

• ASSIGNMENT

- NUMBER SERIES:-

1.WRITE A PROGRAM TO PRINT SERIES 0 2 6 12 20 30 42 ... N.

PROGRAM:-

```
n=int(input("Enter the range of number(Limit):"))
```

```
i=1
```

```
while i<=n:
```

```
    print((i*i)-i,end=" ")
```

```
    i+=1
```

OUTPUT:-

Enter the range of number(Limit):7

0 2 6 12 20 30 42

• ASSIGNMENT

2.WRITE A PROGRAM TO PRINT SERIES 0 ,2,8,14,24,34 ...N.

PROGRAM:-

```
n=int(input("Enter the range of number(Limit):"))
```

```
i=1
```

```
pr=0
```

```
while i<=n:
```

```
    if(i%2==0):
```

```
        pr=pow(i, 2) - 2
```

```
        print(pr,end=" ")
```

```
    else:
```

```
        pr = pow(i, 2) - 1
```

```
        print(pr, end=" ")
```

```
    i+=1
```

OUTPUT:-

Enter the range of number(Limit):6

0 2 8 14 24 34

• ASSIGNMENT

3.WRITE A PROGRAM TO PRINT ARITHMETIC SERIES 1 4 7 10 ...N.

PROGRAM:-

```
print("Enter the First Number:")
first_num=int(input())
print("Enter the range of number(Limit):")
n=int(input())
print("Enter the Difference Between two Number:")
diff=int(input())
while(first_num<=n):
    print(first_num,end=" ")
    first_num+=diff
```

OUTPUT:-

Enter the First Number:

1

Enter the range of number(Limit):

10

Enter the Difference Between two Number:

3

1 4 7 10

• ASSIGNMENT

4.WRITE A PROGRAM TO FIND THE SUM OF SERIES

$$1^3+2^3+3^3+4^3.....+N^3$$

PROGRAM:-

```
n=int(input("Enter the range of number:"))
```

```
sum=0
```

```
for i in range(1,n+1):
```

```
    sum+=pow(i,3)
```

```
print("The sum of the series = ",sum)
```

OUTPUT:-

Enter the range of number:5

The sum of the series = 225

• ASSIGNMENT

5.WRITE A PROGRAM TO FIND THE SUM OF SERIES

2+4+6+8.....+N

PROGRAM:-

```
n=int(input("Enter the range of number:"))
```

```
sum=0
```

```
i=0
```

```
while i<=n:
```

```
    sum+=i
```

```
    i+=2
```

```
print("The sum of the series = ",sum)
```

OUTPUT:-

Enter the range of number:12

The sum of the series = 42

• ASSIGNMENT

6.WRITE A PROGRAM TO FIND THE SUM OF SERIES

1+11+111+1111....+N

PROGRAM:-

```
n=int(input("Enter the range of number:"))
```

```
sum=0
```

```
p=1
```

```
for i in range(1,n+1):
```

```
    sum += p
```

```
    p = (p * 10) + 1
```

```
print("The sum of the series = ",sum)
```

OUTPUT:-

Enter the range of number:3

The sum of the series = 123

• ASSIGNMENT

8.WRITE A PROGRAM TO PRINT THE FIBONACCI SERIES

PROGRAM:-

```
print("Enter the range of number(Limit):")
```

```
n=int(input())
```

```
i=1
```

```
a=0
```

```
b=1
```

```
c=a+b
```

```
while(i<=n):
```

```
    print(c,end=" ")
```

```
    c = a + b
```

```
    a = b
```

```
    b = c
```

```
    i+=1
```

OUTPUT:-

```
Enter the range of number(Limit):7
```

```
1 1 2 3 5 8 13
```

• ASSIGNMENT

9.WRITE A PROGRAM TO FIND THE SUM OF SERIES

1+3+5+7...+N

PROGRAM:-

```
print("Enter the range of number:")
```

```
n=int(input())
```

```
sum=0
```

```
i=1
```

```
while(i<=n):
```

```
    sum+=i
```

```
    i+=2
```

```
print("The sum of the series = ",sum)
```

OUTPUT:-

Enter the range of number:

15

The sum of the series = 64

• ASSIGNMENT

10.WRITE A PROGRAM TO FIND THE SUM OF SERIES

1+2+3+..+N

PROGRAM:-

```
print("Enter the range of number:")  
n=int(input())  
sum=0  
for i in range(1,n+1):  
    sum+=i  
print("The sum of the series = ",sum)
```

OUTPUT:-

Enter the range of number:7

The sum of the series = 28

• ASSIGNMENT

**11.WRITE A PROGRAM TO FIND THE SUM OF SERIES
1!+2!+3!+...+N!**

PROGRAM:-

```
print("Enter the range of number:")
n=int(input())
sum=0
fact=1
for i in range(1,n+1):
    fact*=i
    sum+=fact
print("The sum of the series = ",sum)
```

OUTPUT:-

Enter the range of number:

9

The sum of the series = 409113

• ASSIGNMENT

12.WRITEA PROGRAM TO FIND THE SUM OF SERIES

9+99+999+9999.....+N

PROGRAM:-

```
n=int(input("Enter the range of number:"))
```

```
sum=0
```

```
p=9
```

```
for i in range(1,n+1):
```

```
    sum += p
```

```
    p=(p*10)+9
```

```
print("The sum of the series = ",sum)
```

OUTPUT:-

Enter the range of number:8

The sum of the series = 111111102

• ASSIGNMENT

• NUMBER PATTERN:-

**1.WRITE A PROGRAM TO PRINT FOLLOWING PATTERN
USING LOOP**

1

2 2

3 3 3

4 4 4 4

5 5 5 5 5

PROGRAM:-

```
rows = 6
```

```
for i in range(rows):
```

```
    for j in range(i):
```

```
        print(i, end=' ')
```

```
    print(' ')
```

OUTPUT:-

1

2 2

3 3 3

4 4 4 4

5 5 5 5 5

- **ASSIGNMENT**

• ASSIGNMENT

2.PYRAMID PATTERN OF NUMBERS

PROGRAM:-

```
rows = 5
for i in range(1, rows + 1):
    for j in range(1, i + 1):
        print(j, end=' ')
    print(' ')
```

OUTPUT:-

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

• ASSIGNMENT

3.INVERTED PYRAMID PATTERN OF NUMBERS

PROGRAM:-

```
rows = 5
```

```
b = 0
```

```
# reverse for loop from 5 to 0
```

```
for i in range(rows, 0, -1):
```

```
    b += 1
```

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

```
        print(b, end=' ')
```

```
    print('\n')
```

OUTPUT:-

```
1 1 1 1 1
```

```
2 2 2 2
```

```
3 3 3
```

```
4 4
```

```
5
```

• ASSIGNMENT

4.INVERTED PYRAMID PATTERN WITH THE SAME DIGIT PATTERN:-

PROGRAM:-

```
rows = 5
num = rows
# reverse for loop
for i in range(rows, 0, -1):
    for j in range(0, i):
        print(num, end=' ')
    print("\r")
```

OUTPUT:-

```
5 5 5 5 5
5 5 5 5
5 5 5
5 5
5
```


• ASSIGNMENT

5.ALTERNATE NUMBERS PATTERN USING WHILE LOOP

PROGRAM:-

```
rows = 5
```

```
i = 1
```

```
while i <= rows:
```

```
    j = 1
```

```
    while j <= i:
```

```
        print((i * 2 - 1), end=" ")
```

```
        j = j + 1
```

```
    i = i + 1
```

```
    print(' ')
```

OUTPUT:-

```
1
```

```
3 3
```

```
5 5 5
```

```
7 7 7 7
```

```
9 9 9 9 9
```

• ASSIGNMENT

6.REVERSE PYRAMID OF NUMBERS

PROGRAM:-

```
rows = 6  
for i in range(1, rows):  
    for j in range(i, 0, -1):  
        print(j, end=' ')  
    print(" ")
```

OUTPUT:-

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

● ASSIGNMENT

● PYRAMID PATTERNS:-

1.SIMPLE HALF PYRAMID:-

rows = 5

for i in range(0, rows):

 for j in range(0, i + 1):

 print("*", end=' ')

 print("\n")

OUTPUT:-

*

* *

* * *

* * * *

* * * * *

● ASSIGNMENT

2.DOWNWARD HALF – PYRAMID PATTERN OF STAR

PROGRAM:-

```
rows = 5  
for i in range(rows + 1, 0, -1):  
    for j in range(0, i - 1):  
        print("*", end=' ')  
    print(" ")
```

OUTPUT:-

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

● ASSIGNMENT

3.DOWNWARD FULL PYRAMID

PROGRAM:-

```
rows = 5
k = 2 * rows - 2
for i in range(rows, -1, -1):
    for j in range(k, 0, -1):
        print(end=" ")
    k = k + 1
    for j in range(0, i + 1):
        print("*", end=" ")
    print(" ")
```

OUTPUT:-

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

● ASSIGNMENT

4.RIGHT DOWN MIRROR STAR PATTERN:-

PROGRAM:-

```
rows = 5
i = rows
while i >= 1:
    j = rows
    while j > i:
        print(' ', end=' ')
        j -= 1
    k = 1
    while k <= i:
        print('*', end=' ')
        k += 1
    print()
    i -= 1
```

OUTPUT:-

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

• ASSIGNMENT

5.EQUILATERAL TRIANGLE PATTERN OF STAR:-

PROGRAM:-

```
print("Print equilateral triangle")
```

```
size = 7
```

```
m = (2 * size) - 2
```

```
for i in range(0, size):
```

```
    for j in range(0, m):
```

```
        print(end=" ")
```

```
    m = m - 1
```

```
    for j in range(0, i + 1):
```

```
        print("* ", end=' ')
```

```
    print(" ")
```

OUTPUT:-

```

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

● ASSIGNMENT

6.RIGHT STAR PATTERN OF STAR:-

PROGRAM:-

```
rows = 5
```

```
for i in range(0, rows):
```

```
    for j in range(0, i + 1):
```

```
        print("*", end=' ')
```

```
    print("\r")
```

```
for i in range(rows, 0, -1):
```

```
    for j in range(0, i - 1):
```

```
        print("*", end=' ')
```

```
    print("\r")
```

OUTPUT:-

```
*
```

```
* *
```

```
* * *
```

```
* * * *
```

```
* * * * *
```

```
* * * *
```

```
* * *
```

```
* *
```

```
*
```


• ASSIGNMENT

• PROBLEMS:-

1.CONVERT DECIMAL TO BINARY NUMBER

PROGRAM:-

```
decimal_num = int(input("enter the decimal number:"))
```

```
binary_num = 0
```

```
i = 0
```

```
while(decimal_num!=0):
```

```
    remainder = decimal_num%2
```

```
    binary_num = binary_num+remainder*(10**i)
```

```
    decimal_num = decimal_num/2
```

```
    i = i+1
```

```
print("the binary equivalent =",binary_num)
```

OUTPUT:-

Enter the decimal number : 7

The binary equivalent = 111

• ASSIGNMENT

2.CONVERT BINARY TO DECIMAL NUMBER

PROGRAM:-

```
binary_num = int(input("enter the binary number:"))  
decimal_num = 0  
i = 0  
while(binary_num!=0):  
    remainder = binary_num%2  
    decimal_num = decimal_num+remainder*(10**i)  
    binary_num = binary_num/2  
    i = i+1  
print("the decimal equivalent =",decimal_num)
```

OUTPUT:-

Enter the binary number : 1101

The decimal equivalent is 13

• ASSIGNMENT

3.CHECK THE GIVEN NUMBER IS ARMSTRONG NUMBER

PROGRAM:-

```
num = int(input("Enter a number: "))
sum = 0
temp = num
while temp > 0:
    digit = temp % 10
    sum += digit ** 3
    temp //= 10
if num == sum:
    print(num,"is an Armstrong number")
else:
    print(num,"is not an Armstrong number")
```

OUTPUT:-

Enter a number: 333

333 is not an Armstrong number

• ASSIGNMENT

4.REVERSING A NUMBER

PROGRAM:-

```
Num = int(input("enter the number :"))
```

```
print("the reversed number is :",)
```

```
while(num!=0):
```

```
    temp = num%10
```

```
    print(temp, end=" ")
```

```
    num = num/10
```

OUTPUT:-

```
enter the number : 123
```

```
the reversed number is : 3 2 1
```

- **ASSIGNMENT**

5. PRINT ALL THE PRIME NUMBERS FROM 1 – 50

PROGRAM:-

```
for i in range(1,50):
```

```
    if i>1:
```

```
        for j in range(2,i):
```

```
            if i%j==0:
```

```
                break
```

```
        else:
```

```
            print(i)
```

• ASSIGNMENT

OUTPUT:-

2

3

5

7

11

13

17

19

23

29

31

37

41

43

47

• ASSIGNMENT

6. PRINT ALL THE LEAP YEAR FROM 1900 – 2000

PROGRAM:-

```
print("leap years from 1900-2000 are :")
```

```
for i in range(1900,2000):
```

```
    if(i%4==0):
```

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

OUTPUT:-

```
1900 1904 1908 1912 1916 1920 1924 1928 1932 1936 1940
1944 1948 1952 1956 1960 1964 1968 1972 1976 1980 1984
1988 1992 1996
```

- **ASSIGNMENT**