TASK: 1

Python Program to count the number of characters in a given string.

CODE:

```
st=input("input string: ")
print("length of string is: ",len(st))
```

OUTPUT:

```
shubhamsharma@Shubhams-Air lab2 % python3 1.py
input string: Chapter 3 of Black Myth Wukong is the longest
length of string is:  45
shubhamsharma@Shubhams-Air lab2 %
```

TASK: 2

Python Program to count the number of vowels in a given string.

CODE:

```
from collections import Counter

string = str(input("input string: "))
count = Counter(string)

print("number of vowels: ", (count['a'] + count['e'] + count['i'] + count['o'] +
count['u']))
```

OUTPUT:

```
shubhamsharma@Shubhams-Air lab2 % python3 2.py
input string: why do the feathers of a bird lack diversity ? -_-
number of vowels:  12
```

TASK: 3

Given two numbers, write a Python code to find the Maximum of two numbers (taken from user).

Input: a = 2, b = 4

Output: 4

CODE:

```
a = int(input("number1: "))
b = int(input("number2: "))

if(a==b): print("error")
elif(a>b): print("max: ", a)
else: print("max: ", b)
```

OUTPUT:

```
shubhamsharma@Shubhams-Air lab2 % python3 3.py
number1: 2
number2: 4
max:  4
```

TASK: 4

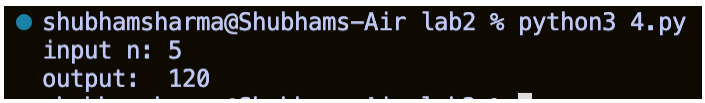
WAP to find factorial of a number using Iteration

CODE:

```
output = 1
for i in range(1, int(input("input n: "))+1):
    output *= i

print("output: ", output)
```

OUTPUT:



TASK: 5

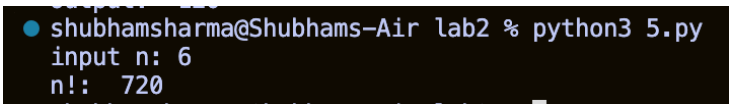
WAP to find factorial of a number using Recursion

CODE:

```
def factorial(n):
    if(n==1):
      return 1
    return factorial(n-1)*n

print("n!: ", factorial(int(input("input n: "))))
```

OUTPUT:



TASK: 6

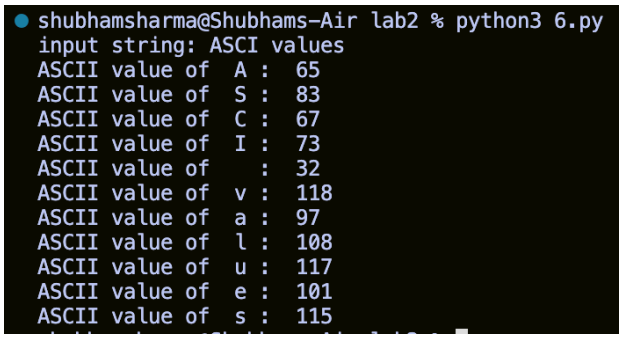
WAP to print the ASCI value of all the characters in a string

CODE:

```
from collections import Counter

string = str(input("input string: "))
for i in string:
    print("ASCII value of ", i , ": ", ord(i))
```

OUTPUT:



TASK: 8

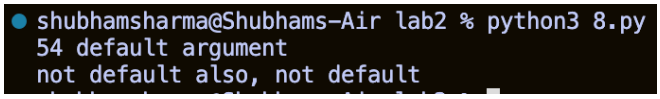
WAP to print the ASCI value of all the characters in a string

CODE:

```
def two_argument_function(a, b="default argument"):
    print(a, b)

two_argument_function(54)
two_argument_function("not default", "also, not default")
```

OUTPUT:



TASK: 7

WAP to find factorial of a number using Iteration

CODE:

```
def add(x, y):
    return x + y
def subtract(x, y):
    return x - y
def multiply(x, y):
    return x * y
def divide(x, y):
    if y == 0:
        return "Error!"
    return x / y

def calculator():
    while True:
        print("\nSelect operation:"); print("1. Add"); print("2. Subtract")
        print("3. Multiply"); print("4. Divide"); print("5. Exit")
        choice = input("Enter choice (1/2/3/4/5): ")

        if choice == '5':
            print("Exiting the calculator. Goodbye!")
            break
        if choice in ['1', '2', '3', '4']:
            num1 = float(input("Enter first number: "))
            num2 = float(input("Enter second number: "))
            if choice == '1':
                print(f"The result is: {add(num1, num2)}")
            elif choice == '2':
                print(f"The result is: {subtract(num1, num2)}")
            elif choice == '3':
                print(f"The result is: {multiply(num1, num2)}")
            elif choice == '4':
                print(f"The result is: {divide(num1, num2)}")
        else:
            print("Invalid input. Please choose a valid operation.")
calculator()
```

OUTPUT:

```
Select operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter choice (1/2/3/4/5): 4
Enter first number: 6
Enter second number: 0
The result is: Error!

Select operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter choice (1/2/3/4/5): 5
Exiting the calculator. Goodbye!
```

```
Select operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter choice (1/2/3/4/5): 3
Enter first number: 3
Enter second number: 8
The result is: 24.0
```

```
Select operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter choice (1/2/3/4/5): 2
Enter first number: 5
Enter second number: 8
The result is: -3.0
```

TASK: 9

WAP to find factorial of a number using Iteration

CODE:

```
def even_odd_segregation(sample):
    even=0; odd=0
    for i in range(sample+1):
        if(i%2 == 0):
            even += i
        else:
            odd += i
    print("even: ", even, "\n", "odd: ", odd)

even_odd_segregation(int(input("enter range: ")))
```

OUTPUT:

```
shubhamsharma@Shubhams-Air lab2 % python3 9.py
enter range: 8
even:  20
 odd:  16
```

TASK: 10

WAP to find factorial of a number using Recursion

CODE:

```
def table(sample):
    for i in range(1, 11):
        print(sample, "x", i, "  = ", sample*i)

table(int(input("enter n: ")))
```

OUTPUT:

```
shubhamsharma@Shubhams-Air lab2 % python3 10.py
enter n: 19
19 x 1   =  19
19 x 2   =  38
19 x 3   =  57
19 x 4   =  76
19 x 5   =  95
19 x 6   =  114
19 x 7   =  133
19 x 8   =  152
19 x 9   =  171
19 x 10   =  190
```

TASK: 11

WAP to print the ASCI value of all the characters in a string

CODE:

```
def is_palindrome(number):
    original_str = str(number)
    reversed_str = original_str[::-1]
    return original_str == reversed_str

num = int(input("Enter an integer: "))

if is_palindrome(num):
    print(f"{num} is a palindrome.")
else:
    print(f"{num} is not a palindrome.")
```

OUTPUT:

```
shubhamsharma@Shubhams-Air lab2 % python3 11.py
Enter an integer: 1234567654321
1234567654321 is a palindrome.
```