Lab Document and Questions
Name: _____

Lab #9, 10/31/2013
WFU Username: _____

CSC 111E: Lab #9 – Arrays

Lab Date: Thursday, 10/31/2013 Due Date: Friday, 11/1/2013 @ 5:00pm

Purpose: The purpose of this lab is to have you gain additional experience with making use of files in your programs and to be introduced to using arrays in solving problems.

Program 1: Mean and Max
Make sure to read this entire description before starting any work problem solving and programming.

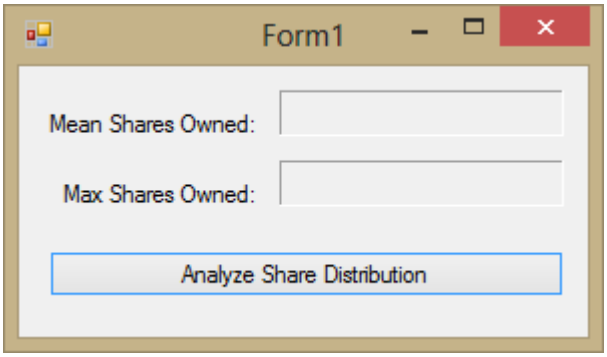
You will be given a file which contains the number of shares of stock held by the shareholders in a company. The file just has shares of stocks (no names, etc). The file is formatted as below:

# of shareholders
Shareholder #1 shares
Shareholder #2 shares
Shareholder #3 shares (continued as needed on more lines)

Your task is to determine the mean and max # of shares held. While you could do this while just reading in the file, please do the following instead to get experience with arrays.

- Open the file
- Read in the number of shareholders
- Create an appropriately sized array (sized to the number of shareholders)
- Read in the # of shares data into the array, one line at a time into each spot in the array
- Close the file
- Do your mean analysis by visiting all the entries in the array in a separate loop from your file reading
- Do your max analysis by visiting all the entries in the array

You should print to the output GUI the mean and maximum number of shares as shown.



The shell of a program and a data file have been created for you in *Lab9Program1.zip* available in Sakai. Below is the file will be working with, which has the name “sharedistribution.txt”, with mean of 400 shares and max of 1000 shares.

6
100
250
1000
350
300
400

Program 2: Search

Make sure to read this entire description before starting any work problem solving and programming.

You have a client database (a list of people who have bought from your company). You are given a "potential contacts" list. You would like to compare the two files to see how many of the people on your new "potential contacts" list are already in your database.

You will be given two files, one of the client database and one for the potential contacts list. They both have the same format:

# of entries
Name
Name
Name
…

As an example, the client database may be:

3
Nicole Kidman
Tom Cruise
Katy Perry

And the potential contacts list may be:

2
John Doe
Tom Cruise

Your task is do the following: When the user presses the "Analyze Files" button in the GUI,

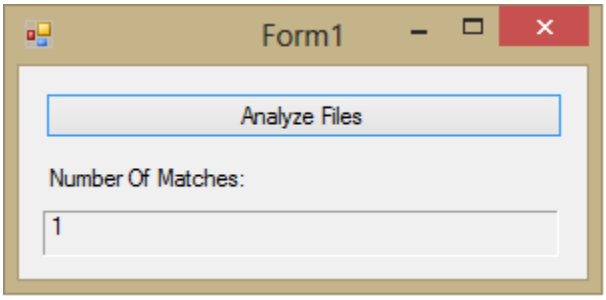
Initialize a count of matches between the two files to value 0

Open the client database file
Read in the number of clients
Create an appropriately sized array (sized to the number of clients)
Read in the names of the clients, one line at a time into each spot in the array
Close the client database file

Open the potential contacts list
Read in the number of potential contacts
For each contact in the list, search through the array of clients to see if you can find a name that matches. If you find a match, add 1 to the count of matches. This process requires a loop within a loop (one loop reads the contacts out of the file; the other handles, for each contact, looking through the array of client names)
Close the contact list

Print the number of matches to the appropriate label in the GUI.

An example GUI with the appropriate output for the above two example files shown at right. The number of matches is 1 (Tom Cruise is in both files). The shell of a program and the two example data files (a client database "clientdatabase.txt" and a potential contacts list "contacts.txt") have been created for you in *Lab9Program2.zip* which is available in Sakai.



Submission

To submit this lab for grading, do the following by Friday, 11/1, at 5:00pm:

- Zip each of the projects separately.
- Upload the projects into Sakai under the Assignments, Lab9 link.

Your grade will be based on the following rubric:

Objective	Points Available	Points Earned
Program 1: Correctly opens and closes file	7	
Program 1: Reads entire file using appropriate mechanism	7	
Program 1: Stores data correctly in appropriately sized array	12	
Program 1: Correctly computes mean of data from array	12	
Program 1: Correctly computes max of data from array	12	
Program 1: Correctly shows results in GUI	6	
Program 2: Correctly opens and closes both files	7	
Program 2: Reads entire files using appropriate mechanism	7	
Program 2: Stores client data correctly in appropriately sized array	12	
Program 2: Correctly searches through client data to see if new contact is listed in client list	12	
Program 2: Correctly shows results in GUI	6	