#  Lab 7

#  For loop

**For Loop**

For loops are used for sequential traversal. For example: traversing a list or string or array etc. In Python, there is no C style for loop, i.e., for (i=0; i<n; i++). There is “for in” loop which is similar to for each loop in other languages. Let us learn how to use for in loop for sequential traversals.

**Syntax of While Loop**

for var in iterable:

 statements

**Flow Chart for Loop**



**Program 1**

*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*

*print("The sum is", sum)*

**Output of Program 1**

**Loop Control Statements**

Loop control statements change execution from its normal sequence. When execution leaves a scope, all automatic objects that were created in that scope are destroyed.

The Python break statement immediately terminates a loop entirely. Program execution proceeds to the first statement following the loop body.

The Python continue statement immediately terminates the current loop iteration. Execution jumps to the top of the loop, and the controlling expression is re-evaluated to determine whether the loop will execute again or terminate.

**Syntax**

*for var in iterable:*

 *statement(s)*

 *if expression:*

 *break/continue*

**Program 2** **break Statement**

*for i in range(1,10):*

 *if i == 3:*

 *break*

 *print i*

**Output of Program 2**

**Program 3 continue Statement**

*for i in range(1,10):*

 *if i == 3:*

 *continue*

 *print i*

**Output of Program 3**

**The else Statement**

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.

The break keyword can be used to stop a for loop. In such cases, the else part is ignored.

Hence, a for loop's else part runs if no break occurs.

**Syntax**

*for var in iterable:*

 *statement(s)*

 *else expression:*

 *statement(s)*

**Program 4:**

*digits = [0, 1, 5]*

*for i in digits:*

 *print(i)*

*else:*

 *print("No items left.")*

**Output of Program 4**

**LAB TASKS**

**Q No 1**

Display a message “Done” after successful execution of for loop

**Q No 2**

Display -10 to -1 using for loop