20JR1A05A5

① prime number:

```
  n= int (input())
if n>=2:
  f=0
  for i in range(2, int ( n**0.5)+1) :
       if n%i==0:
           f=1
  if f==0:
      print('%d is prime'% n)
  else:
      print ('%d is not prime'%n).
```

output:

```
29
29 is prime
```

② prime numbers range :

```
def primes(n):
    prm=[True]* (n+1)
    prm[0]= prm[1]= false.
    p=2.
    while p*p <=n:
        if prm[p]:
            for i in range(p*p, n+1 ,p) :
                prm[i]=False.
        p+=1
    return prim[n]

x= int (input( ))
count=0
number=2
while count<x:
     if primes(number):
          count+=1
          print((number),end=' ')
     number +=1
```

output: 5

```
2 3 5 7 11
```

20JR1A05A5

③ Armstrong or Not :

```
x=int(input())
length= len(str(x))
temp=x
sum=0
while x>0:
        sum=sum+·(x%10)**length
        a=x//10
if sum==temp:
        print(x,' is prime Armstrong number')
else: print(x,'is not armstrong number')
```

output: 153

153 is Armstrong number

④ Armstrong from n1 to n2:

```
def   arm(n):
        length=len(str(n))
        temp=n
        sum=0
        while n>0:
            sum=sum+ (n%10)**length
            n=n//10
        if sum==temp:
                print(n)

n1=int(input())
n2=int(input())
for i in range(n1,n2+1):
        arm(i)
```

output: 1
9

1 2 3 4 5 6 7 8 9

⑤ leap year or not

```
y= int(input())
if( y%4==0  and (y%100 !=0 or y%400==0)):
        print('leap year')
else:
        print('Non leap year').
```

output: 2024

leap year.

⑥ reverse of given number: (or) palindrome:

```
n= int(input())
temp=0 ; t1=n
while n>0:
        temp= temp*10 + n%10
        n=n//10
if t1==temp:
        print(' palindrome')
else:   print('not palindrome')
```

output:

```
121
palindrome
```

⑦
```
n=int(input())
temp=0
t1=n
while n>0:
        temp= temp*10 +n %10
        n=n//10
print('The reverse of given number is', temp).
```

output:

```
123
The reverse of given number is 321
```

⑧ Fibonacci:

```
'''
n=int( input())
n1=0
n2=0 '''
```

```
def fib(n):
    if n==0:
        return 0
    else if n==1 or n==2:
        return 1
    else:
        return fib(n-1)+fib(n-2)

x=int(input())
print( fib(x))
```

output:

```
6
5
```

9 Swapping of elements:

```
a=int(input())
b=int(input())
print(a,b)
#1
 a=a+b
 b=a-b
 a=a-b
 print (a,b)
```

```
output: 10
        20

        20  10
```

```
#2
 a=a*b
 b=a/b
 a=a/b
 print(a,b)
#3
 a=a^b
 b=a^b
 a=a^b
 print(a,b)
```

10 Decimal to binary:

```
n=int(input())
bin=' '
while n>0:
     bin = str(n%2) + bin
      n=n//2
print(bin).
```

```
output: 13
        1101
```

11 Binary to decimal:

```
binary = input()
expo = len(binary)-1
decimal=0
for i in binary:
        if i==1:
              decimal += int(i)*(2**expo)

        expo-=1
print(decimal)
```

```
output: 1111
        15
```

20JR1A05A5

12 binary to octal :

```
binary = input()
#check multiple of 3 or not ...
while len(binary)%3 != 0 :
        binary = '0'+binary
octal = ''
i=0
while i<len(binary):
        decimal = int( binary[i:i+3],2)
        octal = octal + str(decimal)
        i+=3
print(octal).
```

output:

```
101011
53
```