LW: C-String

Objectives

- Use a C-string instead of the C++ string class.
- Work with an array that uses a sentinel value to mark the end of the array instead of tracking the size with a separate variable.

Completion

- Attend lab or have an excused absence
- Get 12 of 17 points when you submit to the autograder.
    - This can be done by getting two of the three functions correct and being able to compile without errors or warnings for 12 points.
    - This can also be done by getting all three functions correct for 16 points.

Submission

Submit these files to the autograder

- main.cpp
- cstring.cpp
- cstring.h

What to do

1. Get the starter code.
2. Implement the three functions:
    1. `unsigned int length(char str[]); - 5 Points`
        1. Returns the length/size of the string
        2. Examples
            1. `length("") should return 0`
            2. `length("fifteen symbols") should return 15`
    2. `unsigned int find(char str[], char character); - 5 Points`
        1. Returns
            1. The index of the first occurrence of character in the string
            2. The size/length if the character is not found
        2. Examples
            1. `find("the rain in spain", 'a') should return 5`
            2. `find("abcdefghijklmnoqrstuvwxyz", 'p') should return 25`
    3. `bool equalStr(char str1[], char str2[]); - 5 Points`
        1. Returns
            1. `true` if the two strings are equal
            2. `false` if the two strings are not equal
        2. Examples
            1. `equalStr("apple", "apple")` should return true
            2. `equalStr("apple", "orange")` should return false
            3. `equalStr("Apple", "apple")` should return false
3. Compilation and Forbidden Includes tests - 2 points

4. If you have time, uncomment the “unpredictable” code.
    1. Note that the string does not have a `'\0'` as its last character.
    2. Run and see what happens? Your results will vary since this is a very insecure thing to do for code. Try to explain any results you get. It is useful if different people run it. Try submitting it to the autograder. You can see your output in the last test case that is worth 1 point.