WEEK -10

Given an ArrayList, the task is to get the first and last element of the ArrayList in Java.

Input: ArrayList = [1, 2, 3, 4]

Output: First = 1, Last = 4

Input: ArrayList = [12, 23, 34, 45, 57, 67, 89]

Output: First = 12, Last = 89

Approach:

1. Get the ArrayList with elements.
2. Get the first element of ArrayList using the get(index) method by passing index = 0.
3. Get the last element of ArrayList using the get(index) method by passing index = size – 1.

```
import java.util.*;
class prog{
   public static void main(String[] args){
      Scanner s=new Scanner(System.in);
      int n=s.nextInt();
      int a[] = new int[n];
      for(int i=0;i<n;i++){
         a[i]=s.nextInt();
      }
      System.out.print("ArrayList: [");
      for(int i=0;i<n;i++){
         if(i!=n-1)
            System.out.print(a[i] + ", ");
         else
            System.out.println(a[i]+"]");
      }

      System.out.println("First : " + a[0] + ", Last : "+a[n-1]);
   }
}
```

	Test	Input	Expected	Got	
✓	1	6 30 20 40 50 10 80	ArrayList: [30, 20, 40, 50, 10, 80] First : 30, Last : 80	ArrayList: [30, 20, 40, 50, 10, 80] First : 30, Last : 80	✓
✓	2	4 5 15 25 35	ArrayList: [5, 15, 25, 35] First : 5, Last : 35	ArrayList: [5, 15, 25, 35] First : 5, Last : 35	✓

Passed all tests! ✓

The given Java program is based on the ArrayList methods and its usage. The Java program is partially filled. Your task is to fill in the incomplete statements to get the desired output.

list.set();

list.indexOf());

list.lastIndexOf())

list.contains()

list.size());

list.add();

list.remove();

The above methods are used for the below Java program.

```
import java.util.ArrayList;

import java.util.Scanner;


class prog {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);


        // Create an ArrayList of integers

        ArrayList<Integer> list = new ArrayList<>();


        // Add initial elements to the list
```

```
//System.out.println("Enter the number of elements:");
int n = sc.nextInt();

//System.out.println("Enter the elements:");
for (int i = 0; i < n; i++) {
   list.add(sc.nextInt()); // list.add() - Adds elements to the ArrayList
}

// Print the initial ArrayList
System.out.println("ArrayList: " + list);

// Set a specific element at index 1 to 100
list.set(1, 100); // list.set(index, value) - Sets element at index 1 to 100
//System.out.println("After setting element at index 1 to 100: " + list);

// Get the index of the first occurrence of 100
int firstIndex = list.indexOf(100); // list.indexOf(value) - Finds the first occurrence of 100
System.out.println("Index of 100 = " + firstIndex);

// Get the index of the last occurrence of 100
int lastIndex = list.lastIndexOf(100); // list.lastIndexOf(value) - Finds the last occurrence of 100
System.out.println("LastIndex of 100 = " + lastIndex);

// Check if the list contains 200
boolean contains200 = list.contains(200); // list.contains(value) - Checks if 200 is in the ArrayList
System.out.println( contains200);

// Get the size of the ArrayList
int size = list.size(); // list.size() - Gets the current size of the ArrayList
System.out.println("Size Of ArrayList = " + size);
```

```
        // Insert 500 at index 1
        list.add(1, 500); // list.add(index, value) - Adds 500 at index 1
        //System.out.println("After inserting 500 at index 1: " + list);

        // Remove the element at index 3
        list.remove(3); // list.remove(index) - Removes the element at index 3
        System.out.println("ArrayList: " + list);

        // Close the scanner
        sc.close();
    }
}
```

	Test	Input	Expected	Got	
✓	1	5 1 2 3 100 5	ArrayList: [1, 2, 3, 100, 5] Index of 100 = 1 LastIndex of 100 = 3 false Size Of ArrayList = 5 ArrayList: [1, 500, 100, 100, 5]	ArrayList: [1, 2, 3, 100, 5] Index of 100 = 1 LastIndex of 100 = 3 false Size Of ArrayList = 5 ArrayList: [1, 500, 100, 100, 5]	✓

Write a Java program to reverse elements in an array list.

Sample input and Output:
Red
Green
Orange
White
Black
Sample output
List before reversing :

[Red, Green, Orange, White, Black]

List after reversing :

[Black, White, Orange, Green, Red]

```
import java.util.*;
```

```
class prog {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);

        // Read the number of elements
        //System.out.print("Enter the number of elements: ");
        int n = s.nextInt();
        s.nextLine(); // Consume the newline character after the integer input

        // Initialize the array and read the elements
        String[] a = new String[n];
        //System.out.println("Enter the elements:");
        for (int i = 0; i < n; i++) {
            a[i] = s.nextLine();
        }

        // Print the list before reversing
        System.out.print("List before reversing :\n[");
        for (int i = 0; i < n; i++) {
            if (i != n - 1) {
                System.out.print(a[i] + ", ");
            } else {
                System.out.print(a[i] + "]");
            }
        }

        // Print the list after reversing
        System.out.print("\nList after reversing :\n[");
        for (int i = n - 1; i >= 0; i--) {
            if (i != 0) {
                System.out.print(a[i] + ", ");
```

```
        } else {
            System.out.print(a[i] + "]");
        }
    }

    // Close the scanner
    s.close();
  }
}
```

	Test	Input	Expected	Got	
✓	1	5 Red Green Orange White Black	List before reversing : [Red, Green, Orange, White, Black] List after reversing : [Black, White, Orange, Green, Red]	List before reversing : [Red, Green, Orange, White, Black] List after reversing : [Black, White, Orange, Green, Red]	✓
✓	2	4 CSE AIML AIDS CYBER	List before reversing : [CSE, AIML, AIDS, CYBER] List after reversing : [CYBER, AIDS, AIML, CSE]	List before reversing : [CSE, AIML, AIDS, CYBER] List after reversing : [CYBER, AIDS, AIML, CSE]	✓