



Python for..loop



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Agenda



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What is for loop in Python?

The for loop in Python is used to iterate over a sequence (list, tuple, string) or other iterable objects. Iterating over a sequence is called traversal.

Syntax of for Loop

```
for val in sequence:  
    Body of for
```

Flowchart

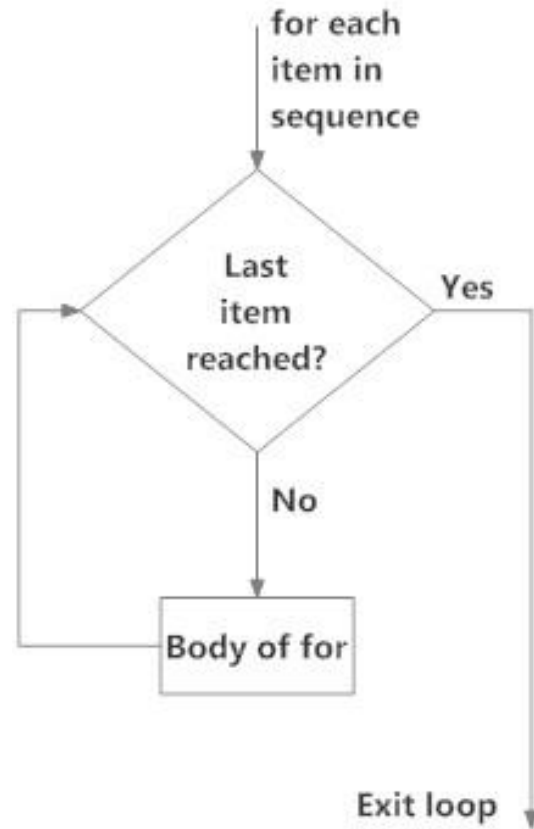


Fig: operation of for loop

```
# Program to find the sum of all numbers stored in a list
```

```
# List of numbers  
numbers = [6, 5, 3, 8, 4, 2, 5, 4, 11]
```

```
# variable to store the sum  
sum = 0
```

```
# iterate over the list  
for val in numbers:  
    sum = sum+val
```

```
# Output: The sum is 48  
print("The sum is", sum)
```

The range() function

We can generate a sequence of numbers using range() function. range(10) will generate numbers from 0 to 9 (10 numbers).

We can also define the start, stop and step size as range(start,stop,step size). step size defaults to 1 if not provided.

```
# Output: range(0, 10)
print(range(10))
```

```
# Output: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
print(list(range(10)))
```

```
# Output: [2, 3, 4, 5, 6, 7]
print(list(range(2, 8)))
```

```
# Output: [2, 5, 8, 11, 14, 17]
print(list(range(2, 20, 3)))
```

```
# Program to iterate through a list using indexing
```

```
genre = ['pop', 'rock', 'jazz']
```

```
# iterate over the list using index
for i in range(len(genre)):
    print("I like", genre[i])
```

for loop with else

A for loop can have an optional else block as well. The else part is executed if the items in the sequence used in for loop exhausts.

```
digits = [0, 1, 5]
```

```
for i in digits:
```

```
    print(i)
```

```
else:
```

```
    print("No items left.")
```