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| **AP Computer Science** | **Lab18b Assignment** |
| **The "Merging 2 Lists into 1" Program** | **100 Point Version Only** |
| **Assignment Purpose:**  Students will demonstrate knowledge of algorithms. | |

Write a program that will take 2 existing sorted arrays, and *merge* them together into a single sorted array.

The provided file has an **Array** class.

The program has 3 **Array** objects. Each of the first 2 already contains a sorted **ArrayList** of integers. These objects are passed to the **merge** method of the third **Array** object. This method will *merge* the 2 **ArrayList**s together into the **ArrayList** for **this** (hint) third object.

You essentially need to write the **merge** method to make this program work.

This is not a full-fledged *merge sort* because you are not sorting a list of random data. You are merely merging 2 sorted lists into 1.

The file, **Lab18bvst.java** is too large to fit on the next page. Please see your downloaded file.

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| **Lab18bvst.java** | **Do not copy this file, which is provided.** |
| // Lab18bvst.java  // Merging 2 Lists Into 1  // This is the student, starting version of the TextLab12 assignment.  import java.util.ArrayList;  public class Lab18bvst  {  public static void main(String[] args)  {  int[] jsaList1 = {101, 105, 115, 125, 145, 165, 175, 185, 195, 225, 235, 275, 305, 315, 325, 335, 345, 355, 375, 385};  int[] jsaList2 = {110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 270, 280, 320, 350, 400};  Array list1 = new Array(jsaList1,"List #1");  Array list2 = new Array(jsaList2,"List #2");  Array list3 = new Array("Merged List");  list3.merge(list1,list2);  list1.display();  list2.display();  list3.display();  }  }  class Array  {  private ArrayList<Integer> list;  private int size;  private String listName;  public Array(String ln)  {  list = new ArrayList<Integer>();  size = 0;  listName = ln;  }  public Array(int[] jsArray, String ln)  {  list = new ArrayList<Integer>();  size = jsArray.length;  listName = ln;  for (int j = 0; j < size; j++)  list.add( new Integer( jsArray[j] ));  }  public void display()  {  System.out.println("\n" + listName + ":\n");  System.out.println(list + "\n");  }  public void merge(Array that, Array theOther)  {  }  } | |

**100-Point Version Output**

