Lab #1

CS-2050

January 26, 2024

1 Requirements

In this lab, you will cover passing and manipulating values by reference. Note that in this lab you *may not* use any standard library functions for string manipulation (IE: strlen, strcmp, etc...).

1.1 swap

```
void swap(int *a, int *b)
```

Info: This function will take two pointers to int, and swap the values being pointed to. You may assume that the two provided pointers are valid.

1.2 swapMaxMin

```
int swapMaxMin(int array[], int size)
```

Info: This function will take an int array, as well as the size of the array. It will swap the places of the minimum and maximum elements in the array. You may assume that so long as min != max, there will be no duplicates in the array. If all the values in the array are the same (IE: min == max), it will return **1**. Otherwise if the swap can be made, it will return **0**. You *must not* manipulate the array directly in this function, but instead call your swap function to perform the operation. For example:

```
// Before swap
{ 7, 5, 1 }
// After swap
{ 1, 5, 7 }
```

1.3 charAt

```
int charAt(char str[], int index, char *result)
```

Info: This function will take a NULL-terminated string, and return the character in the string at the given index by reference. If the index is not valid for the string (IE: it is < 0 or >= length), it will return **1**. Otherwise, if the index is valid, it will place the character into the result pointer and return **0**;

Grading: 11 points

1. Write required *swap* function
   * 3 points
2. Write required *swapMaxMin* function
   * 4 points
3. Write required *charAt* function
   * 4 points

Notice:

1. All of your lab submissions **must** include documentation to receive full points.
2. All of your lab submissions must compile under GCC using the $-Wall$, $-Werror$, and $-Wpedantic$ flags to be considered for a grade.
3. You are expected to provide proper documentation in every lab submission, in the form of code comments. For an example of proper lab documentation and a clear description of our expectations, see the lab intro PDF.