**Java LinkedList class**

Java LinkedList class uses doubly linked list to store the elements. It provides a linked-list data structure. It inherits the AbstractList class and implements List and Deque interfaces.

The important points about Java LinkedList are:

* Java LinkedList class can contain duplicate elements.
* Java LinkedList class maintains insertion order.
* Java LinkedList class is non synchronized.
* In Java LinkedList class, manipulation is fast because no shifting needs to be occurred.
* Java LinkedList class can be used as list, stack or queue.

**Hierarchy of LinkedList class**

As shown in above diagram, Java LinkedList class extends AbstractSequentialList class and implements List and Deque interfaces.

Java LinkedList class hierarchy

**Doubly Linked List**

In case of doubly linked list, we can add or remove elements from both side.

java LinkedList class using doubly linked list

**LinkedList class declaration**

Let's see the declaration for java.util.LinkedList class.

1. public class LinkedList<E> extends AbstractSequentialList<E> implements List<E>, Deque<E>, Cloneable, Serializable

**Methods of Java LinkedList**

|  |  |
| --- | --- |
| **Method** | **Description** |
| void add(int index, Object element) | It is used to insert the specified element at the specified position index in a list. |
| void addFirst(Object o) | It is used to insert the given element at the beginning of a list. |
| void addLast(Object o) | It is used to append the given element to the end of a list. |
| int size() | It is used to return the number of elements in a list |
| boolean add(Object o) | It is used to append the specified element to the end of a list. |
| boolean contains(Object o) | It is used to return true if the list contains a specified element. |
| boolean remove(Object o) | It is used to remove the first occurence of the specified element in a list. |
| Object getFirst() | It is used to return the first element in a list. |
| Object getLast() | It is used to return the last element in a list. |
| int indexOf(Object o) | It is used to return the index in a list of the first occurrence of the specified element, or -1 if the list does not contain any element. |
| int lastIndexOf(Object o) | It is used to return the index in a list of the last occurrence of the specified element, or -1 if the list does not contain any element. |