-: Basic Programming :-

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Brick 1) How to swap two variables with the help of third variable.

Program: -

```
a=int(input())
b=int(input())
print(f"Before swaping a={a} and b={b}")
c=a                                  #It can make in one line also (a,b=b,a)
a=b
b=c
print(f"After swaping a={a} and b={b}")
```

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Brick 2) How to swap two variables without third variable.

Program: -

```
a=int(input())
b=int(input())
print(f"Before swaping a={a} and b={b}")
a=a+b
b=a-b
a=a-b
print(f"After swaping a={a} and b={b}")
```

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Brick 3) How to swap three variables without help of fourth variable.

Program: -

```
    a=int(input())
    b=int(input())
    c=int(input())
    print(f"Before swaping a={a} and b={b} and c={c}")
    a=a+b+c
    b=a-b-c
    c=a-b-c
    a=a-b-c
    print(f"After swaping a={a} and b={b} and c={c}")
```

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Brick 4) WAP to find the sum of digit of the given number.

Program: -

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

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Brick 5) WAP to find whether the given number is palindrome or not.

Program: -

```
    x=int(input())
    n=x
    sum=0
    while x>0:
        sum=(sum*10)+x%10
        x=x//10
    if sum==n:
        print("Yes")
    else:
        print("No")
```

brick 6) Find the factorial of a number.

Program:-

```
    n=int(input())
    fact=1
    while n>0:
        fact=fact*n
        n=n-1
    print(fact)
```

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Brick 7) Find the sum of an array element.

Program:-

```
    l=[10,20,30,40,50]
    sum=0
    for i in l:
        sum+=i
    print(sum)
```

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Brick 8) Search a number given by user using Linear search.

Program:-

```
l=[10,20,30,40,50]
x=int(input())
flag=0
for i in l:
    print("YES")
    flag=1
    break
if flag==0:
    print("NO")
```

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Brick 9) Check whether a number is Perfect number or not.

Program:-

```
n=int(input())
i=1
while i<=n/2:
    if n%i==0:
        sum+=i
    i=i+1
if sum==n:
    print("Yes")
else:
    print("No")
```

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Brick 10) Check whether number is prime or not.

Program:-

```
n=int(input())
if n<=1:
    print("Not Prime")
else:
    flag=0
    for i in range(2,n//2+1):
        if n%i==0:
            print("Not Prime")
            flag=1
            break
    if flag==0:
        print("Prime")
```

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Brick 11) Find the sum of all prime numbers b/w given two numbers.

Program:-

```
def check_prime(n):
    if n<=1:
        return False
    else:
        for i in range(2,n//2+1):
            if n%i==0:
                return False
        return True


a=int(input())
```

```
b=int(input())
sum=0
for x in range(a,b+1):
    if check_prime(x)==True:
        sum+=x
print(sum)
```

brick 12) Find the nth prime number.

Program:-

```
import sys
max=sys.maxsize
def check_prime(n):
    for i in range(2,n//2+1):
        if n%i==0:
            return False
    return True

n=int(input())
if n<=1:
    print("Prime no not found")
else:
    count=0
    for x in range(2,max):
        if check_prime(x)==True:
            count+=1
        if count==n:
```

```
                        print(x)

                        break
```

Brick 13)Print the Fibonacci Series till the nth number.

Program:-

```
    n=int(input())

    f1=0

    f2=1

    print(f1,f2,end=" ")

    for i in range(n-2):

        f3=f1+f2

        f1=f2

        f2=f3

        print(f3,end=" ")
```

Brick 14) Check whether given number is Armstrong number or not.

Program:-

```
    a=int(input())

    n=a

    sum=0

    while a>0:

        b=a%10

        sum+=b**3

        a=a//10

    If sum==n:

        print("Yes")

    else:
        print("No")
```

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Brick 15) Check whether a number is Strong number or not.

Program:-

```
    from math import factorial
    n=int(input())
    a=n
    sum=0
    while n>0:
        b=n%10
        sum=sum+factorial(b)
        n=n//10
    if sum==a:
        print("YES")
    else:
        print("NO")
```

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Brick 16) Check whether given year is leap year or not.

Program:-

```
    year=int(input())
    if year%400==0:
        print("Leap year")
    elif year%4==0 and year%100!=0:
        print("Leap year")
    else:
        print("Not a leap year")
```

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Brick 17) Check whether a number is Automorphic number or not.

Program:-

```
    n=int(input())
    sq=n**2
    flag=0
    while n>0:
        if n%10!=sq%10:
            print("Not Automorphic")
            flag=1
            break
        n=n//10
        sq=sq//10
    if flag==0:
        print("Automorphic")
```

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Brick 18) Check whether a number is spy number or not.

Program:-

```
    a=int(input())
    sum=0
    prod=1
    while a>0:
        b=a%10
        sum=sum+b
        prod=prod*b
        a=a//10
    if sum==prod:
        print("Yes")
    else:
        print("No")
```

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Brick 19) Check whether given number is sunny number or not.

Program:-

```
import math
n=int(input())
n=n+1
sqt=math.sqrt(n)
if sqt-math.floor(sqt)==0:
    print("Sunny no.")
else:
    print("Not a sunny number")
```

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Brick 20) Check Whether given number is Pronic number or not.

Program:-

```
from math import sqrt
n=int(input())
flag=0
for i in range(0,int(sqrt(n))+1):
    if i*(i+1)==n:
        print("Pronic number")
        flag=1
        break
if flag==0:
    print("Not pronic")
```

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Brick 21) Check Whether given number is disarium number or not.

Program:-

```
n=a
count=0
while a>0:
    a=a//10
    count=count+1
a=n
sum=0
while a>0:
    b=a%10
    sum=sum+b**count
    a=a//10
    count=count-1
if sum==n:
    print("Disarium")
else:
    print("Not Disarium")
```

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Brick 22) check whether number is fascinating number is not.

Program:-

```
n=int(input())
n1=n*2
n2=n*3
l=[0,0,0,0,0,0,0,0,0,0]
while n>0:
    b=n%10
    l[b]=l[b]+1
    n=n//10
while n1>0:
    b=n1%10
    l[b]=l[b]+1
    n1=n1//10
while n2>0:
    b=n2%10
    l[b]=l[b]+1
    n2=n2//10
flag=0
for i in range(1,10):
    if l[i]!=1:
        print("Not Fascinating")
        flag=1
        break
if flag==0:
    print("Facsinating")
```

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Brick 23) Find the LCM and HCF of two given number.

Program:-

```
a=int(input())
b=int(input())
hcf=0
for i in range(1,min(a,b)+1):
    If a%i==0 and b%i==0:
        hcf=i
print(f"HCF is:{hcf}")
lcm=(a*b)//hcf
print(f"LCM is:{lcm}")
```

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