

## Problems :-

① Print numbers from 1 to N;

Take a positive integer N as input and print all the numbers from 1 to N.

Sample Input :- N=5

Sample output :-

1  
2  
3  
4  
5

Code :- for loop

n = int(input("Give n value"))

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

print(i)

while loop :-

n = int(input("Give n value"))

i = 1

while i <= n:

print(i)

i += 1

② Calculate the sum of N natural numbers ;

Take a positive integer N as input and calculate the sum of the first N natural numbers.

QIP :- N = 5

OIP :- Sum of first 5 natural numbers : 15

Code :-

n = int(input("Give n value :"))

sum = 0

while i <= n :

sum += i

i += 1

Print (sum)

③ Print even numbers from 1 to N ;

Take a positive integer N as input and print all the even numbers from 1 to N.

Sample QIP :- N = 10

OIP :- 2 4 6 8 10

Code :-

```
n = int(input("Give n value :"))
```

```
i = 1
```

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

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

```
        print(i)
```

```
i += 1
```

O/P :-

Enter value = 10

2  
4  
6  
8  
10

~~i = 1~~

while i <= n:

if not (i%2 == 0):

i += 1

continue

Print(i)

i += 1

#### ④ Multiplication table of a number :-

Take a Positive integer N as input and Print the multiplication table of N from 1 to 10.

Sample I/P :- N=3

O/P :-  $3 \times 1 = 3$

$3 \times 2 = 6$

$3 \times 3 = 9$

$3 \times 4 = 12$

$3 \times 5 = 15$

$3 \times 6 = 18$

$3 \times 7 = 21$

$3 \times 8 = 24$

$3 \times 9 = 27$

$3 \times 10 = 30$

Code :- valobs atri m3ldaq xelqma

```
n = int(input("Give n value :"))
```

```
i = 1
```

```
while i <= 10:
```

```
    print(f"{n} x {i} = {n*i}")
```

```
i += 1
```

O/P :-

Given value = 5

$5 \times 1 = 5$

$5 \times 2 = 10$

$5 \times 3 = 15$

.. ..

.. .. more values etc. etc. etc.

$5 \times 10 = 50$

using range

$n = \text{int}(\text{input}(\text{"Give n value :"}))$

for i in range(1,11):

Print(f"\{n\} x \{i\}\n = \{n\*i\}\n")

## ⑤ calculate the factorial of a number :-

Take a positive integer N as input and calculate its factorial ( $N!$ ).

O/P :- N = 5

O/P :- Factorial of 5 : 120

Code :- n = int (input ("Give n value :"))

factorial = 1

while n > 0 :

    factorial \* = factorial \* n

    n -= 1

Print (factorial)

O/P :- Given n value : 5

120

## Function :-

Functions are blocks of organised, reusable code that perform a specific task.

Dividing a complex problem into smaller chunks makes our program easy to understand and reuse.

## Types :-

### Functions

Pre defined  
↓  
Library functions

User Defined

User defined functions, to reduce complexity of big programs.

## Declaration / Defining :-

You define a function using the def keyword, followed by the function name, parenthesis (), and a colon :

Syntax :

def function-name (parameters):

# Function body.

Function call :

To execute a function and run the code inside it, you call the function by using its name followed by parentheses ()

Syntax :

function-name (arguments)

Parameters and Arguments :

Functions can take input values known as Parameters or arguments. Parameters are defined in the functions' parentheses during the function definition.

Arguments are the actual values passed to the function when it is called.

Ex: def fun():

#

s = fun()

Sum of two numbers :

def sum(a,b):

print(a+b)

sum(5,10)

Return Statement :

Functions can return a value using the return statement.

The returned value can be assigned to a variable or used in expressions.

def add(a,b):

return a+b

result = add(3,5)

Print(result)

Q.P.: 8