3. Working with Lists

Theory:

• Iterating over a list using loops.

• Sorting and reversing a list using sort(), sorted(), and reverse().

• Basic list manipulations: addition, deletion, updating, and slicing.

**1. Iterating Over a List Using Loops**

* **For Loop**: Used to access each element in a list one at a time.
* **While Loop**: Used when the iteration depends on a condition, typically with an index variable.

**2. Sorting and Reversing a List**

1. **sort() Method**:
   * Used to sort the elements of a list in ascending order (by default).
2. **sorted() Function**:
   * Returns a new, sorted version of the list without modifying the original.
3. **reverse() Method**:
   * Reverses the order of elements in the list.

**3. Basic List Manipulations**

1. **Addition**:
   * Add elements using append(), insert(), or concatenation (+).
2. **Deletion**:
   * Remove elements using remove(), pop(), or the del statement.
3. **Updating**:
   * Modify elements by accessing them using their index and assigning new values.
4. **Slicing**:
   * Extract a portion of the list using slicing (start:end:step).