matrix- B = [[114, 160, 60, 27], [74, 97, 73, 14], [119, 157, 112, 23]]

S.No: 16	Exp. Name: Write a program to find a given element, if the element to be found and its next element are the same then return True as output, otherwise return False.	Date: 2024-05-15
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Aim:

Write a program to find the given element in a list. If the element to be found and its next element are the same, then return **True**, otherwise return **False**.

Sample Input and Output - 1:

```
list1: 32,36,36,5
num: 36
True
```

Sample Input and Output - 2:

```
list1: 33,34,35
num: 34
False
```

Source Code:

```
List15.py
a=[int(i) for i in input('data: ').split(',')]
print('list:',a)
b=int(input('num: '))
x = a.index(b)
if a[x] == a[x+1]:
    print('True')
else:
    print('False')
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
data:
10,20,30
list: [10, 20, 30]
num:
20
False

Test Case - 2
User Output

10,20,20,30
list: [10, 20, 20, 30]
num:
20
True

S.No: 17	Exp. Name: Write a python script to arrange the given list of elements in ascending or descending order.	Date: 2024-05-15
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Aim:

Write a python script to arrange the given list of elements in ascending or descending order.

Source Code:

order.py

```
b=[int(i) for i in input('Enter list of numbers: ').split(' ')]
b.sort()
print(b)
b.sort(reverse=True)
print(b)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter list of numbers:
2 5 8 96 3 1 4 7
[1, 2, 3, 4, 5, 7, 8, 96]
[96, 8, 7, 5, 4, 3, 2, 1]

Test Case - 2
User Output
Enter list of numbers:
25 63 47 85 41 69
[25, 41, 47, 63, 69, 85]
[85, 69, 63, 47, 41, 25]

S.No: 18	Exp. Name: Write a Python program to find gcd of two numbers	Date: 2024-05-15
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Aim:

Write a Python program to find the GCD of two numbers.

Source Code:

gcdOfTwoNumbers.py

```
a=int(input('Enter first number: '))
b=int(input('Enter second number: '))
min_num=min(a,b)
gcd=1
for i in range(1,min_num+1):
    if a%i==0 and b%i==0:
        gcd=i
print('The gcd of two numbers is:',gcd)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter first number:
10
Enter second number:
20
The gcd of two numbers is: 10

Test Case - 2
User Output
Enter first number:
78
Enter second number:
9
The gcd of two numbers is: 3

S.No: 19	Exp. Name: Write a python script to find GCD of two numbers using recursive	Date: 2024-05-15
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Aim:

Write a python script to find GCD of two numbers using recursive.

Source Code:

gcd.py

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

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter first number:
12
Enter second number:
6
GCD is: 6

S.No: 20	Exp. Name: Write a Python program to convert temperatures to and from Celsius, Fahrenheit.	Date: 2024-05-16
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Aim:

Write a Python program to convert temperatures to and from Celsius, Fahrenheit.

Source Code:

temperature.py

```
a = input('Enter the temperature in celsius or fahrenheit: ')
b = int(a[:-1])
c = a[-1]
if (c == "C" or c == "c"):
    result = int(round((9 * b) / 5 + 32))
    d = "Fahrenheit"
elif (c == "F" or c == "f"):
    result = int(round((b - 32) * 5 / 9))
    d = "Celsius"
else:
    print("Enter the proper convention")
    quit()
print("The temperature in",d,"is",result,"degrees")
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter the temperature in celsius or fahrenheit:
215c
The temperature in Fahrenheit is 419 degrees

Test Case - 2
User Output
Enter the temperature in celsius or fahrenheit:
105F
The temperature in Celsius is 41 degrees

