CONTROL STRUCTURES

Fibonacci Series

```
m=int(input('Enter the number'))
f1,f2=0,1
i=1
while(i<=m):
    print(f1)
    f3=f1+f2
    f1=f2
    f2=f3
    i+=1
```

Factorial

```
n=int(input())
i=1
fact=1
while(i<=n):
    fact*=i
    i+=1
    if fact==n:
        print('yes')
        break
    if fact>n:
        print('no')
        break
```

Sum of Digits

```
n=int(input())
sum=0
while(n>0):
    a=n%10
    sum=sum+a
    n=n//10
print(sum)
```

Friendly Pair

Friendly Pair are two or more numbers with a common abundance

For example,**6** and **28** are **Friendly Pair**.

(Sum of divisors of 6)/6 = (Sum of divisors of 28)/28.

```
n1=int(input())
n2=int(input())
sum1=0
sum2=0
for i in range(1,n1):
   if(n1%i==0):
       sum1+=i
for j in range(1,n2):
   if(n2%j==0):
       sum2+=j
if((sum1)/n1==(sum2)/n2):
    print('Friendly Pair')
else:
    print("Not Friendly Pair")
```

Harshard Number

Harshad Number is an integer that is divisible by the sum of its digits.

```
n=int(input())
i=0
sum=0
while(i<n):
    r=n%10
    sum=sum+r
    n=n//10
if(n>sum and n%sum==0):
    print('Harshad Number')
else:
    print('Not Harshad Number')
```

LCM of two numbers

```
a=int(input())
b=int(input())
if a>b:
    g=a
else:
    g=b
while 1 :
    if g%a==0 and g%b==0:
        lcm=g
        break
    g+=1
print('LCM of',a,'and',b,'is',lcm)
```

Palindrome of a number

```
n=int(input())
b=n
rev=0
while(n>0):
    a=n%10
    rev=rev*10+a
    n=n//10
if(b==rev):
    print('Palindrome')
else:
    print('Not a Palindrome')
```

Perfect Number

```
n=int(input())
i=1
sum=0
while(i<n):
    if(n%i==0):
        sum=sum+i
    i+=1
if(sum==n):
    print('perfect number')
else:
    print('not a perfect number')
```

Prime Number

```
n=int(input())
```

```
if n>1:
    for i in range(2,(n//2)+1):
        if(n%i==0):
            print('Not a Prime')
            break
    else:
        print('Prime Number')
else:
    print('Not Prime Number')
```

Prime Numbers in a Range

```
a=int(input())
b=int(input())
for i in range(a,b+1):
    if(i>1):
        for j in range(2,i):
            if(i%j==0):
                break
        else:
            print(i)
```

Reverse a Number

```
n=int(input())
rev=0
while(n>0):
    a=n%10
    rev=rev*10+a
    n=n//10
```

```
print(rev)
```

Strong Number

A strong number is a number in which the sum of the factorial of the digits is equal to the number itself.

```
n=int(input())
b=n
sum=0
while(n>0):
    rem=n%10
    fact=1
    for i in range(1,rem+1):
        fact*=i
    sum=sum+fact
    n=n//10
if(b==sum):
    print('Strong Number')
else:
    print('Not a Strong Number')
```

Sum of natural Numbers

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

Sum of Numbers in a range

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

```
b=int(input())
sum=0
if a<b:
    for i in range(a,b+1):
        sum=sum+i
    print(sum)
else:
    print('Invalid Input')
```