

# CS 1313 010 Spring 2025 Homework #14

Quiz to be held in class 9:00-9:15am Monday Apr 28 2025

**NOTE: This is an OPTIONAL BONUS quiz: its value will affect your numerator in calculating your quiz grade but not your denominator.**

Please feel free to discuss these questions with your classmates, but NOT to copy each other.

**NOTE:** Except where and as explicitly permitted in writing (for example, in a Homework), you are **ABSOLUTELY FORBIDDEN** to **COPY EVEN A SINGLE CHARACTER** from,

or to have **ANY** shared code with, **ANY** other entity,  
whether a human being (regardless of whether in CS1313 or not),  
a text resource, a computing resource or anything else,  
whether in person, on a local computer, online or anywhere else.

It's **INCREDIBLY EASY** for us to detect such copying, so **DON'T EVEN THINK ABOUT IT!**

1. Give the ASCII code associated with each of the following characters.

- (a) D
- (b) W
- (c) m
- (d) r
- (e) ; [semicolon]
- (f) blank space
- (g) Carriage Return
- (h) Record Separator

2. In C, a character scalar literal constant can be expressed either as the character itself, or as a three digit number in which base?

3. In every character string, what character indicates the end of the string?

4. What ASCII value does that character have?

5. Which of these is the correct way to set the value of a string variable?

(a) `destination_string = "This is the string contents that I want.";`

(b) `strcpy(destination_string, "This is the string contents that I want.");`

6. Suppose that a character string named `my_name` has been declared and allocated at length 100. Write a statement that would set its contents to your name.

7. Suppose that a character string named `my_name` has been declared and allocated at length 100, and has been given contents (for example, your name as in the exercise just above). Write a `printf` statement that outputs to `stdout` the string variable's contents, followed by a newline.
8. Suppose you have two character string variables declared, allocated and filled with contents (some text). How would you tell whether the first string were less than, equal to or greater than the second string?
9. Convert the following decimal (base 10) numbers to binary (base 2). Show your work where appropriate.
  - (a) 2
  - (b) 13
  - (c) 25
  - (d) 30
  - (e) 63

10. For each of the following binary (base 2) numbers, **NEGATE** it (in two's complement, using 8 bits). Show your work where appropriate.

(a) 0000001

(b) 0000011

(c) 0000101

(d) 0001101

(e) 01010101

11. For each of the following binary (base 2) numbers, convert it to decimal (base 10), then give the character associated with that ASCII value. Show your work where appropriate.

(a) 01000010

(b) 01101110

(c) 01011001

(d) 01010001

(e) 00011111

12. **CALCULATE** the following sums. Show your work, including carries. The first exercise is in base 10; the rest are in base 2.

$$(a) \begin{array}{r} 30 \\ + 47 \\ \hline \end{array}$$

$$(b) \begin{array}{r} 00100111 \\ + 00111110 \\ \hline \end{array}$$

$$(c) \begin{array}{r} 01010100 \\ + 11111101 \\ \hline \end{array}$$

$$(d) \begin{array}{r} 0000000010100100 \\ + 1111111100011010 \\ \hline \end{array}$$

If you use **ANY** resources other than Dr. Neeman, the TAs/graders (Basiri, Bilal), the course text-book or the materials posted on the course webpage, you **MUST** reference them on the quiz. **THIS INCLUDES CLASSMATES, FRIENDS, PROFESSORS, ONLINE RESOURCES, ETC.**