**Program1**

      **package Arraylist.java;**

**import java.util.ArrayList;**

**public class Arraylist {**

**public static void main(String[] args) {**

**ArrayList <Integer> number=new ArrayList<>();**

**number.add(10);**

**number.add(20);**

**number.add(30);**

**System.*out*.println("given array:"+number);**

**System.*out*.println("size of array:"+number.size());**

**System.*out*.println("remove element:"+number.remove(1));**

**System.*out*.println("get element:"+number.get(1));**

**}**

**}**

**Output**

**given array:[10, 20, 30]**

**size of array:3**

**remove element:20**

**get element:30**

**program2**

**package ArrayList.java;**

**import java.util.ArrayList;**

**import java.util.Scanner;**

**public class Arraylist {**

**public static void main(String[] args) {**

**Scanner sc=new Scanner(System.*in*);**

**ArrayList <Object> details=new ArrayList<>();**

**details.add("vijay");**

**details.add("2000");**

**details.add("developer");**

**System.*out*.println("given array:"+details);**

**System.*out*.println("size of array:"+details.size());**

**System.*out*.println("remove element:"+details.remove(1));**

**System.*out*.println("get element:"+details.get(1));**

}

}

**output**

**given array:[vijay, 2000, developer]**

**size of array:3**

**remove element:2000**

**get element:developer**

**program3**

**package** ArrayList.java;

**import** java.util.ArrayList;

**import** java.util.Scanner;

**public** **class** Arraylist {

**public** **static** **void** main(String[] args) {

       Scanner sc = **new** Scanner(System.***in***);

       ArrayList<String> details = **new** ArrayList<>();

       // Taking input from the user

       System.***out***.print("Enter the number of elements: ");

**int** n = sc.nextInt();

       sc.nextLine(); // Consume newline

**for** (**int** i = 0; i < n; i++) {

           System.***out***.print("Enter element " + (i + 1) + ": ");

           details.add(sc.nextLine());

       }

       System.***out***.println("Given array: " + details);

       System.***out***.println("Size of array: " + details.size());

       // Removing an element

       System.***out***.print("Enter index to remove: ");

**int** removeIndex = sc.nextInt();

**if** (removeIndex >= 0 && removeIndex < details.size()) {

           System.***out***.println("Removed element: " + details.remove(removeIndex));

       } **else** {

           System.***out***.println("Invalid index! No element removed.");

       }

       // Getting an element

       System.***out***.print("Enter index to retrieve element: ");

**int** getIndex = sc.nextInt();

**if** (getIndex >= 0 && getIndex < details.size()) {

           System.***out***.println("Retrieved element: " + details.get(getIndex));

       } **else** {

           System.***out***.println("Invalid index! Cannot retrieve element.");

       }

       sc.close();

   }

}

**output**

**Enter the number of elements: 3**

**Enter element 1: 67**

**Enter element 2: 98**

**Enter element 3: 09**

**Given array: [67, 98, 09]**

**Size of array: 3**

**Enter index to remove: 67**

**Invalid index! No element removed.**

**Enter index to retrieve element: 2**

**Retrieved element: 09**