

## Chapter 32 - Chapter8.2

### Theory:

This chapter covers the topic of Chapter8.2.

### Code Example:

```
# sum of first n natural numbers ka
'''
sum(1) =1
sum(2) = 1+2
sum(3)= 1+2+3
.
.
.
.
.
sum(n)= 1+2+3+4+5+6+...+n
sum(n) = sum(n-1) + n
n * (n + 1) // 2
'''

def sum(n):
    if (n==1 or n==0):
        return 1
    return n * (n + 1) // 2

n = int(input("Enter a number n: "))
total = sum(n)
print(f"The sum of first {n} natural numbers is: {total}")

#pattern printing
def pattern(n):
    if(n==0):
        return 1
    print("***n)
    pattern(n-1)
    return "done"

n = int(input("Enter a number : "))
print(pattern(n))

def pattern(n, current=1):
    if current > n:
        return
    print("*** * current)
    pattern(n, current + 1)
n = int(input("Enter a number: "))
pattern(n)
```