

S.No: 1	Exp. Name: <i>Write a python script to display a simple message.</i>	Date: 2024-03-04
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Aim:

Write a python script to display a simple message.

Source Code:

```
sample_messag.py
```

```
print("Welcome to Python Programming Lab")
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Welcome to Python Programming Lab

S.No: 3	Exp. Name: <i>Write a python script to calculate the factorial of a given number.</i>	Date: 2024-03-04
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Aim:

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

Source Code:

factorial.py

```
def factorial(n):
    if n < 0:
        return 0
    elif n == 0 or n == 1:
        return 1
    else:
        fact = 1
        while(n>1):
            fact *=n
            n -= 1
        return fact
num = int(input("Enter a number :"))
print("Factorial of",num,"is",factorial(num))
```

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: 2024-03-04
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Aim:

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

Source Code:

sumofindi.py

```
print("Sum of individual difits of a given number ")
num = int(input("Enter a number :"))
s = 0
num1 = num
while(num>1):
    d = num%10
    s = s +d
    num = int(num/10)
print("The sum of {} is : {}".format(num1,s))
```

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: <i>Write a python script to display the prime number series up to the given N Value</i>	Date: 2024-03-04
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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

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

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: <i>Write a python script to find the largest number among three numbers and display them in ascending order using if-else construct.</i>	Date: 2024-03-04
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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

```
print("To find largest among three numbers and display in ascending order")
num1 = int(input("Enter first number :"))
num2 = int(input("Enter Second number :"))
num3 = int(input("Enter Third number :"))
if num1 > num3:
    print("Largest number is :",num1)
elif num2 > num3:
    print("Largest number is :",num2)
else:
    print("Largest number is :",num3)
li = [num1,num2,num3]
li.sort()
print("Ascending Order is :",li)
```

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: 7	Exp. Name: Write a python script to create a simple text file, write the contents into the created file and display the same on to the console screen.	Date: 2024-03-04
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Aim:

Write a python script to create a simple text file, write the contents into the created file and display the same on to the console screen.

Source Code:

text_display.py

```
filename = input("Enter file name: ")
file1 = open(filename, 'r')
for line in file1:
    print(line)
file1.close()
file1 = open(filename,"a")
file1.write("Stay Home Stay Safe")
file1 = open(filename, 'r')
for line in file1:
    print(line)
file1.close()
```

MyFile.txt

Hello Every one!

MyFile2.txt

content of file after reading -

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter file name:
MyFile.txt
Hello Every one!
Hello Every one! Stay Home Stay Safe

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: 2024-03-04
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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 ****
Writ a python script to rmov all th occurncs of a givn charactr from a txt fil; copy th rsultant txt into anothr txt fil. Find th total occurncs of th liminatd charactrs and display th count along with th contnts of th txt fil on to th consol.

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 ****
Wrt a python scrpt to remove all the occurrences of a gven character from a text fle; copy the resultant text nto another text fle. Fnd the total occurrences of the elmnated characters and dsplay the count along wth the contents of the text fle on to the console.

S.No: 10	Exp. Name: <i>Write a python script to display Fibonacci sequence of numbers using for loop constructs.</i>	Date: 2024-03-04
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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")
num = int(input("Enter length of series :"))
first = 0
second = 1
print("{}\n{}".format(first,second))
for val in range(num-2):
    third = first + second
    print(third)
    first = second
    second = third
```

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: 2024-04-23
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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.Capitalize 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: 2024-04-23
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Aim:

Write a python script to demonstrate string methods.

- 01.Capitalize 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 Capitalize 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 Capitalize 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: 2024-04-23
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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: 2024-04-23
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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 = '))

# Write your code here...
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
Entry in row: 2 column: 1
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
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
9
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]]

S.No: 15	Exp. Name: Write a python program to perform Matrix Multiplication.	Date: 2024-04-23
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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
1

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: 2024-05-08
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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

```
data = input("data: ")
my_list = data.split(",")
size = len(my_list)
for i in range(size):
    my_list[i] = int(my_list[i])
print("list:", my_list)
find = int(input("num: "))
for i in range(0, len(my_list) - 1):
    if my_list[i] == find:
        if my_list[i + 1] == find:
            result = "True"
            break
    else:
        result = "False"
print(result)
```

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

data:

10,20,20,30

list: [10, 20, 20, 30]

num:

20

True

S.No: 17	Exp. Name: <i>Write a python script to arrange the given list of elements in ascending or descending order.</i>	Date: 2024-05-08
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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

```
num = list(map(int,input("Enter list of numbers: ").split()))
num.sort()
print (num)
num.sort(reverse=True)
print (num)
```

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: 2024-05-08
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Aim:

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

Source Code:

gcdOfTwoNumbers.py

```
import math
def gcd_two(a, b):
    print("The gcd of two numbers is:", math.gcd(a, b))
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
gcd_two(a, b)
```

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: 2024-05-08
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Aim:

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

Source Code:

gcd.py

```
def gcd(a, b):
    if(b==0):
        return a
    else:
        return gcd(b,a%b)
a=int(input("Enter first number:"))
b=int(input("Enter second number:"))
GCD=gcd(a,b)
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: 2024-05-08
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Aim:

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

Source Code:

temperature.py
<pre> 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") </pre>

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