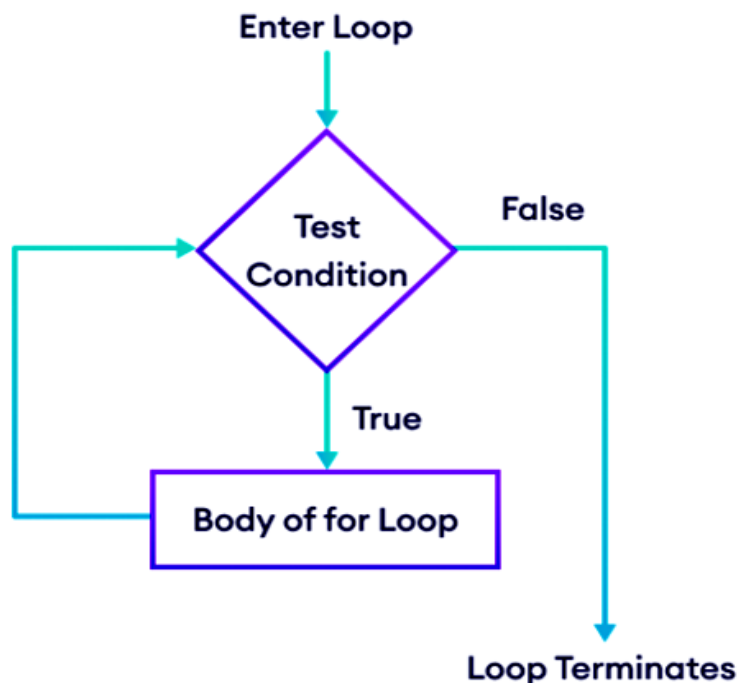


For-Loop

Basically, a for loop is used to iterate elements one by one from sequences like string, list, tuple, etc. This loop can be easily understood when compared to the while loop. While iterating elements from the sequence we can perform operations on every element.

The Python For Loop is used to repeat a block of statements until there are no items in the Object may be String, List, Tuple, or any other object.



1. Initialization: We initialize the variable(s) here. Example $i=1$.
2. Items in Sequence / Object: It will check the items in Objects. For example, individual letters in String word. If there are items in sequence (True), then it will execute the statements within it or inside. If no item is in sequence (False), it will exit.
3. After completing the current iteration, the controller will traverse to the next item.
4. Again it will check the new items in sequence. The statements inside it will be executed as long as the items are in sequence.

```
# Upto n natural no.
```

```
n = int(input("Enter a number: "))
```

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

```
    if i < n:
```

```
        print(i, end=",") # Print numbers with commas
```

```
    else:
```

```
        print(i)
```

```
# for upto n even natural no.
```

```
n=int(input("enter a no"))
```

```
for i in range(2,n+1,2):
```

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

```
        if i<n:
```

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

```
        else:
```

```
            print(i)
```

```
    else:
```

```
        if(i<n-1):
```

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

```
        else:
```

```
            print(i)
```

```
# for upto n odd natural no.
```

```
n=int(input("enter a no"))
```

```
for i in range(1,n+1,2):
```

```
    if(n%2!=0):
```

```
        if i<n:
```

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

```
        else:
```

```
            print(i)
```

```
    else:
```

```
        if(i<n-1):
```

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

```
        else:
```

```
            print(i)
```

```
# WAP to check given number is prime or not.
```

```
num = int(input("Enter any number: "))
```

```
factor = 0
```

```
if num == 0 or num == 1:
```

```
    print(num, "is not a prime number")
```

```
elif num > 1:
```

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

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

```
            factor+=1
```

```
            break
```

```
if factor==0:
```

```
    print(num, "is not a prime number")
```

```
else:
```

```
    print(num, "is a prime number")
```

```
# Odd no upto n natural no.
```

```
n = int(input("Enter a number: "))
```

```
for i in range(1, n + 1,2):
```

```
    if n%2 !=0:
```

```
        if i<n:
```

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

```
        else:
```

```
            print(i)
```

```
    else:
```

```
        if i<n-2:
```

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

```
        else:
```

```
            print(i)
```

```
# Even no upto n natural no.
```

```
n = int(input("Enter a number: "))
```

```
for i in range(2, n + 1,2):
```

```
    if n%2 ==0:
```

```
        if i<n:
```

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

```
        else:
```

```
            print(i)
```

```
    else:
```

```
        if i<n-2:
```

```

        print(i,end=",")
    else:
        print(i)

# n natural even no.
n = int(input("Enter a number: "))
for i in range(2, 2*n + 1,2):
    if n%2 ==0:
        if i<2*n:
            print(i,end=',')
        else:
            print(i)
    else:
        if i<2*n-1:
            print(i,end=",")
        else:
            print(i)

# n natural odd no.
n = int(input("Enter a number: "))
for i in range(1, 2*n + 1,2):
    if n%2 ==0:
        if i<2*n-1:
            print(i,end=',')
        else:
            print(i)
    else:
        if i<2*n-1:
            print(i,end=",")
        else:
            print(i)

# n even natural no.
n=int(input("enter a no"))
for i in range(1,n+1):
    if i<n:
        print(2*i,end=',')
    else:
        print(2*i)

```

```

# n odd natural no.
n=int(input("enter a no"))
for i in range(1,n+1):
    if i<n:
        print(2*i-1,end=',')
    else:
        print(2*i-1)

## LCM :-----

x = int(input("Enter any number: "))
y = int(input("Enter any number: "))

if x > y:
    greater = x
else:
    greater = y
while(True):
    if((greater % x == 0) and (greater % y == 0)):
        lcm = greater
        break
    greater += 1

print("LCM of {} and {} is {}".format(x,y,lcm))

## HCF :-----
x=int(input("Enter any no:"))
y= int(input("Enter any no:"))

if x>y:
    smaller = y
else:
    smaller = x

for i in range(1,smaller+1):
    if (x%i==0 and y%i==0):
        hcf = i
print("HCF of {} and {} is {}".format(x,y,hcf))

```

```
## Factors :---  
n=int(input("Enter any no:"))  
for i in range(1,n+1):  
    if n%i==0:  
        print(i)
```