Lecture C1: Course introduction

Response to 'Muddiest Part of the Lecture Cards'

(62 respondents)

1) *Demo of the Palindrome code was unclear (and related Ada questions)*? (16 students)
The example program was to expose you to what Ada code looks like. We will build our first Ada program in class together and incremently build up the concepts over the term. At that point we will revisit this program.

2) *I did not understand all the details of the 'von Neumann model' (and related assembly/computer architecture questions)*? (7 students)
Lectures 4, 5 and 6 will basically cover number systems, and computer architecture. The von Neumann model (yes that is what the block diagram that I sketched on the board is called) will be explained in detail during that time.

3) *What is on the CD*? (1 student)
It has the compiler, sample code from the book, AdaGide, language reference manual and some more helpful Ada documents.

4) *What are embedded systems*? (1 student)
An embedded system is a special-purpose computer system built into a larger device. Examples of embedded systems could for example be a microwave oven, automatic teller machine, printers, inertial guidence systems for missiles, wristwatches, and routers. An embedded system is typically required to meet very different requirements than a general-purpose personal computer and it usually does not have any of the following: monitor, keyboard, mass storage nor user interface software. An embedded system might include some kind of small operating system, but very often it is simple enough to be written as a single program. A typicla embedded system consists of a single board microcomputer, it has all of its application code in ROM (read only memory) which it starts execute when system is turned on, and will continue to execute that code 'for ever' or until system is shut down.

5) *What characteristics of Ada make it so useful for mission critical / embedded systems*? (2 students)
Ada was originally targeted for embedded real-time applications and is still mostly used for that kind of applications. We will during the course cover many different features of the Ada language, including the following which all are good features for mission critical applications; 'strong typing', run-time checking (protects against e.g, access to unallocated memory, buffer overflow errors), allows for parallel processing (tasking), exception handling and also, Ada does not typically use garabade collection for storage management.

6) *I don't understand where ew are starting*? (1 student)
Reading instructions for each CP lecture and short descriptions of the lectures topics can be found on the CP web page.

7) *PRS sensors seem not to work in one side of class room*? (1 student)
The building support staff have been informed and hopefully it will be fixed during next week.

8) *How will Ada integrate into rest of unified*? (1 student)
Ada will be used as part of the systems problems. In addition other faculty members may use some of the concepts presented in CP for illustrating concepts that they are teaching aswell.

9) *Do we really need to buy any books*? (1 student)
You will need a book on Ada programming (some are available online). The Feldman book will be the basis on which the course is taught. You may choose to buy a more advanced Ada programming book to suit your personal learning objectives. Take a look at the following links for online material: http://www.adaic.org/free/freebook.html

10) *Is Brookshear an overview of programming or a history of computer science book*? (1 student)
Bits of both. It provides an introduction to computer science with an emphasis on fundamental principles. Take a look at the following page for more information: Computer Science an Overview.

11) *Difference between compiling, linking and binding*? (3 students)
This will be covered in lecture number 2.

12) *What kind of tests are we going to have*? (1 student)
For the fall term, there will be a single in-class quiz.

13) *Are we going to design a Lego-robot*? (1 student)
Not during the fall term.

14) *Was the '15 problem sets' a typo*? (1 student)
Yes, there is a weekly problem set. Each of the problem sets will contain problems from each of the lectures in the week.

15) *Where did you find a lego package for Ada*? (1 student)
The United States Air Force Academy. Take a look at the following link: http://www.usafa.af.mil/

16) *"No mud"* (19 students)
Good :)