// all functions of arraylist  
  
import java.lang.reflect.Array;  
import java.util.\*;  
class c1\_array\_list\_3{  
 public static void main(String args[]){  
  
 // add function  
 List<Integer> al1 = new ArrayList<>();  
 al1.add(2);  
 al1.add(7);  
 al1.add(8);  
 al1.add(6);  
 System.*out*.println(al1);  
  
  
 // add function with index number  
 List<Integer> al2= new ArrayList<>();  
// this will give an error as index 7 does not exist  
// al2.add(7, 11);  
  
 al2.add(2);  
 al2.add(7);  
 al2.add(8);  
 al2.add(6);  
 System.*out*.println("al2 initial : " + al2);  
 // this will add 12 at index 2 and shift the next indexes by 1  
 al2.add(2, 12);  
 System.*out*.println(al2);  
  
  
 // addAll function  
 // This method is used to append all the elements  
 // from a specific collection to the end of the mentioned list,  
 // in such an order that the values are returned by the  
 // specified collection’s iterator.  
  
 List<Integer> al3 = new ArrayList<>();  
 al3.add(2);  
 al3.add(7);  
 al3.add(8);  
 al3.add(6);  
  
 List<Integer> al4 = new ArrayList<>();  
 al4.add(10);  
 al4.add(12);  
 al4.add(14);  
 al4.add(16);  
 System.*out*.println("al3 initial : " + al3);  
 System.*out*.println("al4 initial : " + al4);  
  
 al3.addAll(al4);  
 System.*out*.println("Final al3 : " + al3);  
 System.*out*.println("Final al4 : " + al4);  
  
  
  
 // addAll function with index  
 // Used to insert all of the elements starting  
 // at the specified position from a specific collection  
 // into the mentioned list  
  
 List<Integer> al5 = new ArrayList<>();  
 al5.add(2);  
 al5.add(7);  
 al5.add(8);  
 al5.add(6);  
  
 List<Integer> al6 = new ArrayList<>();  
 al6.add(10);  
 al6.add(12);  
 al6.add(14);  
 al6.add(16);  
  
 System.*out*.println("al3 initial : " + al5);  
 System.*out*.println("al4 initial : " + al6);  
  
 al5.addAll(2, al6);  
 System.*out*.println("Final al5 : " + al5);  
 System.*out*.println("Final al6 : " + al6);  
  
 // clear function  
 //This method is used to remove all the  
 // elements from any list.  
  
 List<Integer> al7 = new ArrayList();  
 al7.add(3);  
 al7.add(8);  
 System.*out*.println("al7 initial : " + al7);  
 al7.clear();  
 System.*out*.println("al7 : " + al7);  
  
  
 // get function  
 // Returns the element at the specified position in this list.  
 List<Integer> al8 = new ArrayList();  
 al8.add(45);  
 al8.add(90);  
 al8.add(56);  
 al8.add(34);  
 System.*out*.println("al8 index 2 : " + al8.get(2));  
  
 // set function  
 // Replaces the element at the  
 // specified position in this list with the s  
 // specified element.  
  
 List<Integer> al9 = new ArrayList();  
 al9.add(45);  
 al9.add(90);  
 al9.add(56);  
 al9.add(34);  
 System.*out*.println("al9 initial : " + al9);  
 al9.set(2, 9);  
 System.*out*.println("al9 final : " + al9);  
  
 // remove function  
 List<Integer> al10 = new ArrayList();  
 al10.add(45);  
 al10.add(90);  
 al10.add(56);  
 al10.add(34);  
 System.*out*.println("al10 initial : " + al10);  
 al10.remove(2);  
 System.*out*.println("al10 final : " + al10);  
  
 // remove function  
 List<Integer> al11 = new ArrayList();  
 al11.add(45);  
 al11.add(90);  
 al11.add(56);  
 al11.add(34);  
 System.*out*.println("al11 initial : " + al11);  
  
 List<Integer> al12 = new ArrayList();  
 al12.add(56);  
 al12.add(90);  
 System.*out*.println("al12 initial : " + al12);  
  
 al11.removeAll(al12);  
  
 System.*out*.println("al11 final : " + al11);  
 System.*out*.println("al12 final : " + al12);  
  
  
 // contains function  
 // Returns true if this list contains  
 // the specified element  
 List<Integer> al13 = new ArrayList();  
 al13.add(45);  
 al13.add(90);  
 al13.add(56);  
 al13.add(34);  
 System.*out*.println("Contains : " + al13.contains(90));  
  
 // isEmpty function  
 List<Integer> al14 = new ArrayList();  
 al14.add(17);  
 al14.add(19);  
 System.*out*.println("al14 initial : " + al14);  
 al14.clear();  
 System.*out*.println("al14 is empty : " + al14.isEmpty());  
  
  
  
 // toArray function  
 List<Integer> al15 = new ArrayList();  
 al15.add(45);  
 al15.add(90);  
 al15.add(56);  
 al15.add(34);  
 System.*out*.println("al11 initial : " + al11);  
  
 Integer[] i1 = new Integer[al15.size()];  
 i1 = al15.toArray(i1);  
 System.*out*.print("al15 to i1 array : ");  
 for(int i = 0; i < i1.length; i++){  
 System.*out*.print(i1[i] + " ");  
 }  
 System.*out*.println();  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
 }  
}