CSC1300: LAB 13

CONCEPTS:

- Pointers
- Arrays
- Functions
- Separate files

NETFLIX

Image copied from http://www.iconarchive.com/show/flatwoken-icons-by-alecive/Apps-Netflix-icon.html (modified by Crockett)

DESCRIPTION / SPECIFICATIONS

You are working on a research project studying if Netflix interferes with student's performance in college. You decide to write a program that will gather statistical data about the number of hours college students spend watching streaming videos on Netflix in one month.

FUNCTIONS

Below you will find details of what should happen in each function. Make sure to follow the specifications!

The main function should be defined in `netflix.cpp` and all other programmer-defined functions should be defined in `functions.cpp`. All #include files, using namespace std;, and function prototypes should be in `netflix.h`.

At the top of both Netflix.cpp and functions.cpp you should have an include that looks like this:
                    #include "netflix.h"

IN ALL FUNCTIONS USE POINTER NOTATION INSTEAD OF ARRAY NOTATION!!

FUNCTION: MAIN

1. Ask the user how many students were surveyed.

2. Call a function called **makeArray** to define an array of integers with the number of elements equal to the number of students surveyed.

3. Call a function called **getStudentData** to allow the user to enter the number of hours each student spent watching Netflix into the array.

4. Call a function called **getAverage** to calculate and display the average of the hours entered.

5. Call a function called **selectionSort** to sort the hours in ascending order. This function is provided for you.

6. Call a function called **printArray** to print out the hours in the array.

7. Call a function called **getMedian** to calculate and display the median of the hours entered.

8. Print out a tab and then the header "NETFLIX STATISTICS" in all capital letters, then skip down to the next line and then print out the average & median.
   a. The labels "Average:" and "Median:" should all have a colon ":" after the word and have a field width of 9.
   b. The value for average & median should have two numbers after the decimal point. Mean should not have a decimal point because the value should reflect the number of hours a student watched streaming videos.
   c. The labels and the values should all be left aligned.

FUNCTION: MAKEARRAY

Define an array of integers with the number of elements equal to the number of students surveyed. The function will accept as arguments the following: An integer that indicates the number of elements in the array.

The array should be dynamically allocated.

FUNCTION: GETSTUDENTDATA

Allow the user to enter the number of hours each student watched Netflix into the array. The function will accept as arguments the following:

1. An array of integers
2. An integer that indicates the number of elements in the array.

Input Validation: Do not accept negative numbers for input.

FUNCTION: PRINTARRAY

This function should print out the text "Number of hours each student watched Netflix in ascending order: ". Then, the function should print out each element in the array with a space between each element. The function will accept as arguments the following:

3. An array of integers
4. An integer that indicates the number of elements in the array.

FUNCTION: GETAVERAGE

Provided for you.

FUNCTION: GETMEDIAN

Provided for you.

FUNCTION: SELECTIONSORT

Provided for you.

g++ -I ./ Netflix.cpp functions.cpp

```
C:\Windows\System32\cmd.exe

G:\_CSC\CSC2101-001\LAB9>g++ -I ./ netflix.cpp functions.cpp

G:\_CSC\CSC2101-001\LAB9>a

How many students were surveyed? 10

Enter the number of hours each student spent watching Netflix.
Student 1: 50
Student 2: 75
Student 3: 10
Student 4: 180
Student 5: 730
Student 6: 75
Student 7: 5
Student 8: 80
Student 9: 30
Student 10: 1

Hours each student watched Netflix in ascending order:
1 5 10 30 50 75 75 80 180 730

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          NETFLIX STATISTICS
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          Average: 123.60
          Median:   62.50
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G:\_CSC\CSC2101-001\LAB9>
```

```
C:\Windows\System32\cmd.exe

G:\_CSC\CSC2101-001\LAB9>a

How many students were surveyed? 9

Enter the number of hours each student spent watching Netflix.
Student 1: 300
Student 2: 400
Student 3: 75
Student 4: 80
Student 5: 10
Student 6: 15
Student 7: 21
Student 8: 18
Student 9: 4

Hours each student watched Netflix in ascending order:
4 10 15 18 21 75 80 300 400

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          NETFLIX STATISTICS
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          Average: 102.56
          Median:   21.00
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G:\_CSC\CSC2101-001\LAB9>
```

- netflix.h
- netflix.cpp
- functions.cpp

HOW WILL I BE GRADED?

GRADE	DESCRIPTION
1	The lab is 100% complete and mostly correct.
.75	The lab is 100% complete, but only partially correct
	The lab is only 75% complete, but what is finished is correct.
.50	The lab is partially complete & partially correct.
.25	The lab is not complete and not correct. There was minimal effort put towards this lab assignment, but something was turned in.
0	No lab was submitted.