9. Write a Java List example and demonstrate methods of Java List interface.

Methods_In_ArrayList.java

```java
import java.util.ArrayList;

class Methods_In_ArrayList
{
    public static void main(String[] args)
    {
        ArrayList<Integer> al1 = new ArrayList<Integer>();
        ArrayList<Integer> al2 = new ArrayList<Integer>();
//Author -> ITVoyagers, visit -> itvoyagers.in
        al1.add(1);
        al1.add(2);
        al1.add(3);
        al1.add(4);

        al2.addAll(al1); // all elements of al1 will get load in al2

        System.out.println("\n\n");
//Author -> ITVoyagers, visit -> itvoyagers.in
        for(Integer i : al2)
        {
            System.out.println("\t Elements of al2 : " + i);
        }

        System.out.println("\n\n");

// all elements of al1 starting from index 1 will get load in al2
        al2.addAll(1,al1);

        for(Integer i : al2)
        {
            System.out.println("\t Elements of al2 : " + i);
        }
//Author -> ITVoyagers, visit -> itvoyagers.in
// check whether ArryList is empty
        System.out.println("\n\n\n al2.isEmpty() : " + al2.isEmpty());
// if element is present in the list then it will return true
        System.out.println("\n al2.contains(2) : " + al2.contains(2));
// it will return the index of first occurrence of the element
        System.out.println("\n al2.indexOf(3) : " + al2.indexOf(3));
// and if element is not in the list then it will return -1
        System.out.println("\n al2.indexOf(20) : " + al2.indexOf(20));
// it will return the index of last occurrence of the element
        System.out.println("\n al2.lastIndexOf(3) : " + al2.lastIndexOf(3));
// and if element is not in the list then it will return -1
        System.out.println("\n al2.lastIndexOf(20) : " + al2.lastIndexOf(20));
// will returns the value of 7th index
        System.out.println("\n al2.get(7) : " + al2.get(7));
// check whether ArryList is empty
        System.out.println("\n al2.isEmpty() : " + al2.isEmpty());

        System.out.println("\n al2.size() : " + al2.size());
//Author -> ITVoyagers, visit -> itvoyagers.in
        for(Integer i : al2)
        {
            System.out.println("\t Elements : " + i);
        }
```

```
57  //removes the first occurrence of the specified element from al2
58          System.out.println("\n al2.remove(2) : " + al2.remove(2));
59  //Author -> ITVoyagers, visit -> itvoyagers.in
60          for(Integer i : al2)
61          {
62              System.out.println("\t Elements : " + i);
63          }
64  //Author -> ITVoyagers, visit -> itvoyagers.in
65          System.out.println("\n");
66      }
67  }
68
```

Output:

```
        Elements of al2 : 1
        Elements of al2 : 2
        Elements of al2 : 3
        Elements of al2 : 4


        Elements of al2 : 1
        Elements of al2 : 1
        Elements of al2 : 2
        Elements of al2 : 3
        Elements of al2 : 4
        Elements of al2 : 2
        Elements of al2 : 3
        Elements of al2 : 4


al2.isEmpty() : false

al2.contains(2) : true

al2.indexOf(3) : 3

al2.indexof(20) : -1

al2.lastIndexOf(3) : 6
```

```
al2.lastIndexOf(20) : -1

al2.get(7) : 4

al2.isEmpty() : false

al2.size() : 8
        Elements : 1
        Elements : 1
        Elements : 2
        Elements : 3
        Elements : 4
        Elements : 2
        Elements : 3
        Elements : 4

al2.remove(2) : 2
        Elements : 1
        Elements : 1
        Elements : 3
        Elements : 4
        Elements : 2
        Elements : 3
        Elements : 4
```