CS108: Course Information

Dr. Patrick Young
Winter 2018

Class Objectives

The course objectives are as follows:

- To substantially strengthen students' programming ability by requiring them to program a number of large, interesting projects.

- To teach students to find information on their own and solve problems on their own using available documentation; to give them the confidence in their own abilities they will need when programming in industry or as grad students.

- To solidify students understanding of object-oriented principles.

- To provide exposure to a broad range of programming areas including multi-threaded programs, communication between processes, and interacting with databases.

- To provide team programming experience.

Course Staff & Office Hours

Lecturer: Dr. Patrick Young
Gates 194
e-mail: patrick.young at
Please do **not** leave me voice mail—use e-mail instead.

Teaching Assistants:
Wayne Lu, waynelu at
James Payette, jpayette at
Cindy Prasetio, mcp21at
Howard Small, hsmall at
Lingtong Sun, lsun569 at
Kim Wijaya, kcwijaya at
Sophia Zhang, shuyingz at

Office Hours may vary from week to week, changing depending on assignment due dates. Please check Canvas for the latest information.

All e-mail addresses are @stanford.edu. Please note that we will not debug code via email. Learning to debug is a critical skill for software programmers, and code requests for help via email usually to end up with us giving you the answer rather than you learning how to find the answer. Therefore we will not look at code longer than 1-2 lines via email. If you're having trouble finding errors in your code, you need to come in to office hours where we can teach you how to debug. Check the office hours ahead of time and plan accordingly. These rules hold whether or not any additional office hours are available before the assignment is due.

If you are having problems figuring out where an error is, you must include:

1) A detailed description of the problem
2) A description of three different conjectures as to what might cause that problem
3) A list of concrete steps taken to try to confirm or eliminate the conjectures.

If we believe that you did not spend time in a careful analysis of the problem or have came up with a list of nonsensical conjectures simply to fill out your list, we may tell you to come up with additional conjectures.

If you're having trouble coming up with conjectures, think about what the symptom you are seeing is, then consider what parts of the code are related to the issue you are seeing. Think about what might be going wrong that might result in your symptoms. Try to get more detailed information on the error. Go into the debugger or put in some print statements. Try to isolate the problem.

You really need to learn to dig in and wrestle with the code and your bugs. This is the only way you will strengthen your debugging skills and become strong programmers.

Grading

Homework Assignments	66.6%
Class Project	33.3%

Your grade will be based two-thirds on individual assignments done during weeks 1-7 and a third on a group project at the end of the quarter. There is no midterm and no final for this class.

Note: In order to earn an A+, students will need strong performance on both their individual assignments and on the group project.

Course Assignments

There will be five regular homework assignments.

Late Policy
For all regular assignments except for the last one, assignments turned in late will be penalized 10% for each 24-hour period which has passed since the original due date and time. No assignment may be turned in more than a week after its original due date.

I realize that you do have other classes. You have a late allowance of three late days which can be used to excuse late assignments. This allowance may be used for a single assignment or it may be divided for use on multiple assignments. For example, if you turn in one assignment three days late, you've just used up your entire late allowance. However, if instead you turn in the assignment two days late you still have one additional late day which you can use for another assignment.

The last assignment before the project begins must be turned in on time. You may not use any late days on it, and it will not be accepted late. This is to ensure that all students are ready to begin work on the team project at the end of the quarter, instead of having some members of the team working on the final project, while others are trying to finish up their late last assignments.

Collaboration Rules

You should not receive assistance on your assignments from anyone other than a member of the CS108 teaching staff. While I certainly expect students to discuss the class amongst themselves, please be very careful about providing assistance with the assignments. *For the purposes of this class, if someone looks at your code, or if you look at another student's code, you have received too much assistance.*

If you have concerns that you received too much help from another person or any other source, explicitly document the help received with your assignment. Any help that is explicitly documented will not be considered an Honor Code issue – although it may result in a grade reduction.

Please note that CS108 submissions may be run through automated plagiarism detection tools.

Submission Errors

Please properly submit your assignments. Submission errors on professional projects lead to "breaking the build" which is considered a very serious mistake. Because of this, we want you to pay careful attention to properly submitting and will heavily penalize students who have submission errors.

Grades on Canvas

We will be posting your grades on the Canvas website (see below). Please make sure you check your grades as soon as they are posted. Any missing grades or grading errors must be reported within one week of the posting date. *All grades will become final, one week after they are posted.*

Final Project

In addition to the homework assignments, you will also have a large group project at the end of the quarter. While we will provide more information on the project much later in the quarter, you will need to form 3-5 person teams. Make sure you get to know your fellow classmates now, so you'll be able to form a team with students you are comfortable with.

Software

We will be using the Eclipse IDE. If you don't already have it, get the Eclipse IDE:

http://www.eclipse.org/downloads/

When installing Eclipse, you want to choose the options for standard Java development (not the EE or Enterprise options). If you've already got a copy of Eclipse from CS106, get a new copy, the version used for CS106 lags far behind (mostly so they don't have to constantly update and test the CS106 plugins). If you're a CS106 Section Leader, there's no problem having multiple copies of Eclipse installed.

In addition, we will be using Android Studio. We'll talk about that in a separate Android handout coming out the 2nd week of the quarter.

Course Materials

There is no textbook for this class. We will be using Canvas for our course website:

http://canvas.stanford.edu/

Tentative Course Schedule

All due dates are subject to change. Check the individual assignment handouts for the actual due dates.

Week One (1/8)
- Java Review, Collections, Unit Testing

Week Two (1/15)
- Basic Android Programming
- HW1 due 11:59pm Wednesday Evening 1/17

Week Three (1/22)
- Encapsulation and Inheritance
- HW2 due 11:59pm Wednesday Evening 1/24

Week Four (1/29)
- Exploring Android Programming
- Databases
- HW3 due 11:59pm Sunday Evening 2/4

Week Five (2/5)
- Programming with Threads

Week Six (2/12)
- More Android Programming
- HW4 due 11:59pm Wednesday Evening 2/14

Week Seven (2/19)
- Software Development
- HW5 due 11:59pm Wednesday Evening 2/21

Week Eight (2/26)
- Software Development

Week Nine (3/5)
- TBD

Week Ten (3/12)
- TBD
- Final Project due at 9pm Friday 3/16
- Final Project Grading Sessions Afternoon of 3/17

The Stanford Honor Code

The standard of academic conduct for Stanford students is as follows:

A. The Honor Code is an undertaking of the students, individually and collectively:

   (1) that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading;

   (2) that they will do their share and take an active part in seeing to it that others as well as themselves uphold the spirit and letter of the Honor Code.

B. The faculty on its part manifests its confidence in the honor of its students by refraining from proctoring examinations and from taking unusual and unreasonable precautions to prevent the forms of dishonesty mentioned above. The faculty will also avoid, as far as practicable, academic procedures that create temptations to violate Honor Code.

C. While the faculty alone has the right and obligation to set academic requirements, the students and faculty will work together to establish optimal conditions for honorable academic work.