1. Convert Binary number to decimal

Ex: 1 0 0 1 0 =1 x 2 5 + 0 x 2 4 + 0 x 2 3 + 1 x 2 2 + 0 x 2 1

```
b_num = list(input("Input a binary number: "))
value = 0
for i in range(len(b_num)):
    digit = b_num.pop()
    if digit == '1':
        value = value + pow(2, i)
print("The decimal value of the number is", value)
```

Sample Output:

Input a binary number: 1000001

The decimal value of the number is 65

2. Generate first N number of Fibonacci

```
numbers. Take N value from user
nterms = int(input("How many terms? "))
# first two terms
n1, n2 = 0, 1
count = 0
# check if the number of terms is valid
if nterms <= 0:
   print("Please enter a positive integer")
elif nterms == 1:
   print("Fibonacci sequence upto",nterms,":")
   print(n1)
else:
   print("Fibonacci sequence:")
   while count < nterms:
      print(n1)
      nth = n1 + n2
```

```
    # update values
    n1 = n2
    n2 = nth
    count += 1
```

Output:

How many terms? 7

Fibonacci sequence:

0

1

1

2

3

5

8

3. Display multiplication table of K. Take k value from user

Ex: 7 x 1 =7

7 x 2 = 14 .....

```
num = 12

# To take input from the user

# num = int(input("Display multiplication table of? "))

for i in range(1, 11):
   print(num, 'x', i, '=', num*i)
```

Output

12 x 1 = 12

12 x 2 = 24

12 x 3 = 36

12 x 4 = 48

12 x 5 = 60

12 x 6 = 72

12 x 7 = 84

12 x 8 = 96

12 x 9 = 108

12 x 10 = 120

4.Take 10 integers from keyboard using loop and print their average value on the screen

Print the following patterns using loop :

*

**

***

****

```
a. sum = 0
i = 10
while i>0
  puts "Enter number"
  num = gets.chomp.to_i
  sum = sum + num
  i = i-1
end
puts "average is",sum/10.0
```

```
b.i = 1
while i<=4
  puts "*"*i
  i = i+1
```

```
end
```

5. Write a program to find greatest common divisor (GCD) or highest common factor (HCF) of given two numbers.

```
def gcd(a,b):
 # Everything divides 0
if (b == 0):
 return a
 return gcd(b, a%b)
a = 98
 = 56
if(gcd(a, b)):
print('GCD of', a,'and', b,'is', gcd(a, b))
```

```
else:
 print('not found')
```

Output:

GCD of 98 and 56 is 14

6. Write a Python program that accepts a word from the user and reverse it

```
def reverse(s):

  str = ""
for i in s:
 str = i + str
```

```
 return str

s = "Geeksforgeeks"

print ("The original string  is : ",end="")

print (s)

print ("The reversed string(using loops) is : ",end="")

print (reverse(s))
```

Output:

```
The original string  is : Geeksforgeeks

The reversed string(using loops) is : skeegrofskeeG
```

7. Write a Python program to

count the number of even and odd numbers from a series of numbers.

```
list1 = [10, 21, 4, 45, 66, 93, 1]
even_count, odd_count = 0, 0
# iterating each number in list
for num in list1:
# checking condition
  if num % 2 == 0:
      even_count += 1
   else:
       odd_count += 1
print("Even numbers in the list:",
```

```
even_count)
print("Odd numbers in the list:",
odd_count)
```

Output:

Even numbers in the list: 3

Odd numbers in the list: 4

8. Write a Python program that prints all the numbers from 0 to 6 except 3 and 6.

```
for x in range(6):
    if (x == 3 or x==6):
```

```
        continue
    print(x,end=' ')
print("\n")
```

Output: 0 1 2 4 5