

CS16, 10S, **H12**, due **Wed Lecture 04.28**—Functions, basic principles (Etter, 4.1, 4.2)—Total Points: 50

Available online as <http://www.cs.ucsb.edu/~pconrad/cs16/10S/homework/H12>—printable [PDF](#)

|                  |                              |                 |
|------------------|------------------------------|-----------------|
| Name:<br>(4 pts) | Umail<br>Address:<br>(4 pts) | @umail.ucsb.edu |
| _____            | _____                        |                 |

Lab Section (2 pts)—circle one:                      9am    10am    11am    noon    unknown

(Note: For now, circle the lab section you are registered for on GOLD. If you need to request attendance at a different lab section because of an ACTUAL SCHEDULE CONFLICT, please email [pconrad@cs.ucsb.edu](mailto:pconrad@cs.ucsb.edu) with details)

---

This assignment is due **IN Lecture on Wednesday, 04.28.**  
**It may ONLY be submitted Lecture, in Chem 1171 at 1pm on Wednesday.**  
You must come IN PERSON to turn it in during your assigned Lecture section.

**Late Policy:** No email submission allowed—and don't "slip it under my door". If you need to make it up, you must do so during office hours, or make an appointment to see me, and you must request this appointment within 48 hours of when the assignment was originally due.

**Personal Day/Sick Day policy:** Everyone is permitted one "personal day/sick day" when you get to make up a missed homework assignment for free during office hours or via appointment. After that, you may not make up the homework assignment—you can only earn back the points through extra credit opportunities.

(For more details, see the [syllabus](#) and the [homework policy](#))

---

Your reading assignment for this week includes all of Chapter 4. The questions on this homework focus on Sections 4.1 and 4.2 of Chapter 4.

You may work with one other person on this assignment—he/she may be your pair programming partner, or someone else in the course. If you do work with another person, please write his/her name on the line below. (You still must BOTH hand in the homework separately though).

---

Read Chapter 4 in your Etter textbook. Then answer these questions:

1. (5 pts) Briefly explain the idea of "reusability", and how this relates to the study of "functions" in C—and, for that matter, the study of functions in any programming language.
  
  
  
  
  
  
  
  
  
2. (5 pts) Briefly explain the idea of "abstraction", how this relates to the study of "functions" in C—and, for that matter, the study of functions in any programming language.

**Please turn over for more...**

## ...continued from other side

3. In Section 4.1 the author (Delores Etter) offers suggestions about three different debugging approaches—one having to do with *compilers*, another to do with *comments*, and a third having to do with something called a *driver*.

In your *own* words—as if you were **suggesting it to your pair partner**—not just in words just copied from the text verbatim—briefly explain each of these approaches. Put the suggestion in the context of a situation where it might be useful.

To give you an idea of what I'm looking for, I've done the first one for you. Let's suppose your pair partner's name is Chris.

- a. (0 pts—done for you as an example) the compiler thing....

Hey, Chris—this error message is confusing. Maybe we could try compiling and running our code with another compiler, to see if we get a different message. Seeing how that other message is worded might help us figure out what's going on.

- b. (5 pts) the comment thing...

- c. (5 pts) the driver thing...

4. On p. 156-157, Etter describes functions definitions and function prototypes. She shows two ways that the function prototype for the sinc function can be written, and then suggestions why one of these ways is better than the other.
- a. (12 pts) Look at the function definition for the gc\_distance function that appears on p. 167. Then write down **two ways** that the function prototype for positive could be written—analogous to the two ways that Etter presents the prototype for sinc on p. 157.

First way:

Second way:

- b. (8 pts) Which of these two ways is preferred by both Etter (and your instructors at UCSB!) and why is that preferred?