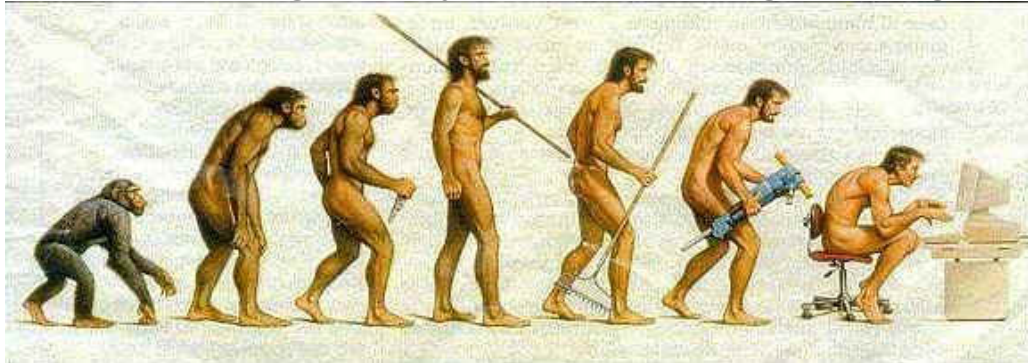


CS 10, Fall 2013

Problem Solving via Object Oriented Programming



Course description

ORC. Motivated by problems that arise in a variety of disciplines, this course examines concepts and develops skills in solving computational problems. Topics covered include *abstraction* (how to hide details), *modularity* (how to decompose problems), *data structures* (how to efficiently organize data), and *algorithms* (procedures for solving problems). Laboratory assignments are implemented using object-oriented programming techniques.

Who, when, where

Instructor

[Gevorg Grigoryan](#)

Office: 113 Sudikoff

Office hours: 10:00-11:00 Tu/Th

Teaching assistants

Yinan Zhang (yinan -dot- zhang -dot- gr -at- dartmouth -dot- edu)

Office: 220 Sudikoff

Office hours: 2:00 - 3:00 pm M/F (or by appointment)

[Haider Syed](#) (haider -dot- syed -at- dartmouth -dot- edu)

Office: 205 Sudikoff

Office hours: 3:00 - 4:00 pm M, 6:00 - 7:00 pm Th (or by appointment)

Section leaders

Ryan B. Amos

Justin K. L. Chan

Barry Y. Chen

Shuyang Fang

Serena X. Liu

Faizan N. Kanji

Delos Chang

Daniel G. Shanker

Jae Heon Lee

Ethan Yu

Steffi Ostrowski

Robin Wang

Course staff email

cs10help -at- cs -dot- dartmouth -dot- edu

Consider posting on [Piazza](#).

Ask for help or guidance — one or more of us will answer!

Lectures

10-hour | MWF 10:00-11:05; Th 12-12:50 | Cook, Murdough building

The x-hour will primarily be used as an optional, informal, interactive session of working through examples together. It may sometimes be used to make up for missed classes.

Section meetings

These are weekly small-group meetings with section leaders to review lecture material, discuss questions, go over homeworks, etc. Groups and times will be posted on Blackboard.

Lab

Help will be available in Sudikoff instructional lab. We will meet at the following times and places:

- Sun 8-11, 003 Sudikoff (staffed by Ryan, Serena, Barry, and Jae Heon)
- Mon 8-11, 003 Sudikoff (staffed by Daniel, Ethan, and Faizan)
- Tue 8-11, 003 Sudikoff (staffed by Steffi, and Shuyang)
- Thu 8-11, 003 Sudikoff (staffed by Delos, Robin, and Justin)

Students enrolled in CS 10 should have automatic access via ID card to Sudikoff and the instructional labs; drop an email if there are problems.

Announcements and discussion board

We will be trying to use a new/cool tool for this — [Piazza](#). Please post your questions on Piazza — TA's and I will monitor the site and will be answering questions. Also feel free to answer each other's questions, we will monitor these as well and make corrections as necessary.

Textbook

Required: [Data Structures & Algorithms in Java \(fifth edition\)](#), by Michael Goodrich and Roberto Tamassia.

Free on web: [Problem Solving with Data Structures: A Multimedia Approach](#), by Guzdial and Ericson. (This is the first 4 chapters of a preliminary version of a book that they are writing.)

Coursework

All homeworks (short assignments and problem sets) for this class are to be submitted electronically on Blackboard by 2 *am* of the morning that the assignment is due. Even when an assignment has some written exercises, you are required to either type in a file or scan your written work and submit it electronically. To submit output from your program, submit a copy-pasted file in plain text format and/or a screenshot, as appropriate. For plain text, you can use a program like TextEdit, NotePad, or Emacs, or even Word, but be sure to save as plain text. For a screen shot, you can use Preview (under the "File" menu) or the Grab utility on Mac or the PrntScrn button on Windows. If an assignment requires you to submit multiple files, zip all the files into a single zip file and submit that. If you have to revise your submission, submit your new zip file once more, with V2 appended (V2 for Version 2, V3 for Version 3, etc.); only the last version will be graded.

Short assignments (10%)

Practice and feedback to aid your understanding of the basic course material.

Grading

2 (correct and good), 1 (needs work), or 0 (nothing of substance). A solution receiving a 1 may be revised and resubmitted *once*, before the next regular class period after it is returned, for a possible upgrade to 2.

Late policy

No credit. If you have a partially completed assignment hand it in on time and resubmit later. (You have to have to hand in something that demonstrates that you have worked on the problem.)

Problem sets (50%)

A mixture of written and in-depth programming exercises, challenging you to use the ideas we study in class to solve new problems.

Late policy

Penalties: < 8 hours: 10%; < 24 hours: 20%; < 48 hours: 40%; more: no credit.

Under extenuating circumstances (illness, death in the family, etc.), alternative arrangements may be made with the instructor, if possible *before* the due date.

Grading

Specific grading rubrics will be provided for each problem set, covering *correctness* (solving the assigned problem), *structure* (organization, use of techniques covered, efficiency), *style* (readability of code, clarity of documentation), and *testing* (your demonstration of correctness).

Exams (40%)

A midterm and a final exam, each worth 20%.

Extra credit

Some homeworks have specific extra-credit problems; you may suggest other extensions for possible extra credit; any exceptionally clever, creative, or insightful work may likewise be awarded extra credit points. As its name suggests, extra credit is always optional, and you should never feel that you have to do extra credit problems. Extra credit points are recorded separately from other grades, and may be used to help make borderline letter grade assignments at the end of the term (those with substantial extra credit automatically get the higher grade). Extra credit points can only help, never hurt, your final grade, regardless how much or how little extra credit you or your classmates choose to do. However, you should not view extra credit as a substitute for doing good and thorough work on your assignments.

Collaboration and honor code

Dartmouth's honor code applies to this course, and academic misconduct policies will be strictly enforced. If you have questions, ask!

Output

The output that you submit (screen shot/copy-pasted text) must be unaltered/unedited from what is produced by the program that you submit. If you make any change to the code, no matter how insignificant you think it might be, rerun your program to produce new output!

Partners

Much of the learning in this course comes from doing the programming exercises. On some problem sets, you may work jointly with *one* other person, if so stated. No more than two people may work together on a given problem set. If you choose to work with someone else, you and your partner must submit a single joint assignment with both names on it, and you must work with the same person for the entire assignment. You cannot work with one person for some parts of an assignment and a different person for other parts, although you may work with different partners on different assignments.

On short assignments, you must work *alone* unless otherwise stated in the assignment.

Attribution

Under no circumstances may you hand in work done with (or by) someone else under your own name. If you have any doubt, credit any person(s) (other than course staff) from whom you got help. Your code should *never* be shared with anyone, other than your partner (if you are working in a pair). You would be amazed at how easy it is to tell when people work together on problem sets, so please don't make life unpleasant for all of us by breaking these rules. The penalties for cheating at Dartmouth are severe, starting with suspension and including expulsion. If you are unsure about anything, please ask.

Any hard-copy and electronic sources used must be properly cited and acknowledged. The only exceptions to this rule are as follows. It is not necessary to cite material which is copied from lecture notes or example code which we supply you in the course of this term. Material copied or otherwise drawn by you personally from the course textbook need only be cited in general terms, e.g., "this code sample is from the textbook."

You are not allowed to look at solutions from earlier offerings of CS 10 or the former CS 5 and 8, from which some material is adapted. For short assignments you may look at the sample solution before resubmitting, but should not simply copy it. If you submit a problem set late you are not allowed to look at the posted sample solutions until after you submit your solution.

Disabilities

Students with disabilities enrolled in this course and who may need disability-related classroom accommodations are encouraged to make an appointment to see the instructor before the end of the second week of the term. All discussions will remain confidential, although the [Student Accessibility Services](#) office may be consulted to discuss appropriate implementation of any accommodation requested.

Religious Observances

Some students may wish to take part in religious observances that occur during this academic term. If you have a religious observance that conflicts with your participation in the course, please meet with me before the end of the second week of the term to discuss appropriate accommodations.