In [ ]:
```
num1=int(input("enter Val1:"))
num2=int(input("Enter Val2:"))
print("="*50)

print("Options")
print("1.Addition\n 2.Substraction\n 3.Multiplication\n 4.Division")


print("="*50)

option=int(input("enter Choice:"))

if option==1:
    res=num1+num2
elif option==2:
    res=num1-num2
elif option==3:
    res=num1*num2
elif option==4:
    if num2!=0:
        res=num1/num2
    else:
        res="Infinite"
        print("Denominator should not be zero")
else:
    print("Invalid Option")

print("result is {}".format(res))
```

executed in 13.0s, finished 15:57:34 2024-08-08

Loops:

- Loops are used to repeat a block of code until a certain condition is met or condition becomes false.
- Here we have two types of loops:

    1. For loop
    2. While loop

1. For Loop: =====> Used to itereate over a sequence of values.

```
syntax:

    for var_name in range/DS:
            // statements
```

In [ ]:
```
for i in range(1,31):
    print(i,end=",")
```

executed in 7ms, finished 15:41:40 2024-08-12

In [ ]:
```
for i in range(1,31,2):
    print(i,end=",")
```
executed in 8ms, finished 15:43:07 2024-08-12

WAP to print all the even values in the given range

In [ ]:
```
start=int(input("Enter start:"))
end=int(input("Enter End:"))

for i in range(start,end):
    if i*i*i in range(start,end):
        print(i*i*i)
```
executed in 1.47s, finished 15:54:03 2024-08-12

WAP to print all the vowels and count of vowels in the given string.

In [ ]:
```
string=input("Enter String Here:")
count=0   # initialized a new variable for counting the vowels
for i in string:
    if i in ("aeiouAEIOU"):  # For checking i is vowel or not
        print(i)  # if i is vowel it will print i value
        count+=1   # if i is vowel it will increment the count value

print("Count:",count)
```
executed in 7.77s, finished 16:04:54 2024-08-12

In [ ]:
```
l1=[1,2,3,4,5,6,7,8,9,10]

# for i in l1:
#     print(i,end=" ")

for j in range(len(l1)):
    print(j,end=" ")
```
executed in 9ms, finished 16:08:15 2024-08-12

2.While Loop

```
Syntax:
while condition:
        //statements
```

In [4]:
```
i=1
while(i<10):
    print(i)
    i+=1
```

executed in 7ms, finished 16:13:46 2024-08-12

```
1
2
3
4
5
6
7
8
9
```

In [9]:
```
name=""

while name == "":
    name=input("Enter name:")

print(f"Hello {name}")
```

executed in 22.3s, finished 16:18:23 2024-08-12

```
Enter name:
Enter name:fgh
Hello fgh
```

WAP to print the sum of all numbers in the given range.

In [10]:
```
start=int(input("Enter start:"))
end=int(input("Enter end:"))

add=0

for i in range(start,end+1):
    add+=i

print(add)
```

executed in 2.33s, finished 16:27:04 2024-08-12

```
Enter start:1
Enter end:10
55
```

In [11]:
```
start=int(input("Enter start:"))
end=int(input("Enter end:"))

sum=0

while(start<=end):
    sum+=start
    start+=1

print(sum)
```

executed in 1.59s, finished 16:33:36 2024-08-12

```
Enter start:1
Enter end:10
55
```

WAP to find the factorial of a number.

In [14]:
```
num=int(input("Enter num:"))
i=1
fact=1

while(num>=i):
    fact=fact*num
    num-=1

print(fact)
```

executed in 2.43s, finished 16:46:05 2024-08-12

```
Enter num:7
5040
```

WAP to add all the digits in a number.

In [10]:
```
num=int(input("Enter the number:"))

add=0

while(num!=0):
    rem=num%10
    add+=rem
    num=num//10

print(add)
```

executed in 11.6s, finished 08:08:23 2024-08-13

```
Enter the number:078
15
```

In [25]:
```
num=int(input("Enter number:"))
num2=str(num)

digit_sum=0

for i in num2:
    digit_sum+=int(i)

print(digit_sum)
```

executed in 5.36s, finished 08:24:06 2024-08-13

```
Enter number:562
13
```

WAP to reverse the given number.

In [41]:
```
num=input("Enter number:")
num2=str(num)

rev=""

for i in range(len(num2),0,-1):
    rev+=num2[i-1]

if num2==rev:
    print("Palindrome")
else:
    print("Not palindrome")
```

executed in 945ms, finished 08:50:12 2024-08-13

```
Enter number:fghj
Not palindrome
```

14.Write a Program to find sum of all numbers in the given range.
15.Write a Program to find sum of all even numbers in the given range.
16.Write a program to find the sum of all digits in the given number.
17.Write a program to print the reverse of a given number.
18.write a program to check whether the given number is palindrome or not.
19.write a program to find the factorial of a given number.
20.write a program to find the fibonacci series upto given nth number.
21.Write a program to find the given number is prime or not.
22.Write a program to find the all the prime numbers in the given range.
23.Write a program to find the given number is perfect or not.

In [ ]: