Homework Turnin

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Section:	AS
Course:	CSE 142 19au
Assignment:	a7
Receipt ID:	518dc85ef69a34b6e0a7b78cf38a05a4

Turnin Successful!

The following file(s) were received:

Personality.java (5489 bytes, sha256: 6874f79efafc7926d9bc9c724d66358b)

```
 1. // Xuqing Wu
 2. // 11/19/2019
 3. // CSE142
 4. // TA: Ethan M Knutson
 5. // Assignment #7
 6. //
 7. // This program will read the file of personality data that user
 8. // types in and then sort these data by names and types. The programe
 9. // will finally create an output file with all these information.
10.
11. import java.util.*;
12. import java.io.*;
13.
14. public class Personality{
15.    public static final int NUMBER = 4;
16.    public static void main(String[] args) throws FileNotFoundException{
17.       Scanner console = new Scanner(System.in);
18.       introduction();
19.       File inputFile = inputFile(console);
20.       Scanner input = new Scanner(inputFile);
21.       PrintStream outputFile = outputFile(console);
22.       while(input.hasNextLine()){
23.          String name = input.nextLine();
24.          String choiceTotal = input.nextLine();
25.          String[] splited = splitParts(choiceTotal);
26.          int[] percentage = countsOfAB(splited);
27.          String[] type = classification(percentage);
28.          printResult(outputFile, name, percentage, type);
29.       }
30.    }
31.
32.    //This method prints out the introduction of this program to the user
33.    public static void introduction(){
34.       System.out.println("This program processes a file of answers to the");
35.       System.out.println("Keirsey Temperament Sorter.  It converts the");
36.       System.out.println("various A and B answers for each person into");
37.       System.out.println("a sequence of B-percentages and then into a");
38.       System.out.println("four-letter personality type.");
39.       System.out.println();
40.    }
41.
42.    //This method asks the input file name from user
43.    //it then returns the input file
```

```java
   //Scanner console - to ask the input file name from user
   public static File inputFile(Scanner console) throws FileNotFoundException{
      System.out.print("input file name? ");
      File inputFile = new File(console.nextLine());
      return inputFile;
   }

   //This method asks the output file name from user
   //it then creates the output file and return it
   //Scanner console - to ask the output file name from user
   public static PrintStream outputFile(Scanner console) throws FileNotFoundException{
      System.out.print("output file name? ");
      String outputFileName = console.nextLine();
      PrintStream outputFile = new PrintStream(new File(outputFileName));
      return outputFile;
   }

   //this method split the 70 characters into one array with 4 elements
   //it then returns the array
   //String line - the single row after name line we get from main
   public static String[] splitParts(String line){
      String[] fourParts = new String[NUMBER];
      for(int i=0; i<10; i++){
         fourParts[0] += line.substring(0,1);
         fourParts[1] += line.substring(1,3);
         fourParts[2] += line.substring(3,5);
         fourParts[3] += line.substring(5,7);
         if(i<=8){
            line = line.substring(7);
         }
      }
      return fourParts;
   }

   //This method calculate the percentage of B
   //it creates three arrays, each with 4 elements
   //then for each type of personality, it calculates the percentage
   //it returns the percentage
   //String[] splited - the array with 4 elements(choices for each type of personality)
   public static int[] countsOfAB(String[] splited){
      int[] numberOfA = new int[NUMBER];
      int[] numberOfB = new int[NUMBER];
      int[] percentage = new int[NUMBER];
      for(int i=0; i<NUMBER; i++){
         String choice = splited[i];
         for(int j=0; j<choice.length(); j++){
            char choiceSingle = choice.charAt(j);
            if(choiceSingle==('A')||choiceSingle==('a')){
               numberOfA[i]++;
            }
            else if(choiceSingle==('B')||choiceSingle==('b')){
               numberOfB[i]++;
            }
         }
         double percent = 100.0*numberOfB[i]/(numberOfB[i]+numberOfA[i]);
         percentage[i] = (int)Math.round(percent);
      }
      return percentage;
   }

   //This method determines the type of personality of each person
   //it returns the personality as an array of string
   //int[] percentage - the percentage of B choices in each personality type
   public static String[] classification(int[] percentage){
      String[] type = {"I","N","F","P"};
      for(int i=0; i<NUMBER; i++){
         if(percentage[i]<50){
            if(type[i].equals("I")){
               type[i]="E";
            }
            if(type[i].equals("N")){
               type[i]="S";
            }
            if(type[i].equals("F")){
               type[i]="T";
            }
```

```
120.             else if(type[i].equals("P")){
121.                type[i]="J";
122.             }
123.          }
124.          else if(percentage[i]==50){
125.             type[i]="X";
126.          }
127.       }
128.       return type;
129.    }
130.
131.    //This method prints the name, percantage, and personality to the output file
132.    //PrintStream outputFile - to print result to output file
133.    //String name - the name of the person we get from main
134.    //int[] percentage - the percentage of B for each personality type
135.    //String[] type - an array of the type of personality
136.    public static void printResult(PrintStream outputFile, String name,
137.    int[] percentage, String[] type){
138.       String typeFinal = type[0]+type[1]+type[2]+type[3];
139.       outputFile.print(name + ": ");
140.       outputFile.print(Arrays.toString(percentage));
141.       outputFile.print(" = " + typeFinal);
142.       outputFile.println();
143.    }
144. }
```