CSCI 103: Introduction to Programming
Lab 4

September 15, 2023
Lab Goals

- Apply knowledge of C-Strings to complete basic operations on them
- Provide time to work on Project1/HW2 and get help from the TAs
Character Review

- **char** and **unsigned char**
  - Built in types in C/C++ language
  - Use exactly 1 byte or 8 bits
- **char** has range from -128 to 127
- **unsigned** char has range from 0 to 255
- C-style casting
  - Converting between chars and ints
C-String Review

• C-String: a sequence of characters in a character array `char[]` that ends will a NULL character delimiter ‘\0’
  • Beyond this delimiter is most likely garbage values

• “ ” around a collection of characters represents a valid C-string, so \0 is at the end
• ‘ ‘ around single character represents a char

```c
char mystr[10] = "hi world";
char mystr = { 'h', 'i', ' ', 'w', 'o', 'r', 'l', 'd', '\0' };
char mystr[10];
strcpy(mystr, "hi world")
```
Minimum Length of C-String

• The minimum length of a C-string is the number of the characters + 1
  • The extra +1 is for the delimiter NULL character that needs to be at the end

• ex) if we want a variable called mystr to hold the string “hi world”, then mystr needs to have a size of 9 \rightarrow char mystr[9] = “hi world”
  • 8 characters (h, i, _, w, o, r, l, d) + 1 slot for the null ‘\0’ at the end

char name[4] will not compile! It does not leave room for the null character at the end.
Checkoff

- Read through the guide and complete the tasks
- Check in with a TA to make sure you have credit for this lab when you have passed all the checks

After the lab you can:
- Work on HW2 for whatever time remains and ask for help from the TAs when needed.
- Practice debugging on any unfinished parts of lab 3
- Ask for feedback on HW1 or PR1 approaches