

Asking Questions

1 How do I ask a good question?

Getting stuck and asking questions is not just a natural part of the learning process, it is arguably a vital stage in this process—historically, we see that the students who ask the most questions and try to understand where the flaw in their thinking is are the ones who take away the most from this course. Asking good questions—the right questions—is an important and useful skill to have, not just to succeed in this course, but also for the future. Give as much information as possible—the more we know about how much you already know, the less we will teach you redundant topics you understand, and the more effective we will be at helping you!

The following sections will cover the two main categories of questions we encounter at office hours and ways to improve the question being asked. As a pre-requisite, before you ask any question at office hours, please read (and re-read!) any relevant assignment handouts; a lot of the time, the answer can be found in the handout.

2 Debugging Problems

Some of the most common issues may be programming related, or "How do I debug this?". Formulating questions for these issues can be hard, but answering the following questions should convey a good understanding of the question to ask:

- **What is the actual problem? (eg: assertion failure, segfault, etc)**
- **What did I expect to happen and why?**
- **What have I tried so far?**
- **Where in my debugging/thinking process did I get stuck?**
- **What do I think could be the issue? Any guesses?**

Example:

One of the most common error messages a student faces in 15-122 is something along the lines of: `my_example.c0:5.14-5.28: assert failed`.

To receive effective help at office hours for such a bug, the following sample set of answers to the questions posed above come in handy:

- **What is the actual problem? (eg: assertion failure, segfault, etc)** - Assertion failure
- **What have I tried so far?** - The error message says the failure is on line 5, so I figured out what assertion is causing the issue. It seems to be this contract: `//@assert x > 0`.
- **What did I expect to happen and why?** - The assertion should have passed; `x` should definitely be positive!
- **Where in my debugging/thinking process did I get stuck?** - This assertion is about variable `x`, but I'm confident I set its value correctly.

- **What do I think could be the issue? Any guesses?** - Maybe x 's value is being changed before the assertion somehow?

3 Conceptual Problems

Conceptual questions are in a more unclear territory, and pinning them down isn't always possible—that's ok! The following prompts may help narrow your question down and clarify your misunderstanding:

- **Did I review the material presented in class?**
- **What specific aspects of the topic do I not understand?**
- **Is there a specific problem related to the topic that I cannot solve?**

Example:

Still don't understand hash tables?

As before, let's answer the question template above:

- **Did I review the material presented in class?** - Yes!
- **What specific aspects of the topic do I not understand?** - Absolutely nothing (and this is perfectly ok!).
- **Is there a specific problem related to the topic that I cannot solve?** - I tried out exercise 2 in the lecture notes, but I wasn't sure how to start.

Asking good questions is by no means an easy skill to learn and takes practice, so ask early and ask often!