# Commentary: Week 5

CSE120: Computer Science: Principles

This week’s goal is to prep for the midterm. The students are also working on Assignment 11. (In 2014 the order of this week was adjusted so students could go to the Seahawks parade!)

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| Lecture 12 | Lab 07 | Lecture 13 | Review | Midterm |
| Assignment 11 | | | |  |

**Lecture 12:** The algorithms discussion is designed to achieve two goals, both of which probably require more time than they get here. (I’d divide this lecture into two, if possible.) The first goal is to make the case that algorithms to solve a task (sorting) can be fundamentally different: The comparison pattern of three sorts makes this point. The other point is that spelling out for a computer how an algorithm works is only part of the task; the developer must also be able to tell another human WHY it works. (Of course, this is the correctness point.) An example is that ExchSort works because after each pass, the “smallest remaining” is now at the head of the segment just processed.

**Assignment: N/A**

**Lab 07:** The Elli worm is now modified to be controllable with the cursor keys. This lab seems large, but students who show up with the Elli program working do just fine. I am not worried about details such as how cute is the smile or how accurate is the depiction of the apple. Making the moves and discovering when Elli is near the apple (it’s good enough to be close) are the key points. Most students needed more than the class hour to finish it.

**Lecture 13:** The lecture explains how computers work in the sense that it explains the fetch/execute cycle. That’s the message of the lecture, and it’s pretty straightforward. At the end, I take a couple of moments to explain how a field-effect transistor works. This is a wonder of the universe – truly, amazing – and so I present it to the class. I say that it is not on the exam, and so I end up lecturing to myself as the class checks its messages. No problem, because that way, everyone paying attention is in awe.

**Assignment: N/A**

**Review:** A sheet of review questions was distributed on Monday as a study guide. The lab is devoted to answering student questions. Most come from the study guide, but often a more comprehensive discussion ensues. Also, there were several questions on binary, since students hadn’t actually watched the videos.

**Midterm** – please do not post it**:** Students are permitted one 8.5 x 11 sheet of notes for the exam. (I do this for two reasons: (a) there is a lot of detail in computer science that shouldn’t be memorized; (b) creating the “cheat sheet” is a terrific way to study.) The experience with the 2013 midterm is that the scores described an almost perfect linear function from 10 to 107 (out of 110); 2014, which is included here, was a more typical bell.