CSC 382 – Spring 2019: Lab 05

Due: 03/05/2019 by 11:59 PM
Upload source files to Canvas.

Read all of the directions **carefully**. Code that does not compile will receive zero credit. This lab has only one part.

1 Overview

For this program, you will be writing a few utility functions. Your program should read a file called "numbers.dat" that contains a collection of integers, each on a line by itself. You may assume that the file contains no more than 100 integers. Your program must store the integers read from the file into an array.

Your program should use the following functions to display information about the integers read from the file (only the prototypes are provided here, you must provide the bodies):

1. `int findMax(int[], int);` – Finds and returns a maximum number in the array.
2. `int findMin(int[], int);` – Finds and returns a minimum number in the array.
3. `double average(int[], int);` – Computes and returns the average of the integers in the given array.
4. `void mySort(int[], int);` – Sorts the array. You may use any sorting algorithm you wish to implement.
5. `void reduce(int[], int);` – Reduces each element in the array modulo 2, that is, each element is replaced with its value mod 2.

Each function contains a parameter for an array (which is automatically passed by reference) and a parameter indicating the length of the array.

Your program must then call the above functions and display their results to stdout. Below is an example run of the program:

```
Numbers read: 9, 15, 3, 12, 21

The maximum number is: 21
The minimum number is: 3
The average is: 12.0
The numbers sorted: 3, 9, 12, 15, 21
The numbers reduced mod 2: 1, 1, 1, 0, 1
```

2 Submission

Please upload your c++ files to Canvas.