Homework 08

CS-102

Homework 08A

- Modify the selectionSort function presented in chapter 8 so it sorts an array of strings instead of an array of ints.
- You'll also want to modify the showArray function to accommodate strings.
- Test the function with a driver program.
  - Use Program 8-8, shown below, as a skeleton to complete.
  - Be sure to place your name at the top to indicate whose String Sorter this is.
  - Call your program ***YourName*-Hwrk8A.cpp** .

Homework 08A

```
//  Program 8-8:
#include <iostream>
#include <string>
using namespace std;

int main()
{
    // Define an array with unsorted values
    const int SIZE = 20;
    string names[SIZE] =    {"Collins, Bill", "Smith, Bart", "Allen, Jim",
                             "Griffin, Jim", "Stamey, Marty", "Rose, Geri",
                             "Taylor, Terri", "Johnson, Jill",
                             "Allison, Jeff", "Looney, Joe", "Wolfe, Bill",
                             "James, Jean", "Weaver, Jim", "Pore, Bob",
                             "Rutherford, Greg", "Javens, Renee",
                             "Harrison, Rose", "Setzer, Cathy",
                             "Pike, Gordon", "Holland, Beth"};
     // Insert your code to complete this program
     return 0;
}
```

Homework 08B
Find the Median

- You are given a file with a list of grades. You are asked to find the Median grade for the class.
- **Definition of Median:**
  - If an array of numbers is sorted in ascending order, then the median number would be the number in the middle.
  - For example, given the numbers: {92, 13, 54, 72, 87}, the median number would be 72.
  - This is easier to see if you arrange the numbers in ascending order:
  - {13, 54, **72**, 87, 92} .
  - As you can see, when arranged in order, the number 72 is clearly in the middle.

Homework 08B
Definition of Median Cont.

- If the number of numbers is even (not odd as shown above), then the average of the two numbers in the middle defines the Median.
  - For example, suppose we had six numbers, instead of 5.
  - Arranging them in order we might see: {13, 54, 72, 74, 87, 92}.
  - In this case, both 72 and 74 are in the middle.
  - The average of these two number is 73.
  - Therefore, the Median of these 6 numbers is 73.

Homework 08B
Find the Median

- You will be given two files, GradeListO.txt and GradeListE.txt.
- Write a program that will determine the median grade in GradeList for either of these two cases
  - (one has an Odd number of grades and the other has an Even number of grades).
  - Your program should allow the user to choose which of the two files should be selected for this computation.
  - You may use either a Bubble Sort or a Selection Sort in implementing this program.
  - Likewise, you may use either arrays or vectors to in doing this computation.
  - Be sure to identify whose Median Calculator this is (i.e. your name in the title).
  - Call your program: ***YourName*-Hwrk8B.cpp** .