CSC 212: Data Structures and Abstractions
University of Rhode Island
Weekly Problem Set #1

1. Write a function that returns the length of a given string. EX: Given `"Test"`, return 4.

2. Using the function you defined above, create another function that returns true if a given string is a palindrome, and false if it is not. EX: "ABCBA" is a palindrome, "ABC" is not.

3. Define a function that returns the most frequently occuring character inside of a string. What would you have to change in order for this program to return the least frequently occuring character?

4. Write a *program* that prints the number of words in a given string. For this exercise please define the string you'll be using within your program, do not use std::cin.

5. Define a function to *toggle* the case of a given string. (Running this twice on a given string should yield the starting string)

6. Write a program that can find a missing number in an array of integers ranging from 1 to n. EX: Given [1, 2, 3, 5], ouput 4.

7. Define a function that prints the minimum and maximum elements in an unsorted array of integers. How would this code change if the array were sorted?

8. Write a program that removes any duplicate integers from an array. EX: Given `[1, 2, 2, 3, 4, 2, 5]`, the program should print `[1, 2, 3, 4, 5]`.

9. How would you implement a function that reverses a given array in place? Write a high-level psuedo-code for this function.

10. Briefly describe the difference between an array of integers and characters. How would you find their length? Space Requirements?

11. Using psuedo code, write a function that converts a string of numbers to their decimal equivalent.

    EX: Given `"1 2 3 4 5"`, generate the array `[1, 2, 3, 4, 5]`.