

CS 1313 010 Spring 2025 Homework #3

Quiz to be held in class Mon Feb 3 2025 9:00-9:15am

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. In computing, we often refer to real numbers (that is, numbers that have nonzeros to the right of the decimal point, as opposed to integers, which have only zeros to the right of the decimal point) as *floating point* numbers. The acronym *FLOPs* is short for *FLoating point OPerations per second*, where a *floating point operation* is an arithmetic operation — for example, add, subtract, multiply — performed on real (that is, floating point) operands.

The OU Supercomputing Center for Education & Research (OSCER)'s current supercomputer is capable of roughly 2.1 *petaflops*. What does *petaflops* mean?

2. **WHAT** is a program?
3. **WHAT** is a programming language?
4. **NAME THREE EXAMPLES** of programming languages.
 - (a)
 - (b)
 - (c)
5. **WHAT** is source code?
6. **WHAT** is a source file?
7. **WHAT** is an operating system?
8. **NAME THREE EXAMPLES** of operating systems.
 - (a)
 - (b)
 - (c)

9. WHAT IS THE NAME of each of the following C constructs:

(a) `/*`

(b) `*/`

(c) `/* What is this? */`

(d) `{`

(e) `}`

(f) `#include <stdio.h>`

(g) `int main ()`

(h) `printf("Hello, world!\n");`

10. In the example programs in the lecture slides, WHAT DO WE CALL the percent sign (%)? (On `ssh.ou.edu`, you may have seen it as a greater than > symbol, perhaps preceded by other text.) Is it part of the C program?

11. WHAT do each of the following Unix commands do?

(a) `cat`

(b) `make`

(c) `pwd`

(d) `ls`

(e) `cp`

(f) `mkdir`

(g) `cd`

(h) `nano`

(i) `script`

12. Are Unix commands part of a C program?
13. **WHAT THREE COMPONENTS** does every language have?
 - (a)
 - (b)
 - (c)
14. **NAME THREE DIFFERENCES** between natural languages and programming languages.
 - (a)
 - (b)
 - (c)
15. **NAME A DIFFERENCE** between high level languages and assembly languages.
16. **NAME A DIFFERENCE** between assembly languages and machine languages.
17. **NAME A DIFFERENCE** between compilers and interpreters.
18. **NAME A DIFFERENCE** between compilers and assemblers.
19. If I compile a C source file named `my_program.c` on `ssh.ou.edu`, which has an Intel x86 processor, and I give the executable `my_program` to you to run on a tablet computer that has an ARM processor, **will you be able to run it properly? EXPLAIN.**
20. If I compile a C source file named `my_program.c` on `ssh.ou.edu`, which has an Intel x86 processor, and I give the executable `my_program` to you to run on OU's super-computer, `schooner.oscer.ou.edu`, which also has an Intel x86 processor, **will you be able to run it properly? EXPLAIN.**
21. **WHY** don't people usually program directly in machine language?
22. **WHY** don't people usually program directly in assembly language?

23. **WHAT IS THE OUTPUT** of each of these programs? If the program has no output, mark **NO OUTPUT** and then **EXPLAIN WHY**. If the program does not compile, mark **WON'T COMPILE** and then **EXPLAIN WHY**. If the program outputs garbage, mark **GARBAGE** and then **EXPLAIN WHY**. If you are not confident of your answer, type in, compile and run the program. If you're stumped, you can try visualizing the program using: <http://www.pythontutor.com/c.html#mode=edit>

(a)

```
#include <stdio.h>
int main ()
{ /* main */
    printf("Also cute and fluffy!\n");
} /* main */
```

(b)

```
#include <stdio.h>
int main ()
{ /* main */
    printf("\n");
} /* main */
```

(c)

```
#include <stdio.h>
int main ()
{ /* main */
} /* main */
```

24. **HOW** does a C compiler know that the following line is a comment?

```
/* **** */
```

25. Is C case-sensitive or case-insensitive?

26. **WHAT** is a character string literal constant?

27. **GIVE AN EXAMPLE** of a character string literal constant.

28. A **NEWLINE** is also known as a ... ?

29. **WHICH KEY** on the keyboard will cause a newline to appear when you are typing? (**NOTE:** This question **ISN'T** asking about a newline inside a character string literal constant.)

30. Inside a character string literal constant, **HOW** is a newline indicated? Give the sequence of characters.
31. **GIVE AN EXAMPLE** of a character string literal constant that causes a newline to occur.
32. **YES OR NO:** Can a character string literal constant be more than one line long?
33. **WHAT** is the name “character string literal constant” sometimes shortened to?
34. **WHAT CHARACTER** comes at the end of every statement?
35. When that character comes at the end of a statement, **WHAT** is it known as?
36. **YES OR NO:** Can a statement be more than one line long?
37. **WHAT** is *standard input*?
38. How is standard input **ABBREVIATED** in writing?
39. How is the abbreviation of standard input **PRONOUNCED?**
40. **WHAT KIND OF STATEMENT** inputs from standard input?
41. **WHAT** is *standard output*?
42. How is standard output **ABBREVIATED** in writing?
43. How is the abbreviation of standard output **PRONOUNCED?**
44. **WHAT KIND OF STATEMENT** outputs to standard output?
45. **DEFINE** the word *delimit*.

46. WHICH CHARACTER OR SEQUENCE OF CHARACTERS is the block open delimiter?
47. WHICH CHARACTER OR SEQUENCE OF CHARACTERS is the block close delimiter?
48. WHICH CHARACTER OR SEQUENCE OF CHARACTERS is the comment open delimiter?
49. WHICH CHARACTER OR SEQUENCE OF CHARACTERS is the comment close delimiter?
50. YES OR NO: Can a comment be more than one line long?
51. WHY do we use comments?

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