

## Q1. WAP to print first n natural numbers

```
In [2]: num=int(input("enter number"))
        print("print 1st n numbers")
        for i in range(1,num+1):
            print(i)
```

```
enter number5
print 1st n numbers
1
2
3
4
5
```

## Q2.WAP to find sum of first n natural numbers

```
In [ ]: num=int(input("enter number"))
        sum=0
        for i in range(1,num+1):
            sum=sum+i
        print("sum of n natural number",sum)
```

## Q3. WAP to print first n natural numbers in reverse order

```
In [12]: num=int(input("enter number : "))
        print("List of natural numbers in reverse order: ")
        while(num>=1):
            print(num)
            num=num-1
```

```
enter number : 5
List of natural numbers in reverse order:
5
4
3
2
1
```

## Q4.WAP to input a number and print factorial

```
In [34]: num=int(input("enter number : "))
        factorial=1
        for i in range(1,num + 1):
            factorial = factorial*i
        print("The factorial of",num,"is: ",factorial)
```

```
enter number : 0
```

The factorial of 0 is: 1

## Q5. WAP to print Fibonacci sequence till n

```
In [8]: num=int(input("enter number : "))
n1=0
n2=1
print("fibonacci series upto",num)
print(n1)
print(n2)
if num==1:
    print(n1)
else:
    for i in range(2,num+1):
        fib=n1+n2 #1=0+1 2=1+1 3=1+2
        n1=n2      #n1=1  n1=1  n1=2
        n2=fib     #n2=1  n2=2  n2=3
        print(fib)
```

```
enter number : 5
fibonacci series upto 5
0
1
1
2
3
5
```

## Q6. WAP to print all digits of number input from user

```
In [23]: n=int(input("Enter number:"))
count=0
while(n>0):#567>0 #56>0
    count=count+1 #1=0+1 # 2=1+1 3=2+1
    n=n//10 #56=567//10 # 5=56//10
print("The number of digits in the number are:",count)#1
```

```
Enter number:567
The number of digits in the number are: 3
```

## Q7. WAP to find sum of all digits

```
In [5]: n=int(input("Enter number:"))
sum=0
while(n>0):#567>0
    digit=n%10 # 7=567%10 #6=56%10 #5=5%10
    sum=sum+digit #7=0+7 #13=7+6 #18=13+5
    n=n//10 # 56=567//10 #5=56//10
print("The number of digits in the number are:",sum)
```

```
Enter number:567
The number of digits in the number are: 18
```

## Q8 . WAP to find sum of following series given n as input from user

In [ ]:

## Q9.WAP to input base and exponent and print result without using inbuilt function pow

In [22]:

```
B=(int(input("Enter base: ")))
E=(int(input("Enter exponent: ")))
res=1
while E!=0: #4!=0 3!=0 2!=0 1!=0 0=0
    res=res*B #3=1*3 9=3*3 27=9*3 81=27*3
    E=E-1 #3=4-1 2=3-1 1=2-1 0=1-1
print("Answer =",res)
```

```
Enter base: 3
Enter exponent: 4
Answer = 81
```

## Q10. print patterns

In [83]:

```
n=int(input("enter number"))
for i in range(0,n):
    for j in range(0,i+1):
        print("*",end="")
    print()
```

```
enter number5
*
**
***
****
*****
```

In [86]:

```
n=int(input("enter number"))
for i in range(n, 0, -1 ):
    for j in range(1, i + 1):
        print("* ", end="")
    print()
```

```
enter number5
* * * * *
* * * *
* * *
* *
*
```

In [127...]

```
n = int(input("Enter number of rows:"))
spaces = n
for i in range(1, n + 1):
    for j in range(1, spaces + 1):
        print(" ", end="")
    for k in range(1, i + 1):
        print("*", end="")
    print()
    spaces = spaces - 1
```

Enter number of rows:5

```
*
**
***
****
*****
```

In [58]:

```
n = int(input("Enter the number of rows: "))
m = (2 * n) - 2
for i in range(0, n):
    for j in range(0, m): #6
        print(end=" ")
    m = m - 1
    for j in range(0, i + 1):
        print("* ", end=' ')
    print("\n")
```

Enter the number of rows: 4

```
*
* *
* * *
* * * *
```

## Q11. Print number pattern

In [115...]

```
n = int(input("Enter the number of rows: "))
for i in range(1,n+1): # 1 to 5
    for j in range(i):
        print(i, end=" ")
    print("\n")
```

Enter the number of rows: 5

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

In [130...]

```
n = int(input("Enter the number of rows: "))
for i in range(1, n+1):
    for j in range(1, i + 1):
        print(j, end=' ')
    print("\n")
```

Enter the number of rows: 5

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

In [176...]

```
n=int(input("enter a number"))
for i in range(n, 0, -1):
    for j in range(i, n+1):
        print(i, end="")
    print()
```

enter a number5

```
5
44
333
```

2222  
11111

In [185...

```
n = int(input("Enter the number of rows: "))
for i in range(1,n+1): # 1 to 5
    for j in range(i):
        print(i, end=" ")
    print(" ")
```

Enter the number of rows: 5  
1  
2 2  
3 3 3  
4 4 4 4  
5 5 5 5 5

In [198...

```
rows = int(input("enter number: "))
for i in range(1, rows + 1):
    for j in range(1, rows + 1):
        if(j <= rows - i):
            print(' ', end = ' ')
        else:
            print(i, end = ' ')
    print()
```

enter number: 5  
1  
2 2  
3 3 3  
4 4 4 4  
5 5 5 5 5

## Q12.Character Pattern

In [190...

```
for i in range (65,70):
    for j in range(65,i+1):
        print(chr(j),end="")
    print()
```

A  
AB  
ABC  
ABCD  
ABCDE

In [191...

```
for i in range(65,70):
    k=i
    for j in range(65,i+1):
        print(chr(k),end="")
        k=k+1
    print()
```

A  
BC  
CDE  
DEFG  
EFGHI

In [193...

```
for i in range (65,70):
    for j in range(65,i+1):
```

```
print(chr(i),end="")  
print()
```

A  
BB  
CCC  
DDDD  
EEEE

In [194...

```
m=6  
for i in range(65,70):  
    m=m-1  
    for j in range(m,1,-1):  
        print(" ",end="")  
    for k in range(65,i+1):  
        print(chr(k),end="")  
    for n in range(65,i):  
        print(chr(n),end="")  
    print()
```

A  
ABA  
ABCAB  
ABCDABC  
ABCDEABCD

In [ ]: