Part I = Display Merged Array

Part II = Guessing Game

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CSIS 1275 - 001
Assignment 3

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Assign3.java

```
 class Assign3W2018PT1
{

/**
 * merge computerTerms[] and terms[] arrays into a third String
array called merged[] .
 * @param computerTerms
 * @param terms
 * @return
 */
 public String[] merged(String[] computerTerms, String[] terms)
   {
     String[] merged = new String[anySize(computerTerms,terms)];
      int index = 0;

      for(int i = 0; i < terms.length; i++)
      {
         if(binSrch(computerTerms, terms[i]) == -1)
         {
            merged[index] = terms[i];
            index++;
         }

      }
      for(int j = 0; j < computerTerms.length; j++)
      {
         merged[index] = computerTerms[j];
         index++;
      }

      return merged;
   }
```

```
     /**
    * perform a binary search to indicate if the string items in
the terms[] already exists or not in the computerTerms[] array
    * @param computerTerms
    * @param terms
    * @return
    */
   public int binSrch(String[] computerTerms, String terms)
   {
      int first = 0;
      int end = computerTerms.length - 1;
      int mid = -1;
      boolean found = false;

      while(first <= end)
      {
         mid = (first + end) / 2;

       if(computerTerms[mid].compareToIgnoreCase(terms) == 0)
       {
          found = true;
          break;
       }
      else
          if(computerTerms[mid].compareToIgnoreCase(terms) < 0)
          {
            first = mid + 1;
          }
      else
          {
          end = mid - 1;
          }
      }
      if(!found)
         mid = -1;

      return mid;
   }
   /**
    * this method sorts the new  "merged []" array in ascending
order.
    * @param arrMerged
    */
   public void sortArrayAsc(String[] arrMerged)
   {

      String sortAr = "";

      for(int count = 1; count < arrMerged.length; count++)
      {
        for(int i = 0; i < (arrMerged.length - count); i++)
        {
        if(arrMerged[i].compareToIgnoreCase(arrMerged[i+1]) > 0)
            {
               sortAr = arrMerged[i];
               arrMerged[i] = arrMerged[i+1];
               arrMerged[i+1] = sortAr;
            }
         }
      }
   }
   /**
    * the arrays work for any sized arrays.
    * @param computerTerms
    * @param terms
    * @return
    */
   public int anySize(String[] computerTerms, String[] terms)
   {
      int size = 0;

      for(int i = 0; i < terms.length; i++)
      {
         if(binSrch(computerTerms, terms[i]) != -1)
         {
            size++;
         }
      }
      return computerTerms.length + terms.length - size;
   }
   /**
    * take a String array as a parameter, and display the
content of the array.
    * @param computerTerms
    * @param terms
    */
public void displayArray(String[] computerTerms, String[] terms)
   {

    for(int i = 0; i < computerTerms.length && i < terms.length;
i++)
      {
         computerTerms[i] =
computerTerms[i].replaceAll("\\s","");
         terms[i] = terms[i].replaceAll("\\s","");
      }

       String[] arrMerged = merged(computerTerms,terms);

       System.out.println("\nMerged - BEFORE
sort:\n=====================");

      for(int i = 0; i < arrMerged.length; i++)
      {
         System.out.println(arrMerged[i]);
      }

      System.out.println("\nMerged - AFTER
sort:\n=====================");

      sortArrayAsc(arrMerged);

      for(int i = 0; i < arrMerged.length; i++)
      {
         System.out.println(arrMerged[i]);
      }
   }
   /**
    * invoke the method to display the arrays.
    * @param args
    */
   public static void main(String args[])
   {
     String computerTerms[] = 
{"algorithm","byTe","Heuristic","instantiate","whetstone"};
     String terms[] = {"InliNe  ","instAntiate  ","   STrinG"," 
BYte"};

     Assign3W2018PT1 disp = new Assign3W2018PT1();
     disp.displayArray(computerTerms,terms);
   }
}
```

```
import java.util.Arrays;
import java.util.Scanner;


public class Assign3W2018PT2

{

     private static Scanner stdin;

     /**
      * take a String array as a parameter, and display the
content of the array
      * @param computerTerms
      */
     public static void displayArray(String[] computerTerms)
     {

          stdin = new Scanner(System.in);
          String ans;

          do {

                stdin = new Scanner(System.in);
                char[] first;
                char[] word;
                int correct;
                int index;
                char input;

                System.out.println("\n\nFabio Dias: Guessing
Game" + "\n" + "===========================");

                index = intRandom(0, computerTerms.length - 1);
                word = computerTerms[index].toCharArray();

                first = new char[word.length];
                Arrays.fill(first,'*');
                first[0] = word[0];
```

```
               correct = 0;


                for(int i = 1; i < word.length; i++)
                {
                        if(word[0] == word[i])
                        {
                     first[i] = word[i];
                        }
                }

                int num = correctGuessed(first);
                while(correct != (word.length - num))
                 {

                        System.out.println(first);
                        System.out.print("Enter a letter: ");
                        System.out.println("");

                        input = stdin.next().charAt(0);
                        for (int j = 1; j < word.length; j++)
                        {

                        if(input == word[j])
                        {
                           if(first[j] == '*')
                           {
                              first[j] = word[j];
                              correct++;
                           }
                           else
                           {
                                  System.out.println("You have
already tried " + '"' +  input + '"' + " before!\n");
                           }
                        }
                      }
                 }
```

```
                       System.out.println("\nThe word is " +
computerTerms[index] + "!");
                       System.out.println("You've guessed " +
correct + " correct letters.\n");
               System.out.print("Guess another word? (y/n)");
                       ans = stdin.next();
                 }
                 while (ans.charAt(0) != 'n');
     }

     /**
      * determine how many letters have been guessed correctly
      */
     public static int correctGuessed(char[] first)
     {
          int count = 0;
          for(int i = 0; i < first.length; i++)
          {
               if(first[i] != '*')
            count++;
          }
          return count;
     }

     /**
      * invoke the method to display the array
      * @param args
      */
     public static void main(String[] args)
     {

          String[] computerTerms = { "algorithm", "byTe",
"Heuristic","instantiate","whetstone" };
          displayArray(computerTerms);

     }
     /**
      * randomly return an integer that indicates the index of 
the word to guess for the user
      * @param lowerLetter
      * @param upperLetter
      * @return
      */
     public static int intRandom(int lowerLetter, int 
upperLetter)
     {
          return (int) (lowerLetter + Math.random() * 
(upperLetter - lowerLetter + 1));
     }

}
```