Python For Loop

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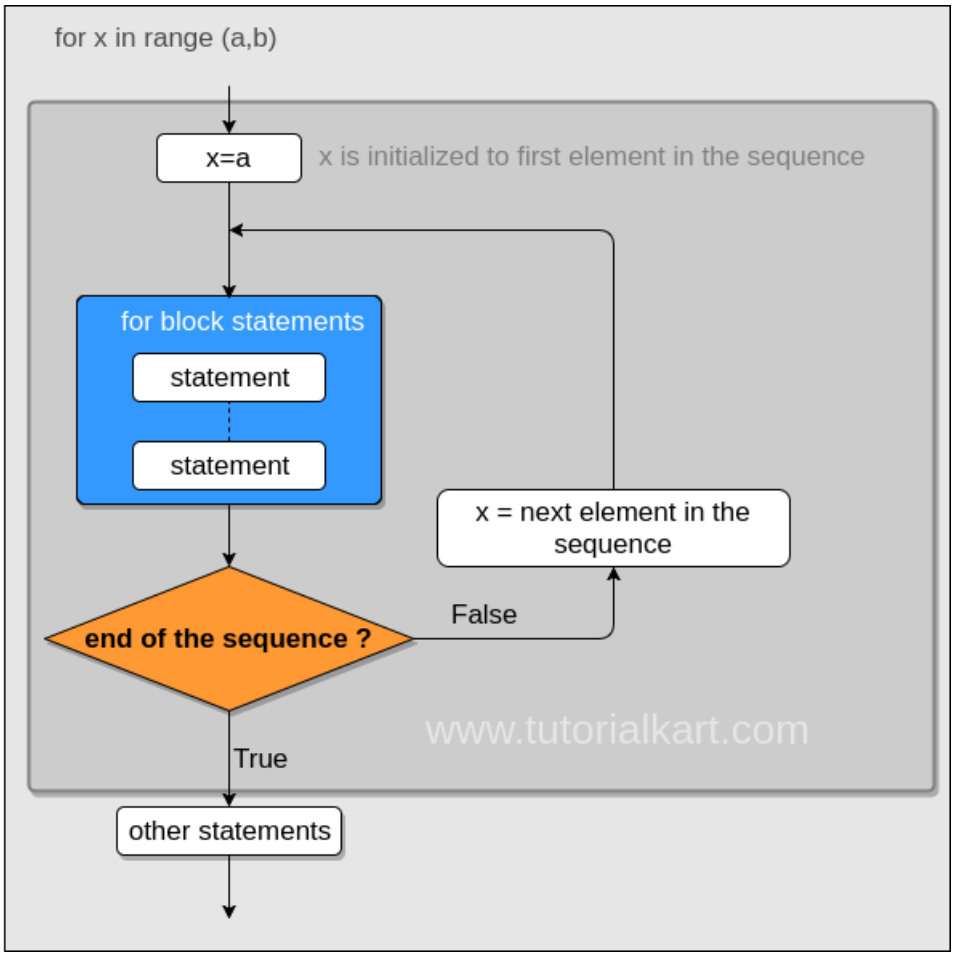
Python For loop – In Python, for loop is used when a set of statements are to be executed iteratively over a sequence of elements.

Nested For Loop is also discussed in this Python Tutorial.

Syntax – Python For Loop

```
for <variable> in <sequence>:
    statement1
    statement2
```

A pictorial representation of for loop is shown below.



Python For Loop Execution Model

Python For Loop Examples

Following examples were provided, based on the iteration over different types of sequences :

- For loop with iteration over elements in list
- For loop with iteration over elements in range
- For loop with iteration over characters in string
- For loop with iteration over items in tuple
- Nested For Loop

Note : Python 3.6.1 is used for the examples.

Example 1 – Python For Loop with Iterator over List

In this example, we will take a list of numbers and use for loop to iterate over each of the element in the list.

example.py – Python Program

```
for number in [1, 2, 3, 5, 6, 10, 11, 12]:
    print(number)
```

Output

```
1
2
3
5
6
10
11
12
```

Example 2 – Python For Loop with Iterator over Range

In this example, we will take a range, and use for loop to iterate over each number in the range.

example.py – Python Program

```
for number in range(1, 5):
    print(number)
```

Output

```
1
2
3
4
```

Example 3 – Python For loop with Iterator over String

In this example, we will take a String and use for loop to iterate over each character of the string.

example.py – Python Program

```
for ch in "tutorialkart":
    print(ch)
```

Output

```
t
u
t
o
r
i
a
l
k
a
r
t
```

Example 4 – Python For loop with Iterator over Tuple

In this example, we will take a tuple and use for loop to iterate over each item in the tuple.

example.py – Python Program

```
for name in ('Johny', 'Luciana', 'Christy', 'Gopal', 'Joey'):
    print(name)
```

Output

```
Johny
Luciana
Christy
Gopal
Joey
```

Nested For Loop

Any statement inside the for loop could be another for loop, if block, if-else block or any such.

An example program for nested for loop with embedded if-else blocks is given below.

example.py – Python Program

```
for greeting in ['hello', 'hi', 'hola']:
    for ch in greeting:
        print(ch)
    if greeting=='hello':
        print("hello buddy!")
    else:
        if greeting=='hi':
            print("hi friend!")
        else:
            print("hola gola!")
```

Output

```
h
e
l
l
o
hello buddy!
h
i
hi friend!
h
o
l
a
hola gola!
```

Conclusion

In this Python Tutorial, we have learn about for loop execution flow, for loop syntax in python, nested for loop, for loops that iterate over list, range, string and tuple. As an exercise, try out the for loop that iterates over buffer.

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- Python Variable Data Type Conversion
- Python Comments

Control Statements

- Python If
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Python String

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- Python String Length
- Python String Replace
- Python Split String
- Python Count Occurrences of Sub-String
- Python Sort List of Strings

Functions

- Python Functions

Python Collections

- Python List
- Python Dictionary

Advanced

- Python Multithreading

Useful Resources

- Python Interview Questions