Iterating for loop:

A for loop is **used for iterating over a sequence** (that is either a list, a tuple, a dictionary, a set, or a string). This is less like the for keyword in other programming languages, and works more like an iterator method as found in other object-orientated programming languages.

Membership Operators:

Membership operators are operators used to validate the membership of a value. It tests for membership in a sequence, such as strings, lists, or tuples.

- in operator:

  The 'in' operator is used to check if a value exists in a sequence or not. Evaluate to true if it finds a variable in the specified sequence and false otherwise.

- `# Python program to illustrate`

```
# Finding common member in list
# using 'in' operator
list1=[1,2,3,4,5]
list2=[6,7,8,9]
for item in list1:
  if item in list2:
    print("overlapping")
else:
  print("not overlapping")
```

'not in' operator:

Evaluates to true if it does not finds a variable in the specified sequence and false otherwise.

```
x = 24
y = 20
list = [10, 20, 30, 40, 50 ];

if ( x not in list ):
  print("x is NOT present in given list")
else:
  print("x is  present in given list")

if ( y in list ):
  print("y is present in given list")
else:
  print("y is NOT present in given list")
```

Indexing in Python:

Indexing in Python is a way to refer the individual items within an iterable by its position. In other words, you can directly access your elements of choice within an iterable and do various operations depending on your needs.

```
List1 = [1, 2, 3, 4, 1, 1, 1, 4, 5]


# Will print the index of '4' in list1


print(list1.index(4))

list2 = ['cat', 'bat', 'mat', 'cat', 'pet']

# Will print the index of 'cat' in list2
print(list2.index('cat'))
```

Negative index in python:

- Python arrays & list items can be accessed with positive or negative numbers (also known as index).
- For instance our array/list is of size n, then for positive index 0 is the first index, 1 second, last index will be n-1. For negative index, -n is the first index, -(n-1) second, last negative index will be – 1.
- A negative index accesses elements from the end of the list counting backwards.
- An example to show negative index in python

```
>>> import array
>>> a= [1, 2, 3]
>>> print a[-3]
1
>>> print a[-2]
2
>>> print a[-1]
3
```

Slicing:

You can return a range of characters by using the slice syntax.

Specify the start index and the end index, separated by a colon, to return a part of the string.

```
b ="Hello, World!"
print(b[2:5])
```