CSCI455: Introduction to Programming System Design

Claire Bono

bono@usc.edu

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http://bytes.usc.edu/cs455/

Today's topics

- Course overview and logistics

- Academic integrity

- Java naming conventions (time permitting)

Announcements

- For initial announcements see course website:

    http://bytes.usc.edu/cs455/

    (after that course announcements will be on piazza)

Announcements (cont.)

To Do after lecture:

- if you are not officially enrolled yet, or have no programming experience please see me after class or office hours today

- non-DEN students: look out for email from DEN about how to get on DEN d2l.

- activate your piazza account (if you already registered for CS 455, you got an email invitation)

- get textbook and start readings for this week

- activate your pollEverywhere account and log in on your browser

What's going on these days…?

- Things are different. We will all need to have …
  - empathy / understanding
  - flexibility / adaptability
  - resilience
- Some specifics:
  - some things may change if what we are doing isn't working
  - we are doing what we can to accommodate different time zones (lab times, exam times, office hour times)
  - synchronous lecture attendance is not required
  - we're going to try for synchronous labs (does not apply to DEN students)
  - if you have a special circumstance (e.g., time zone, connectivity) that makes any part of the course extra difficult, please discuss your situation with me (email, office hours)

Where to find course materials

- Course web page: http://bytes.usc.edu/cs455/
- DEN d2l course management system for
  - videos of lectures
  - grades
  - links to Vocareum assignments
- Piazza for
  - announcements
  - discussion boards
    - Use this to ask (and answer) each other / us questions about course material, assignments – not email.
- Vocareum for
  - assignment/lab/lecture code
  - completing and submitting assignments
  - (initial access to an assignment has to go through d2l)

CS 455 Syllabus

- we'll go over highlights today, however, **syllabus is required reading**

- CS 455 goals
  - learn scalable development techniques
  - programming in an OO language (Java)
  - programming with linked lists/dynamic data in C++
  - using Linux (Unix) environment
  - learn some data structures and algorithm analysis

Prerequisites

- You should have a working knowledge of the following ideas:
  - variables
  - assignment statements and expressions
  - if statements
  - loops
  - functions with parameters (calling and writing)
- No prev experience? See me.

How to succeed in CS 455

- Have a "growth mindset"
  – Everyone can succeed!
    … but you need to put in the effort.

- How we facilitate:
  - Interactive lectures
  - Lecture slides
  - Supervised Labs
  - Sample Exams
  - Interactive exercises in readings
  - Programming Assignments
  - Office hours
  - Piazza forum

Textbook

- required textbook for Java:

  Big Java, 7th ed., by Cay Horstmann, Wiley (e-book rental version: ~$39 – see announcements on web page)

  – do readings before lecture

  – sidebar features

  – interactive exercises

- for C++ we'll use web-based material

Computing environment

- Vocareum cloud-based environment:
- For each assgt, on Vocareum:
  - Get code: starter-files available there
  - Develop code: has editor, compile/run on command line (linux shell)
  - Submit code there
  - code is graded on Vocareum
- If you install your own local IDE make sure it's using version 1.8 (8.0) of Java compiler, run-time system, and API.
- Documentation section of course website has info about using a local environment: local javac/java, IntelliJ, or Eclipse, as well as some tutorials and command summaries.

Coursework

- Readings
- Lectures (5%)
  - answer questions in classroom polls (can by done asynchronously)
  - may add different types of activities later
- Exams (55%)
  - MT 1 (10%)   *See week-by-week*
  - MT 2 (15%)   *schedule for exam dates.*
  - Final (30%)
- Programming assignments (30%)
  - 4 - 6 total (30% total)
  - important learn-by-doing for development techniques
- Labs (10%)…

Labs

- 2 hour lab session – not optional
- allowed to work on it ahead of time, but work is due in your lab section (contact me if your ongoing situation does not permit this)
- pair-programming
- only 80% of lab points count for grade
- DEN students:
  - complete on your own time (due Sun night)
  - no partners
  - get lab assistant help by DEN office hours (on Zoom) / piazza / email
- First week only: everyone can submit it by Sunday night; but please attend lab if possible.

Grading

- Fixed-scale grading
  - Not in competition with other students.
  - Everyone can succeed!

- Detailed grading / late policies on the course syllabus

Academic integrity policy

- See Course Syllabus for details.

Some reasons not to cheat

- Dishonest
- USC reputation
- Real world consequences
- Losing learning opportunity
- Academic consequences

Java naming conventions

```java
// CarDriver.java
public class CarDriver {
    public static final double MILES_PER_GALLON = 35.6;

    public static void main(String[] args) {
        double distanceTraveled = 10;
        double gasUsed =
                distanceTraveled/MILES_PER_GALLON;
        System.out.println(gasUsed)
    }
}
```