1.

Write a python program to get the name of the user and message and display it using functions.

**Function specifications:**

def greet(argument1,argument2 = “Welcome to Python Programming”)

**Input Format:**

Input consists of an string input.

**Output Format:**

Display the statements along with user input.
Refer to the sample input and output for formatting specifications.
[All text in bold corresponds to input and the rest corresponds to output.]

**Sample input and Output 1:**
Menu
1. Name and Message
2. Name
**1**
Enter the name
**Jack**
Enter the message
**How are you**
Hello Jack, How are you

**Sample input and Output 2:**
Menu
1. Name and Message
2. Name
**2**
Enter the name
**Jim**

Program:

```
print("Menu")

def greet(argument1,argument2="Welcome to Python Programming"):

   return "Hello  "+argument1+" , "+argument2

print("1. Name and Message")
```

```
print("2. Name")
ch=int(input())
if ch==1:
   print("Enter the name")
   a=input()
   print("Enter the message")
   b=input()
   print(greet(a,b))
else:
   print("Enter the name")
   c=input()
   print(greet(c))
```

program: Write a program to multiple two values using default arguments.

Suppose the 2 input values are a and b.

Make 3 function calls as follows:
1) multiply(a)
2) multiply(a,b)
3) multiply(a,b=9)

**Functional Specifications:**
def multiply(argument1,argument2=10):

**Input Format:**

Input consists of 2 integers.

**Output Format:**
Output prints the product of the given input.

**Sample Input and Output:**

**5**
**3**
The result is 50
The result is 15
The result is 45

Program:

```
def  multiply(argument1,argument2=10):
   return argument1*argument2
a=int(input())
b=int(input())
print("The result is",multiply(a))
print("The result is",multiply(a,b))
print("The result is",multiply(a,9))
```

**program3:**

Write a program to find leap year using default arguments.

**Functional Specifications:**
*def daysInYear(argument1,argument2=False)*

**Input Format:**

Input consists of a year.

**Output Format:**
Output prints the whether the given year is leap year or not.

**Sample Input  and Output:**
**2000**

2000 is a leap year

Program:

```
def leapyear(year):
   if year%4==0 and year%100!=0 or year%400==0:
      print(year,"is a leap year")
   else:
      print(year,"is not a leap year")
a=int(input())
leapyear(a)
```

**4.program:**

**C and JAVA Function Specifications:**
Use the function name and the argument as:
**int findType(n):**
The Function should return 1 if the given integer is a *deficient* number, return 0 if it is a *perfect* number and return -1 if it is a *abundant* number.

**Python Function Specifications:**
Use the function name and the argument as:
**def findType(n):**
The Function should return 1 if the given integer is a *deficient* number, return 0 if it is a *perfect* number and return -1 if it is a *abundant* number.

**Input Format:**
The input consists of an integer that corresponds to the given number.

**Output format:**
Output should display if the given number is a *perfect, abundant or deficient* number.
Refer sample input and output for formatting specifications.

**Sample Input 1:**
4
**Sample Output 1:**
4 is a deficient number

**Sample Input 2:**
6
**Sample Output 2:**
6 is a perfect number

**Sample Input 3:**
12
**Sample Output 3:**
12 is an abundant number

Ans:

```
def findType(n):
    b=n
    sum=0
    for i in range(1,n):
        if n%i==0:
            sum=sum+i
    if sum==b:
```

```
        return 0
    elif sum<b:
        return 1
    else:
        return -1
n=int(input())
res=findType(n)
if res==0:
    print(n,"is a perfect number")
elif res==1:
    print(n,"is a deficient number")
else:
    print(n,"is an abundant number")
```

5.

Write a python program to get the values from user and perform arithmetic operations on it.

Suppose the 3 inputs are x,y,z.

Make 3 function calls as follows:
**1) keyword(arg1 = x,arg2 = y,arg3 = z)**
**2) keyword(arg2 = x,arg3 = y,arg1 = z)**
**3) keyword(arg3 = x,arg1 = y,arg2 = z)**

**Function specifications:**

def keyword(arg1,arg2,arg3)
*Inside the function subtract arg2 from arg1 and add arg3.*

**Input Format:**

Input consists of a 3 integer inputs.

**Output Format:**

Refer sample output for details.

**Sample Input 1:**

12
15
13

**Sample Output 1:**

10
16
14

Ans:

```
def keyword(arg1,arg2,arg3):
    d=arg1-arg2
    result=d+arg3
    return result
a=int(input())
b=int(input())
c=int(input())
print(keyword(a,b,c))
print(keyword(c,a,b))
print(keyword(b,c,a))
```

programs:

1.Count of a number

```
a=int(input())
count=0
while a>0:
    count=count+1
    a=a//10
print("the count is",count)
```

2.The reverse of a number

```
a=int(input())
dig=0
rev=0
while a>0:
```

```
    dig=a%10
    rev=rev*10+dig
    a=a//10
print("the reverse of a number is ",rev)
```

3.Palindrome number

```
a=int(input())
dig=0
rev=0
b=a
while a>0:
    dig=a%10
    rev=rev*10+dig
    a=a//10
if b==rev:
    print("palindrome")
else:
    print("not an palindrome")
```

4.revrse a string

```
a=input()
b=a[::-1]
print(b)
```

5.reverse of a string and palindrome

```
a=input()
b=a
c=a[::-1]
```

```
if b==c:
    print("palindrome")
else:
    print("not a palindrome")
```

6.another method for string reverse

```
a=input()
b=""
for i in range(len(a)):
    b=a[i]+b
print(b)
```

7 Armstrong of a number

[6:31 pm, 03/09/2024] Maggi: a=int(input())

```
c=len(str(a))
b=a
dig=0
arm=0
while a>0:
    dig=a%10
    arm=arm+(dig**c)
    a=a//10
if arm==b:
    print("armstrong")
else:
    print("not an armstrong")
```

```
a=int(input())
c=len(str(a))
b=a
dig=0
```

```
arm=0
while a>0:
    dig=a%10
    arm=arm+(dig**c)
    a=a//10
print(arm)
```

8.multiplication in python

```
a=int(input())
for i in range(1,10):
    print(a," x ",i," = ",a*i)
```

9.leap year or not

```
a=int(input())
if a%4==0 and a%100!=0 or a%400==0:
    print("It's a leap year ")
else:
    print("It's not leap year")
```

10.ascii value of characters

```
a=input()
for i in a:
    print(a," the ascii value is ",ord(i))
```

11. Values to ASCII

```
a=int(input())
```

```
b=chr(a)
print(b)
```

12.SWAP THE NUMBER USING 3RD VARIABLE

```
a=int(input())
b=int(input())
temp=a
a=b
b=temp
print(a)
print(b)
```

13.SWAP THE NUMBER WITHOUT USING THIRD VARIABLE

```
a=int(input())
b=int(input())
a=a+b
b=a-b
a=a-b
print(a)
print(b)
```

14.check whether it is vowel or not

```
a=input()
if a in('a','e','i','o','u','A','E','O','I','U'):
   print("it's a vowel")
else:
   print("it's not an vowel")
```

15 VOWEL COUNT

```
a=input()
vowel_count=0
vowels=['a','e','i','o','u','A','E','I','O','U']
for i in a:
    if i in vowels:
        vowel_count+=1
print(vowel_count)
```

16.quadratic number

```
import math
a=float(input())
b=float(input())
c=float(input())
d=(b**b)-(4*a*c)
e=(-b+math.sqrt(d))/(2*a)
f=(-b-math.sqrt(d))/(2*a)
print(e)
print(f)
```

17.factorial program

```
a=int(input())
fact=1
for i in range(a,0,-1):
    fact=fact*i
print(fact)
```

Fact using recursion function:

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

18.SUM OF N NATURAL NUMBERS

```
a=int(input())
sum=0
for i in range(1,a+1):
    sum=sum+i
print(sum)
```

19. FIBANOCCI SERIES

0,1,1,2,3,5,8...

```
n=int(input())
a,b=0,1
for i in range(n):
    print(a,end=" ")
```

```
    a,b=b,a+b
```

FIBANOCCI using recursive function:

```
def fibanocci(n):
    if (n<0):
        print("doesn't exist")
    elif (n==0):
        return 0
    elif n==1 or n==2:
        return 1
    else:
        return fibanocci(n-1)+fibanocci(n-2)
print(fibanocci(9))
```

20.ANAGRAM

An anagram is a word or phrase that's formed by rearranging the letters of another word or phrase.

```
a=input()
b=input()
if sorted(a)==sorted(b):
    print("anagram")
else:
    print("not an anagram")
```

21.SUBSTRING COUNT

```
enter a stringmeghana
ebter a sub stringa
the count is 2
```

```
str=input("enter a string")
substring=input("eNTer a sub string")
count=str.count(substring)
print("the count is",count)
```

22.

STRONG NUMBER

A strong number is a number where the sum of the factorials of each digit is equal to the original number. For example, 145 is a strong number because 1! + 4! + 5! = 1 + 24 + 120 = 145.

```
a=int(input())
sum=0
dig=0
b=a
while a>0:
    dig=a%10
    i=1
    f=1
    while(i<=dig):
        f=f*i
        i=i+1
    sum=sum+f
    a=a//10
if b==sum:
    print("strong ")
else:
    print("not strong")
```