DAY-53

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LINKEDLIST

WHAT IS LINKED LIST ?

- IT IS AN IMPLEMENTATION CLASS OF LIST(I)
- UNDERLYING DATA STRUCTURE IS DOUBLY LINKED LIST.
- IT ALLOWS DUPLICATE OBJECTS
- NULL INSERTION IS POSSIBLE
- HETEROGENEOUS OBJECTS ARE ALLOWED
- INSERTION ORDER IS PRESERVED
- IMPLEMENTS SERIALIZATION AND CLONEABLE(I) BUT DOESN'T IMPLEMENT RANDOMACCESS(I).

CONSTRUCTOR OF LINKED LIST

- LinkedList L = new LinkedList();
- LinkedList L = new LinkedList(collection c)

SPECIFIC METHODS OF LINKED LIST

- addFirst(Object obj)
- addLast(Object obj)
- removeFirst(Object obj)
- removeLast(Object obj)
- getFirst(Object obj)
- getLast(Object obj)

```
package collectionpractice;

import java.util.ArrayList;
import java.util.LinkedList;

public class LinkedListDemo
{

	public static void main(String[] args)
	{
		LinkedList l = new LinkedList();
		l.add(1);
		l.add(1);
		l.add("hello");
		l.add(null);
		l.add(1.1);
		System.out.println("LinkedList objects are "+l);
```

```
        l.addFirst(20);
        System.out.println("after adding 20 as first "+l);
        l.addLast(200);
        System.out.println("after adding 200 as last "+l);
        l.removeFirst();
        System.out.println("after removing first "+l);
        l.removeLast();
        System.out.println("after removing last "+l);
        System.out.println("first object is "+l.getFirst());
        System.out.println("last object is "+l.getLast());
        System.out.println(l.get(0));

        ArrayList a = new ArrayList(l);
        System.out.println(a);


    }

}
```

LINKEDLIST ADVANTAGES

- LinkedList OBJECTS MAY NOT BE PRESENT IN CONSECUTIVE MEMORY LOCATIONS.
- ADDITION AND DELETION IN EBTWEEN DOESN'T INVOLVE SHOFT OPERATION.
- HENCE, LINKEDLIST IS PREFFERED WHEN OUR FREQUENT OPERATION IS ADDITION/DELETION.

LINKED LIST DISADVANTAGES

- LINKEDLIST, OBEJCTS MAY NOT BE PRESENT CONSECUTIVE MEMORY LOCATIONS AND IT DOESN'T IMPLEMENT RANDOM ACCESS (I).
- IF WE NEED TO ACCESS ANY OBJECT, WE NEED TO TRAVERSE ALL THE WAY FROM BEGINNING
- SO IT IS NOT PREFFERED FOR RETRIEVAL OPERATION.