Ex. 1

Printing all numbers from 1 to 10 using loop.

```
i = 1
# condition
while i <= 10:
    # Print value
    print(i)

    # update
    i += 1
```

output:-

1
2
3
4
5
6
7
8
9
10

Printing even numbers from 0 to 10.

```
i = 0
while i <= 10:
    if i % 2 == 0:
        print(i)

    i = i + 1
```

output

0
2
4
6
8
10

Print sum of all numbers from
1 to 10.

```
# initialize
i = 1
add = 0
# loop condition
 while i <= 10:
     Print (i, end = "  ")
     add = add + i


     i + = 1

Print ( add)
```

Range function

Range function allows users
to generate series of
numbers.

It is iterable as well.

Iterator, Iterable and Iteration.

An iterator is an object that contains a countable number of values.

An iterable is any Python object capable of returning its members one at a time permitting it to be iterated over in a for-loop.

Looping through an iterator process is called as Iteration

Iterator, Iterable and Iteration.

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An iterable is any Python object capable of returning its members one at a time permitting it to be iterated over in a for-loop.

looping through an iterator

for loop in Python

for iterator in iterable :

_ _ _ _ _ _ | Body |

eg:- for i in range (1, 11):

iterator

/iterable

print (i)

output:- It will print from 1-10

| Multiplication Table |

```
n = int (input())
for i in range (1,11):
    print (i * n)
```

output:- It will generate table of any given input.

Square Pattern

```
for i in range (4):
    print ("#", end = " ")

print ()
for i in range (4):
    print ("#", end = " ")

print ()
for i in range (4):
    print ("#", end = " ")

print ()
for i in range (4):
    print ("#", end = " ")
```

output :-
```
# # # #
# # # #
# # # #
# # # #
```

Another way:-

```python
for i in range(4):        → row    → outer loop
    for j in range(4):    → column → inner loop
        print("#", end=" ")
    print()
```

output:- Same as above.

Right angled triangle

```python
n = int(input())
for i in range(1, n+1):
    for j in range(i):
        print("#", end=" ")
    print()
```

n=3 →

```
#
# #
# # #
```

output:-