Lecture 1: Course Introduction

CSE 123: Computer Networks
Alex C. Snoeren
Lecture 1 Overview

- Class overview
  - Expected outcomes
  - Structure of the course
  - Policies and procedures

- A brief overview of Computer Networking
  - High-level concepts
  - An end-to-end example
Personnel

- Instructor: Alex C. Snoeren
  - Office hours Mondays 3:30-4:30pm or by appointment
- Project TAs: Shreyas Anantha-Ramaprasad (P1), Aritra Basu (P2)
  - P1 Office hours Thu 5-7pm
  - P2 Office hours Wed 11:30-12:30; Thu 4-5pm
- Homework TA: Harsh Gondaliya
  - Office hours Mon 5-7pm (and Wed 5-7pm the weeks HWs are due)
- Project coding TA: Brian Li
  - Standing office hours Tue 1:30-6:30pm and Fri 10-3pm
  - In person in the basement (B270A on Tue, B260a on Fri); Zoom while remote
Prereqs

- CSE30, CSE101, and CSE110
  - Undergrads can’t enroll without them
  - We expect it (or equivalent) even for grad students

- Programming experience
  - We will be assigning programming projects in C/C++
  - This course will not teach you C. The TAs will help, but you need to learn it on your own if you don’t already know it.
Expected Outcomes

● This course *will* teach you the *fundamentals* of computer networks:
  - Layering, signaling, framing, MAC, switching, routing, naming, Internetworking, congestion control, router design, etc.
  - At the end of this course you should completely understand what’s actually happening when you view a Web page

● This course *will not* teach you signals and coding
  - Take an EE course to learn about modulation, encoding, etc. on different hardware technologies

● Similarly, we will not cover Internet apps/services
  - CSE124 covers application layer protocols, Web, etc.
  - You *will be able to* pick this up on your own with Google
CSE 123 Class Overview

- Course material taught through *interactive* class lectures, textbook readings, and discussion sections
- Course assignments are
  - Homework questions (based on lecture)
  - Two substantial programming projects (in four parts)
- Discussion section *(Tue 8pm WLH2005/Zoom)*
  - Help you get started on the projects
  - Lecture material and homework
  - Additional networking topics
- Discussion board *(Piazza)*
  - The place to ask questions about lecture, hw, projects, etc.
Peer Instruction

- Studies have shown it helps both with understanding and retention.
- Means you need to come to class prepared, have a clicker, and adhere to a slightly unusual class etiquette.

You must attend class
You must prepare for class
You must participate in class
iClickers: You must bring (only) yours

- Two options
  - Buy an iClicker at the Bookstore (or ebay), in person only
  - Download the iClicker Student app (subscription required)

- Register it following instructions in the Syllabus

- REGISTER iCLICKERs ON CANVAS.

- We will use Zoom polls when remote
Textbook


Homeworks

- There will be 4 homeworks throughout the quarter
  - Reinforce lecture material...no better practice

- Collaboration vs. cheating
  - You *should* discuss homework problems with others
    » You can learn a lot from each other
  - But there is a distinction between collaboration and cheating
  - Rule of thumb: Discuss together in library over Zoom, walk home hang up, and only afterwards write up answers independently
  - Cheating is copying from other student’s homeworks or solution sets, searching for answers on the Web, etc.
  - Suspicious homeworks will be flagged for review
Projects

- There will be four programming projects (really two, each split in half)
  - You will have approximately two weeks to complete each
  - The first is assigned TODAY, discussed TOMORROW

- The projects must be completed in C/C++
  - We will provide skeleton code for you to use
  - Your job is to fill in the interesting/hard parts
  - The TA and tutors will be available to help with coding

- The projects are INDIVIDUAL assignments
  - All code must be your own (not copied from github!)
  - OK to discuss design ideas, NOT OK to share/look at code
  - Projects assigned AND SUBMITTED via private GitHub repo
Computer Labs

- You are welcome to ssh into ieng6
  - Linux running on Intel machines

- You can also use your own machine
  - The project source will work on Windows/OS X (with caveats)
  - Graders will test on ieng6 machines
  - Be sure to test your projects there as well
Exams

- Midterm
  - Friday, February 4th
  - Covers first half of class

- Final
  - Monday, March 14th (8:00-11:00am)
  - Covers second half of class + selected material from first part
    » I will be explicit about the material covered

- No makeup exams
  - Unless dire circumstances (e.g., COVID)

- Exams will be in-person unless UCSD is on-line only at the time
Grading

- Participation: 4%
  - Based on Clicker/Zoom responses; you can miss up to three days w/o penalty
  - Graded participation starts next Monday, January 10th

- Homeworks: 8%

- Midterm: 21%

- Final: 25%

- Projects: 42%
  - Divided evenly among the projects
A Few Class Policies

- Regardless of modality, this class is "live"
  - Synchronous participation is part of your grade; will remain so even if on-line only
  - In-person lectures podcast, Zoom recordings on Canvas for review

- Discussion attendance is strongly encouraged
  - Zoom recording/podcasts may be available on a week-by-week basis at TA’s discretion

- Office hours are NOT RECORDED
  - Please turn your camera on when interacting with TAs/Tutors

- No late assignments
  - HWs submitted via GradeScope, Projects via GitHub
How *Not* To Pass CSE 123

- Do not attend lecture / discussion
  - Class is early, podcast is available, and the material is in the book anyway
  - Lecture material is the basis for exams and directly relates to the projects
  - Besides, the professor thinks he’s funny

- Do not do the homework
  - It’s only 8% of the grade
  - Excellent practice for the exams, and some homework problems are exercises for helping with the project
  - 8% is actually a significant fraction of your grade (easily the difference between an A and a B)
How *Not* To Pass (2)

- Do not ask questions in lecture, office hours, or Piazza
  - Professor is scary, I don’t want to embarrass myself
  - Asking questions is the best way to clarify lecture material at the time it is being presented
  - Office hours and Piazza will be invaluable for homeworks, projects

- Wait until the last couple of days to start a project
  - We’ll have to do the crunch anyways, why do it early?
  - The projects cannot be done in the last couple of days
  - **Repeat:** The projects cannot be done in the last couple of days
# How Not To Pass (3)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>P</th>
<th>NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>43</td>
<td>11</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>30 %</td>
<td>44 %</td>
<td>11 %</td>
<td>7 %</td>
<td>6 %</td>
<td>1 %</td>
<td>0 %</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
<td>P</td>
<td>NP</td>
</tr>
<tr>
<td>20</td>
<td>29</td>
<td>10</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>29 %</td>
<td>42 %</td>
<td>14 %</td>
<td>1 %</td>
<td>10 %</td>
<td>1 %</td>
<td>1 %</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
<td>P</td>
<td>NP</td>
</tr>
<tr>
<td>35</td>
<td>34</td>
<td>12</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>42 %</td>
<td>41 %</td>
<td>14 %</td>
<td>0 %</td>
<td>1 %</td>
<td>1 %</td>
<td>0 %</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
<td>P</td>
<td>NP</td>
</tr>
<tr>
<td>30</td>
<td>17</td>
<td>18</td>
<td>5</td>
<td>7</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>38 %</td>
<td>22 %</td>
<td>23 %</td>
<td>6 %</td>
<td>9 %</td>
<td>0 %</td>
<td>1 %</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
<td>P</td>
<td>NP</td>
</tr>
<tr>
<td>27</td>
<td>36</td>
<td>9</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>27 %</td>
<td>36 %</td>
<td>9 %</td>
<td>2 %</td>
<td>25 %</td>
<td>0 %</td>
<td>1 %</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
<td>P</td>
<td>NP</td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>12</td>
<td>4</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>36 %</td>
<td>26 %</td>
<td>20 %</td>
<td>7 %</td>
<td>11 %</td>
<td>0 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>
Class Web Page

- All Zoom links are on Canvas, everything else is here
  
  http://www.cs.ucsd.edu/classes/wi22/cse123-a/

  - Course syllabus and schedule (updated as quarter progresses)
  - Announcements
  - Homework handouts
  - Project information

- Class will be podcast
  - Lecture slides posted to website immediately after class
  - Podcast is for review, not intended as a substitute for lecture/Zoom
Questions

- Before we start the material, any questions about the class structure, contents, etc.?
For Next Class…

- Browse the course website on Canvas
  - http://www.cs.ucsd.edu/classes/wi22/cse123-a/

- Read Chapter 1.3 and 2.3

- Wednesday: Layers and Framing

- Drop now or plan to stick it out!