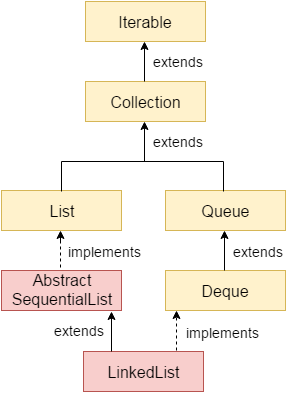
**Java LinkedList class**



Java LinkedList class uses a 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 occur.
* Java LinkedList class can be used as a list, stack or queue.

### 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

### Constructors of Java LinkedList

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| **Constructor** | **Description** |
| LinkedList() | It is used to construct an empty list. |
| LinkedList(Collection<? extends E> c) | It is used to construct a list containing the elements of the specified collection, in the order, they are returned by the collection's iterator. |

### Methods of Java LinkedList

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| **Method** | **Description** |
| boolean add(E e) | It is used to append the specified element to the end of a list. |
| void add(int index, E element) | It is used to insert the specified element at the specified position index in a list. |
| boolean addAll(Collection<? extends E> c) | It is used to append all of the elements in the specified collection to the end of this list, in the order that they are returned by the specified collection's iterator. |
| boolean addAll(Collection<? extends E> c) | It is used to append all of the elements in the specified collection to the end of this list, in the order that they are returned by the specified collection's iterator. |
| boolean addAll(int index, Collection<? extends E> c) | It is used to append all the elements in the specified collection, starting at the specified position of the list. |
| void addFirst(E e) | It is used to insert the given element at the beginning of a list. |
| void addLast(E e) | It is used to append the given element to the end of a list. |
| void clear() | It is used to remove all the elements from a list. |
| Object clone() | It is used to return a shallow copy of an ArrayList. |
| boolean contains(Object o) | It is used to return true if a list contains a specified element. |
| Iterator<E> descendingIterator() | It is used to return an iterator over the elements in a deque in reverse sequential order. |
| E element() | It is used to retrieve the first element of a list. |
| E get(int index) | It is used to return the element at the specified position in a list. |
| E getFirst() | It is used to return the first element in a list. |
| E 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. |
| ListIterator<E> listIterator(int index) | It is used to return a list-iterator of the elements in proper sequence, starting at the specified position in the list. |
| boolean offer(E e) | It adds the specified element as the last element of a list. |
| boolean offerFirst(E e) | It inserts the specified element at the front of a list. |
| boolean offerLast(E e) | It inserts the specified element at the end of a list. |
| E peek() | It retrieves the first element of a list |
| E peekFirst() | It retrieves the first element of a list or returns null if a list is empty. |
| E peekLast() | It retrieves the last element of a list or returns null if a list is empty. |
| E poll() | It retrieves and removes the first element of a list. |
| E pollFirst() | It retrieves and removes the first element of a list, or returns null if a list is empty. |
| E pollLast() | It retrieves and removes the last element of a list, or returns null if a list is empty. |
| E pop() | It pops an element from the stack represented by a list. |
| void push(E e) | It pushes an element onto the stack represented by a list. |
| E remove() | It is used to retrieve and removes the first element of a list. |
| E remove(int index) | It is used to remove the element at the specified position in a list. |
| boolean remove(Object o) | It is used to remove the first occurrence of the specified element in a list. |
| E removeFirst() | It removes and returns the first element from a list. |
| boolean removeFirstOccurrence(Object o) | It is used to remove the first occurrence of the specified element in a list (when traversing the list from head to tail). |
| E removeLast() | It removes and returns the last element from a list. |
| boolean removeLastOccurrence(Object o) | It removes the last occurrence of the specified element in a list (when traversing the list from head to tail). |
| E set(int index, E element) | It replaces the element at the specified position in a list with the specified element. |
| Object[] toArray() | It is used to return an array containing all the elements in a list in proper sequence (from first to the last element). |
| <T> T[] toArray(T[] a) | It returns an array containing all the elements in the proper sequence (from first to the last element); the runtime type of the returned array is that of the specified array. |
| int size() | It is used to return the number of elements in a list. |