Introduction

Prof. Hakim Weatherspoon
CS 3410
Computer Science
Cornell University

Cornell CIS
COMPUTING AND INFORMATION SCIENCE

[Weatherspoon, Bala, Bracy, and Sirer]

First Clicker Question!

How excited are you to take this class??

A. I've been waiting my whole life to take 3410. I couldn't sleep last night I'm so excited.
B. I'm excited.
C. I've heard good things, but my excitement is on hold.
D. Excited, not sure. Anxious? Yes.
E. Help! I'm a CS minor trapped in this class. Please rescue me. (Seriously.)

Who am I?

Hakim Weatherspoon

Undergrad: Computer Engineering at University of Washington

PhD: Computer Science, Distributed Systems at University of California, Berkeley

Academia: Cornell
- Taught 3410 and 4410 more than 10 times over 10 years!

Second Clicker Question!

Who are you?

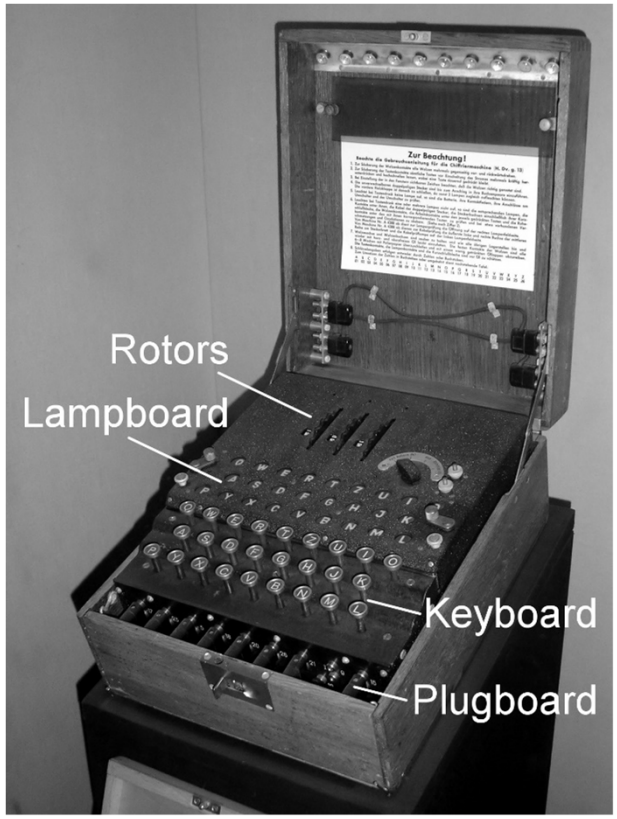
A. Freshman
B. Sophomore
C. Junior
D. Senior
E. Other

“Sometimes it is the people that no one imagines anything of
who do the things that no one can imagine”

--quote from the movie The Imitation Game

“Can machines think?”

-- Alan Turing, 1950 Computing Machinery and Intelligence

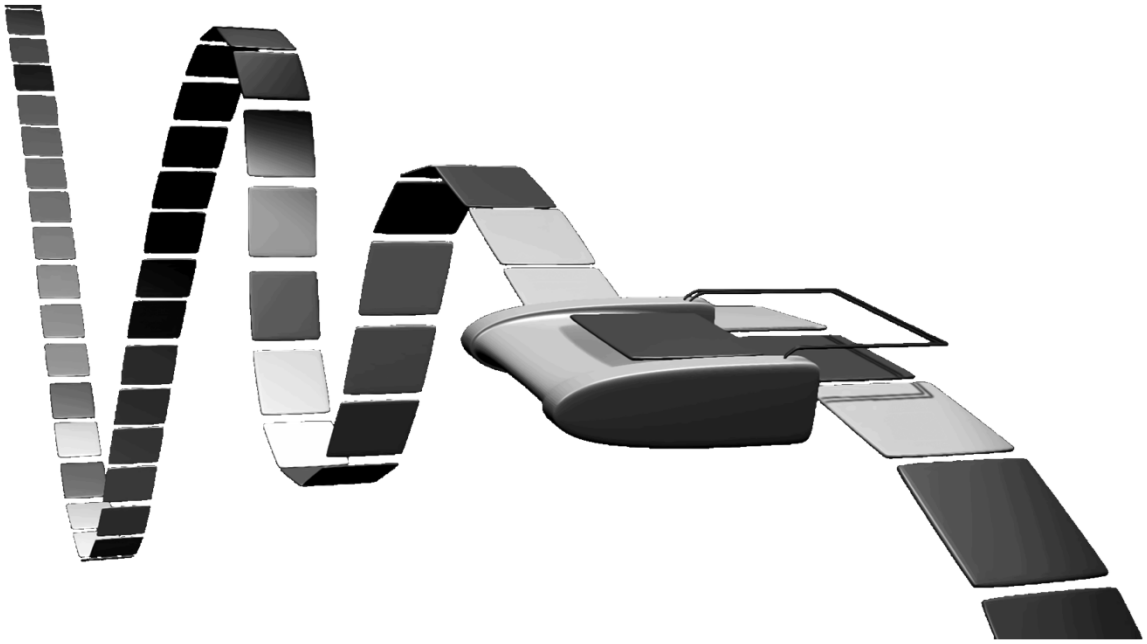


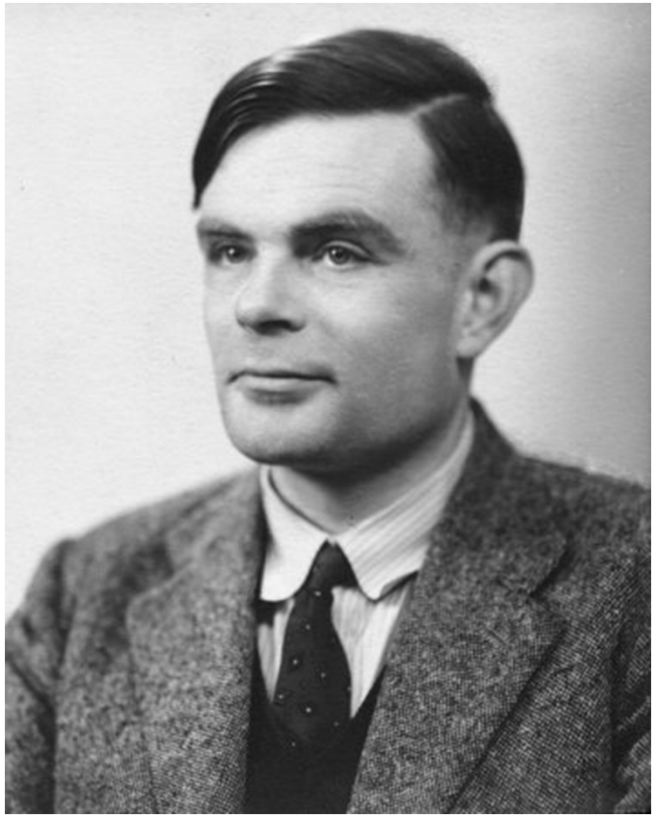
Enigma machine

Used by the Germans during World War II to encrypt and exchange secret messages

The Bombe

used by the Allies to break the German Enigma machine during World War II





Turing Machine
1936

Alan Turing

= abstract model for CPU that can simulate any algorithm

Course Objective

- Bridge the gap between hardware and software
  - How a processor works
  - How a computer is organized

- Establish a foundation for building higher-level applications
  - How to understand program performance
  - How to understand where the world is going

How class is organized

- Before you take this class…
- Lecture
- Lab Sections
- Office Hours
- Online Tools
- Grading
- Who’s Who

Pre-requisites and scheduling

- ***CS 2110 required*** (OO Programming & Data Structures)
  - Must have satisfactorily completed CS 2110
  - *Cannot take CS 2110 concurrently with CS 3410*

- CS 3420 (ECE 3140) (Embedded Systems)
  - Take either CS 3410 ***or*** CS 3420
    - both satisfy CS and ECE requirements
  - *However, Need ENGRD 2300 to take CS 3420*

- CS 3110 (Data Structures and Functional Programming)
  - Not advised to take CS 3110 and 3410 together
  - Lectures scheduled at the same time so you can't

Pre-requisites and scheduling

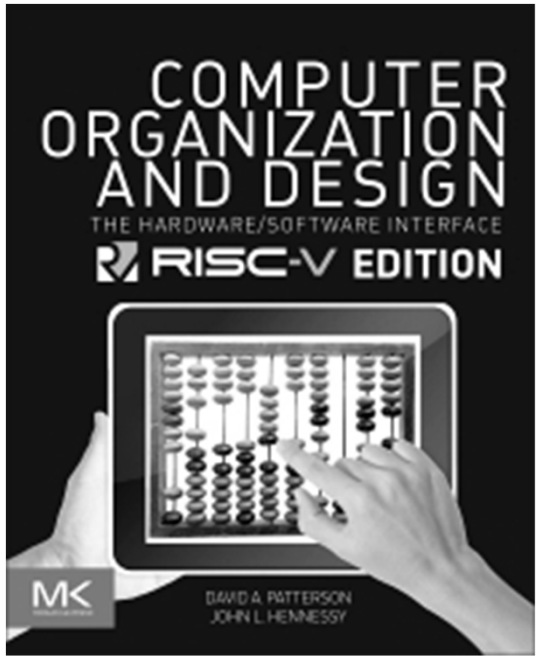
- CS 2043 (UNIX Tools and Scripting)
  - 2-credit course will greatly help with CS 3410.
  - Spring only

- CS 2024 (C++)
  - 1 to 2-credit course will greatly help with CS 3410

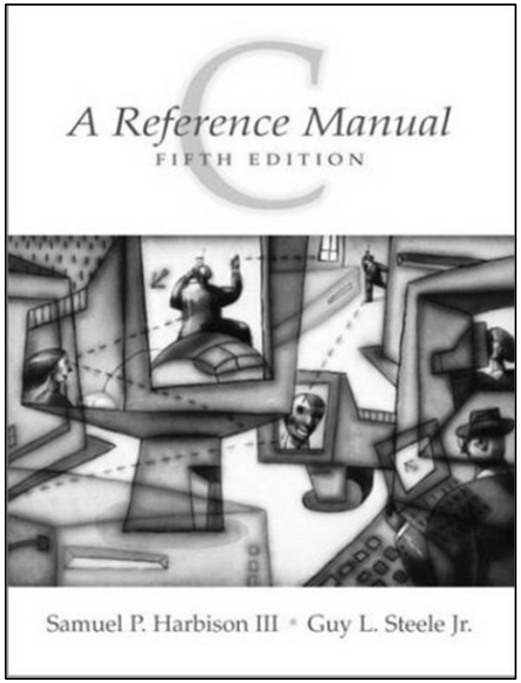
- ECE 2400 (Computer Systems Programming)
  - New course started last semester
  - Lot of overlap with 2110, 2043, 2024, and 3410

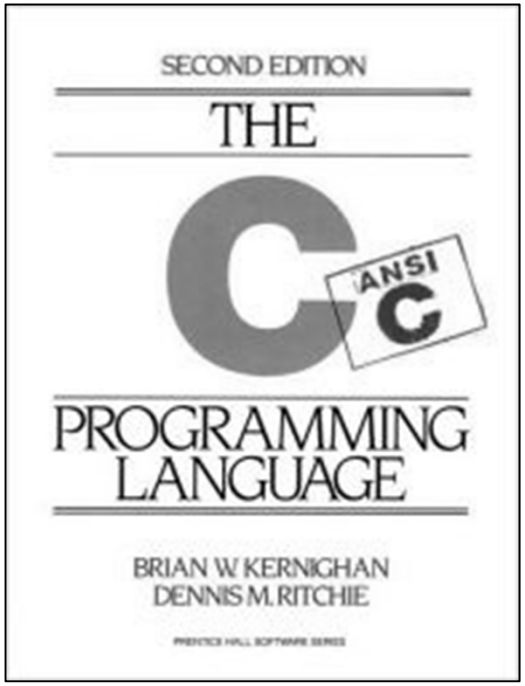
Required Textbook

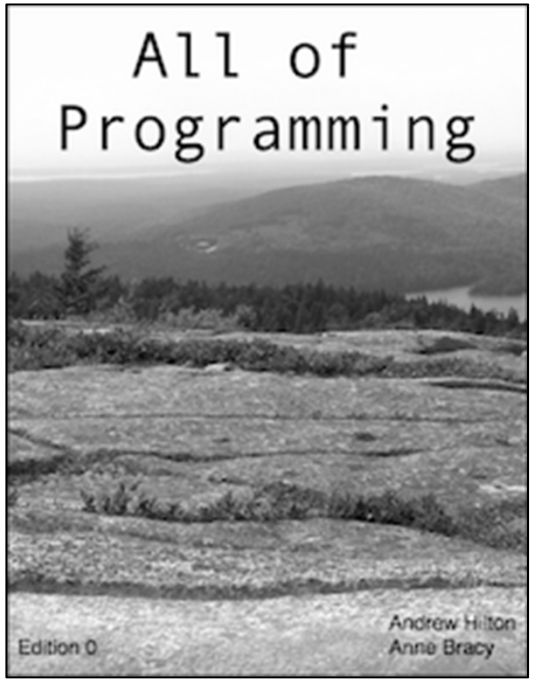
- Computer Organization and Design RISC-V Edition
- 1st Edition



C Resources (Optional)







Lectures

- Tuesday & Thursday 10:10-11:25
- 155 Olin Hall

- iClicker: Bring to every Lecture
- (starting today!)
- missing a few times is okay
- No cell phones (except for Reef Polling)
- No Laptops

Active Learning

- Interactive Textbook
- Clickers
- Activity Sheets
- Classroom DJ, Breaks
- Autograders
- Lab Sections
- You ask Questions
- I ask Questions

How class is organized

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Lab Sections Start this Week!

Section	Day	Time	Location
214	Tuesday	1:25pm - 2:40pm	Carpenter Hall 104 blue
201		2:55pm - 4:10pm	Carpenter Hall 104 blue
208	Wednesday	11:40am - 12:55pm	Carpenter Hall 104 blue
212		1:25pm - 2:40pm	Carpenter Hall 104 blue
202		3:35pm - 4:50pm	Carpenter Hall 104 blue
203	Thursday	11:40am - 12:55pm	Carpenter Hall 104 blue
204		2:55pm - 4:10pm	Carpenter Hall 104 blue
209	Friday	11:40am - 12:55pm	Phillips Hall 318
213		1:25pm - 2:40pm	Phillips Hall 318

Office Hours

My Office Hours:

- Mondays 1:15-2:15pm, Tuesday 1:15-2:15pm

TA Office Hours:

- Always in Rhodes Hall, Rooms 400 & 402
- Every day of the week
- See Google Calendar on course website
- Start Sunday

Awesome Course Staff on the website

Communication

Website
- http://www.cs.cornell.edu/courses/cs3410/2018sp

Email
- cs3410-prof@cornell.edu
- The email alias goes to me, or come to my office hours

Assignments
- CMS: http://cmsx.csuglab.cornell.edu

Newsgroup
- http://www.piazza.com/cornell/spring2019/cs3410
- For students

iClicker
- http://atcsupport.cit.cornell.edu/pollsrvc/

Personal Emergencies

- Please email cs3410-prof@cornell.edu

- Get Help
- Get Documentation

- **The earlier the better**

Online Tools

- http://www.cs.cornell.edu/courses/cs3410/2019sp
- Office Hours / Consulting Hours
- Lecture slides, schedule, and Logisim
- CSUG lab access (esp. second half of course)
- Finalized Schedule will be up by next lecture (readings by Friday)
- Submit to CMS.

- This class is relentless.
- Stay on top of it!

Course Management

- Github for assignment dissemination
- CMS for submissions & grades

Labs and Projects

- Labs Assignments
  - Weekly
  - To be done in lab

- Projects
  - 2 Individual Projects: you work alone
  - 4 Pair Projects: you work in pairs
  - Partners will be assigned

Exams

- Two Prelims
  - March 5 and May 2

Administrative Assistant

- Corey Torres <ct365@cornell.edu>, Gates 401
- Please give accommodation letters to her within the first 2 weeks

Grading

- Approximately:

- Practicum ~50%
  - Labs 10%
  - Projects 40%
- Lecture ~50%
  - Prelims 35%
  - Zybook 10%
  - Participation 5%

Grading

- Regrade policy
  - Within 1 week of the assignment (or exam)'s return

- Late Policy
  - Each person has a total of ***5*** "Slip days"
  - Max of ***2*** slip days for any project
  - Cannot ever submit later than 48 hours late
  - Handled by CMS, need to check implementation
    - For pair projects, slip days deducted from all partners
    - 25% deducted per day late after slip days are exhausted
  - Cannot use on Labs. (Lowest 2 lab scores will be dropped.)

Who am I, Revisited

Nice *and* a vertebrate:

- **Piazza posts** about course material *very welcome*
- Visits to my office hours *very welcome*

- Correspondence about use of slip days, your alarm clock, your all-nighters, your alcohol intake, your car battery, *etc. etc.* ***not welcome***

- No exceptions
- Deadlines are firm

Academic Integrity

- All submitted work must be your own
  - OK to study together, but do not share solultions
  - Cite your sources
- Project groups submit joint work
  - Same rules apply to projects at the group level
  - Cannot use someone else's solution

- Stressed? Tempted? Lost?
  - Come see us before due date!

Plagiarism in any form will not be tolerated

Academic Integrity Rules of Thumb

1. Looking at code that we didn't give you?
   STOP
   - Protect yourself. Solutions are hard to un-see

2. White board rule of collaboration
   - Work on white board, take no notes
   - Erase, go home, watch an episode of Stranger Things
   - Code up by yourself

Questions so far?