

New Beginnings – Summer 2018

C++ Programming - Topic #/User Input Practice

Listed below is a set of practice problems. Select a subset of these to work on – depending on where you feel you need to focus.

From the Malik book(6<sup>th</sup> Edition):

### **Chapter 8 – Arrays**

**Problem #20** – “Reason” about the program to derive what the output is. Then, enter, compile and run the program. Does the output match your reasoning? If not, why not?

**Program 8** – Parts a through i. Pay attention to how to pass the arrays into the functions you are creating.

**Program 10** – Write a program to calculate the mean and std dev of up to 100 numbers. Use a statically defined array of numbers(float type). How efficient can you make the algorithm?

### **Chapter 10 – Classes and Data Abstraction**

**Problems** 6 a-e, 8 a-d, 11 a-c, 13, 14

**Program** – Get the LLL program from class working. Modify the node struct so that the data is a pointer to an object of class Student.

New Classes:

```
struct node {  
    Student * student_ptr;  
    node * next;  
};
```

```
class Student {  
    char * firstName;  
    char * lastName;  
    int id;  
};
```

Change the insert function to insert new students sorted by last name.

You'll need to add a constructor method for the Student class. It should take two arrays of chars and an integer as input. The objects of the Student class should use dynamic arrays of char to store the first and last name data members.

Also, modify the display\_all() function to output the Students in the list.

You can either read the student information from a file or from the user.

## **Chapter 12 – Pointers, Classes**

Problems 1(a-h), 2(a-i), 8, 9, 32

Program 2(redo Chapter 8 #6 with dynamic arrays)

---