

1. Write a Python Program to Find the Factorial of a Number?

```
In [1]: num = int(input("Enter a number: "))

# factorial of 0 and 1 is always 1
if num == 0 or num == 1:
    print("Factorial of", num, "is 1")

# for all other numbers
else:
    fact = 1
    for i in range(2, num + 1):
        fact *= i
    print("Factorial of", num, "is", fact)
```

Enter a number: 3
Factorial of 3 is 6

2 Write a Python Program to Display the multiplication Table?

```
In [2]: # get the number for which multiplication table is to be displayed
num = int(input("Enter the number: "))

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

Enter the number: 7
7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70

3 Write a Python Program to Print the Fibonacci sequence?

```
In [3]: n = int(input("Enter the number of terms you want to print: "))

# Initializing the first two terms of the sequence
a = 0
b = 1

# Printing the first two terms of the sequence
print(a)
print(b)

# Loop to generate the remaining terms of the sequence
for i in range(2, n):
    c = a + b
    a = b
    b = c
    print(c)
```

Enter the number of terms you want to print: 11
0
1
1
2
3
5
8
13
21
34
55

4. Write a Python Program to Check Armstrong Number?

```
In [5]: n = int(input("Enter the number of terms you want to print: "))

# Initializing the first two terms of the sequence
a = 0
b = 1

# Printing the first two terms of the sequence
print(a)
print(b)

# Loop to generate the remaining terms of the sequence
for i in range(2, n):
    c = a + b
    a = b
    b = c
    print(c)
```

Enter the number of terms you want to print: 88
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
610
987
1597
2584
4181
6765
10946
17711
28657
46368
75025
121393
196418
317811
514229
832040
1346269
2178309
3524578
5702887
9227465
14930352
24157817
39088169
63245986
102334155
165580141
267914296
433494437
701408733
1134903170
1836311903
2971215073
4807526976
7778742049
12586269025
20365011074
32951280099
53316291173
86267571272
139583862445
225851433717
365435296162
591286729879
956722026041
1548008755920
2504730781961
4052739537881
6557470319842
10610209057723
17167680177565
27777890035288
44945570212853
72723460248141
117669030460994
190392490709135
308061521170129
498454011879264
806515533049393
1304969544928657
2111485077978050
3416454622906707
5527939700884757
8944394323791464
14472334024676221
23416728348467685
37889062373143906
61305790721611591
99194853094755497
160500643816367088
259695496911122585
420196140727489673
679891637638612258

5. Write a Python Program to Find Armstrong Number in an Interval?

```
In [6]: # Function to find the number of digits in a number
def count_digits(num):
    count = 0
    while num > 0:
        count += 1
        num //= 10
    return count

# Function to check if a number is an Armstrong number or not
def is_armstrong(num):
    n = count_digits(num)
    temp = num
    sum = 0
    while temp > 0:
        digit = temp % 10
        sum += digit ** n
        temp //= 10
    if num == sum:
        return True
    else:
        return False

# Main program to find Armstrong numbers in an interval
start = int(input("Enter the starting number of the interval: "))
end = int(input("Enter the ending number of the interval: "))

print("Armstrong numbers in the interval", start, "-", end, "are:")

for num in range(start, end + 1):
    if is_armstrong(num):
        print(num)
```

Enter the starting number of the interval: 33
Enter the ending number of the interval: 99
Armstrong numbers in the interval 33 - 99 are:

6. Write a Python Program to Find the Sum of Natural Numbers?

```
In [7]: # take input from the user
n = int(input("Enter a positive integer: "))

# initialize sum and counter
sum = 0
i = 1

while i <= n:
    sum = sum + i
    i = i + 1 # update counter

# print the result
print("The sum of first", n, "natural numbers is", sum)
```

Enter a positive integer: 101
The sum of first 101 natural numbers is 5151

In []: