Lab 17: Parallel Arrays **Due:** 11/22/24

In this lab you will practice working with parallel arrays. Parallel arrays are two or more arrays whose corresponding components hold related information.

Example Program

Because of Halloween, a lot of candy is sold in the month of October. Your example program asks the user to enter the names of different candies, along with the unit price and number sold. The program then calculates the total sales of each candy and the average of the total sales. Then it prints the average, along with the information about the candies that have lower than average sales.

This program uses four parallel arrays. The arrays hold the names of the candy, the unit Price of the candy, the quantity sold, and the total sales for each candy. In order to store or access the information for one type of candy, we use the corresponding component in each of the arrays.

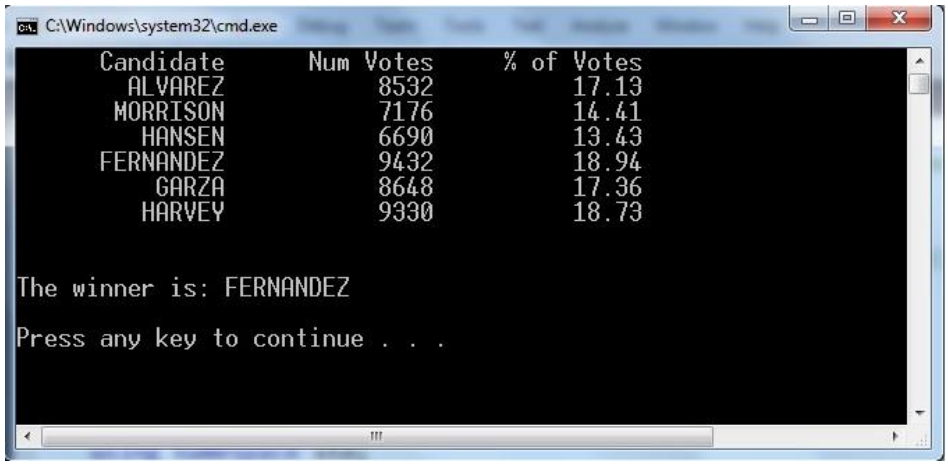
The **candy.cpp** program provided illustrates the skills you are learning in this lab. Open it in your IDE, read and understand the code and finally run the program with different inputs to see how it works. Pay close attention to how I access the information for each type of candy using the parallel arrays.

Your Program

For your program, you will complete code that finds the winner of an election. The program gets the names of the candidates and the number of votes each candidate received from file **votingresults.txt**. It then calculates the total number of votes and prints out the percentage of votes each candidate received. Finally, the program reports which candidate won the election.

You need to write code in the main function, and complete two other functions. Refer back to the example programs about arrays discussed in my lectures to see how to get the input data, find the index of the maximum value in the array, other things you need to do for this assignment.

Use the provided program **lab17.cpp** to get you started. Open it in your IDE and complete the program. Your program output should look similar to the picture below.



I am posting my sample run for your reference. Please run your program to ensure that you tested it. Make sure it behaves like mine.

Don't forget to include at the top of the program the comments shown below with your information (name, class and section number, etc.)

```
//////////////////////////////////////////////////////////////////
//
// Name: <Put your name here>
// Date: <Today's date>
// Class: <Your class number and section number, like: CSCI 1470.02>
// Semester: <This semester, like: Fall 2012>
// CSCI/CMPE 1470 Instructor: <Your lecture instructor's name>
//
// Program Description: Enter here your description of what the program does
//
//////////////////////////////////////////////////////////////////
```

When done, submit your solution through Blackboard using the "Assignments" tool. Do Not email it.

Paste the link to your final solution along with your source code in the textbox opened when you click on Create Submission before you click on Submit.

The following is the basic criteria to be used to grade your submission:

You start with 100 points and then lose points as you don't do something that is required.

main Function
-10: Doesn't properly call function getElectionData()
-10: Doesn't properly call function sumList()
-10: Doesn't properly call function printResults()
sumList Function
-5: Doesn't properly loop through array
-10: Doesn't properly return correct sum
indexOfMax Function
-5: Doesn't properly loop through array
-10: Doesn't properly return **index of element** holding the maximum value
getElectionData Function
-10: Doesn't properly get from file data for candidates
-5: Doesn't properly return number of rows processed in the file
printResults Function
-10: Doesn't properly print each candidate's name, #votes, and % of votes
-10: Doesn't properly print winner (using indexOfMax function)
-10: Doesn't properly call function indexOfMax()
-5: Incorrect output format
-50: Program doesn't compile
-40: Program doesn't run correctly
-20: does not pass all tests

-20: program does not implement the provided algorithm
-20: Incorrect/missing source code or incorrect/missing link to your solution
-100: The code submitted is not your creation (you got it from a web site or another person)
-10: Late

Note: more points may be lost for reasons not specified here.