SBA 8

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SBA - 8

1. program to take input of two integer arrays from the user and to find the sum of both the arrays.
Sort the elements of the resultant array in ascending order using selection sort.

SelectionSum.java

```java
/*Program to take input of two integer arrays from the user and to find the sum of both the arrays.
Sort the elements of the resultant array in ascending order using selection sort. */
import java.io.*;
import java.util.*;
class SelectionSum
{
  public static void main(String[] args)
  {
    Scanner sc = new Scanner(System.in);
    int n,i,j,t=0;
    System.out.println("Enter the number of elements in the array");
    n = sc.nextInt();
    System.out.println("Enter elements into the first array");
    int[] arr1 = new int[n];
    for(i=0;i<n;i++)
    {
      arr1[i] = sc.nextInt();
    }
    System.out.println("Enter elements into the second array");
    int[] arr2 = new int[n];
    for(i=0;i<n;i++)
    {
      arr2[i] = sc.nextInt();
    }
    int[] arr3 = new int[n];
    for(i=0;i<n;i++)
    {
      arr3[i] = arr1[i]+arr2[i];
    }
    System.out.println("Sum of both the arrays");
    for(i=0;i<n;i++)
    {
      System.out.print(arr3[i]+" ");
    }
```

SelectionSum.java

```java
      arr2[i] = sc.nextInt();
    }
    int[] arr3 = new int[n];
    for(i=0;i<n;i++)
    {
      arr3[i] = arr1[i]+arr2[i];
    }
    System.out.println("Sum of both the arrays");
    for(i=0;i<n;i++)
    {
      System.out.print(arr3[i]+" ");
    }
    System.out.println();
    System.out.println("The resultant array after sorting: ");

    for(i=0;i<n;i++)
    {
      for(j=i+1;j<n;j++)
      {
        if(arr3[i]>arr3[j])
        {
          t=arr3[i];
          arr3[i]=arr3[j];
          arr3[j]=t;
        }
      }
    }
    for(i=0;i<n;i++)
    {
      System.out.print(arr3[i]+"  ");
    }
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs\day11\evening> javac SelectionSum.java
PS C:\Users\Lab\Desktop\java programs\day11\evening> java SelectionSum
Enter the number of elements in the array
4
Enter elements into the first array
2
4
5
3
Enter elements into the second array
8
9
2
1
Sum of both the arrays
10 13 7 4
The resultant array after sorting:
4  7  10  13
PS C:\Users\Lab\Desktop\java programs\day11\evening>
```

2. program to take input of Two arrays and store the similar elements into the resultant array.
sort the resultant array in ascending order using bubble sort.
NOTE: there must at least be 6 similar elements.
similar elements= the elements occurring in both the arrays.

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SimilarBubble.java

```java
/*program to take input of Two arrays and store the similar elements into the resultant array.
 sort the resultant array in ascending order using bubble sort.
NOTE: there must atleast be 6 similar elements.
similar elements= the elements occurring in both the arrays. */
import java.io.*;
import java.util.*;
class SimilarBubble
{
  public static void main(String[] args)
  {
    Scanner sc = new Scanner(System.in);
    int n,i,j,t=0;
    System.out.println("Enter the number of elements in the array");
    n = sc.nextInt();
    System.out.println("Enter elements into the first array");
    int[] arr1 = new int[n];
    for(i=0;i<n;i++)
    {
      arr1[i] = sc.nextInt();
    }
    System.out.println("Enter elements into the second array");
    int[] arr2 = new int[n];
    for(i=0;i<n;i++)
    {
      arr2[i] = sc.nextInt();
    }
    ArrayList<Integer> arr3 = new ArrayList<Integer>();
    for(i=0;i<n;i++)
    {
      for(j=0;j<n;j++)
      {
        if(arr1[i]==arr2[j])
        {
          arr3.add(arr1[i]);
          break;
        }
      }
    }
    System.out.println();
    System.out.println("The resultant array before Sorting");
    /*for(int f:arr3)
      {
        System.out.print(f+" ");
      }*/
    System.out.println();
    int len = arr3.size();
    Integer[] result = new Integer[len];
    result = arr3.toArray(result);
    System.out.println(Arrays.toString(result));
    for(i=0;i<len-1;i++)
    {
      for(j=0;j<len-i-1;j++)
      {
        if(result[j]>result[j+1])
        {
          t=result[j];
          result[j]=result[j+1];
          result[j+1]=t;
        }
      }
    }
    System.out.println("After sorting in Ascending order");
    System.out.println(Arrays.toString(result));
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs\day11\evening> javac SimilarBubble.java
PS C:\Users\Lab\Desktop\java programs\day11\evening> java SimilarBubble
Enter the number of elements in the array
4
Enter elements into the first array
2
4
6
8
Enter elements into the second array
1
2
8
5

The resultant array before Sorting

[2, 8]
After sorting in Ascending order
[2, 8]
PS C:\Users\Lab\Desktop\java programs\day11\evening>
```

3.program to take input two arrays and store the dissimilar elements into a resultant array.
sort the resultant array in a descending order using bubble sort.
dissimilar elements= the elements not occurring in both the arrays.(unique elements)

```java
/*program to take input two arrays and store the dissimilar elements into a resultant array.
sort the resultant array in a descending order using bubble sort.
dissimilar elements= the elements not occurring in both the arrays.(unique elements) */
import java.io.*;
import java.util.*;
class DissimilarBubble
{
  public static void main(String[] args)
  {
    Scanner sc = new Scanner(System.in);
    int n,i,j,t=0;
    System.out.println("Enter the number of elements in the array");
    n = sc.nextInt();

    System.out.println("Enter elements into the first array");
    int[] arr1 = new int[n];
    for(i=0;i<n;i++)
    {
      arr1[i] = sc.nextInt();
    }

    System.out.println("Enter elements into the second array");
    int[] arr2 = new int[n];
    for(i=0;i<n;i++)
    {
      arr2[i] = sc.nextInt();
    }

    TreeSet<Integer> set = new TreeSet<>();
    for (int f:arr1)
    {
        set.add(f);
    }
    for (int k:arr2)
    {
        set.add(k);
    }
    System.out.println();

    System.out.println("The resultant array before Sorting");
    int len = set.size();
    Integer[] result = new Integer[len];
    result = set.toArray(result);
    System.out.println(Arrays.toString(result));
    for(i=0;i<len-1;i++)
    {
      for(j=0;j<len-i-1;j++)
      {
        if(result[j]<result[j+1])
        {
          t=result[j];
          result[j]=result[j+1];
          result[j+1]=t;
        }
      }
    }
    System.out.println("After sorting in Descending order");

    System.out.println(Arrays.toString(result));
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs\day11\evening> javac DissimilarBubble.java
PS C:\Users\Lab\Desktop\java programs\day11\evening> java DissimilarBubble
Enter the number of elements in the array
4
Enter elements into the first array
2
3
4
5
Enter elements into the second array
8
7
3
2

The resultant array before Sorting
[2, 3, 4, 5, 7, 8]
After sorting in Descending order
[8, 7, 5, 4, 3, 2]
PS C:\Users\Lab\Desktop\java programs\day11\evening>
```

4. Implement Array List and add, remove, elements in the Array List and perform sorting of the elements.

```java
import java.util.ArrayList;
import java.util.Collections;
import java.util.Iterator;

public class ArrayListIter {
  public static void main(String[] args)
  {
    ArrayList<String>list=new ArrayList<String>();
    list.add("Volkswagen");
    list.add("Toyota");
    list.add("Audi");
    list.add("Mercedez");
    list.add("BMW");
    list.add("Hyundai");
    System.out.println("The elements in ArrayLists are: "+list);
    list.remove(5);
    System.out.println("The contents of list after removing the element at 5th position is: "+list);


     Iterator<String> it = list.iterator();


        while(it.hasNext()) {
            System.out.println(it.next());
          }
        Collections.sort(list);
        System.out.println(list);
      }
  }
```

```
PS C:\Users\Lab\Desktop\java programs\day14> javac ArrayListIter.java
PS C:\Users\Lab\Desktop\java programs\day14> java ArrayListIter
The elements in ArrayLists are: [Volkswagen, Toyota, Audi, Mercedez, BMW, Hyundai]
The contents of list after removing the element at 5th position is: [Volkswagen, Toyota, Audi, Mercedez, BMW]
Volkswagen
Toyota
Audi
Mercedez
BMW
[Audi, BMW, Mercedez, Toyota, Volkswagen]
```

5. Implement LinkedList and add, remove, elements in the LinkedList and perform sorting of the elements.

```java
import java.util.Collections;
import java.util.Iterator;
import java.util.LinkedList;

public class LinkedIter {
  public static void main(String[] args)
  {
    LinkedList<String>list=new LinkedList<String>();
    list.add("Red");
    list.add("Italy");
    list.add("Blue");
    list.add("London");
    list.add("Paris");
    System.out.println("Linkedlist: "+list);
    list.remove(2);
    System.out.println("Linkedlist after deletion: "+list);



     Iterator<String> it = list.iterator();


        while(it.hasNext()) {
            System.out.println(it.next());
          }
        Collections.sort(list);
        System.out.println(list);
  }

}
```

```
PS C:\Users\Lab\Desktop\java programs\day14> javac LinkedIter.java
PS C:\Users\Lab\Desktop\java programs\day14> java LinkedIter
Linkedlist: [Red, Italy, Blue, London, Paris]
Linkedlist after deletion: [Red, Italy, London, Paris]
Red
Italy
London
Paris
[Italy, London, Paris, Red]
PS C:\Users\Lab\Desktop\java programs\day14>
```