



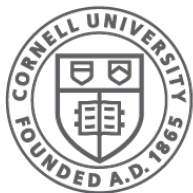
# Introduction

**Prof. Hakim Weatherspoon**

**CS 3410**

Computer Science

Cornell University



**Cornell CIS**  
COMPUTING AND INFORMATION SCIENCE

[Weatherspoon, Bala, Bracy, and Sierer]

# 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?

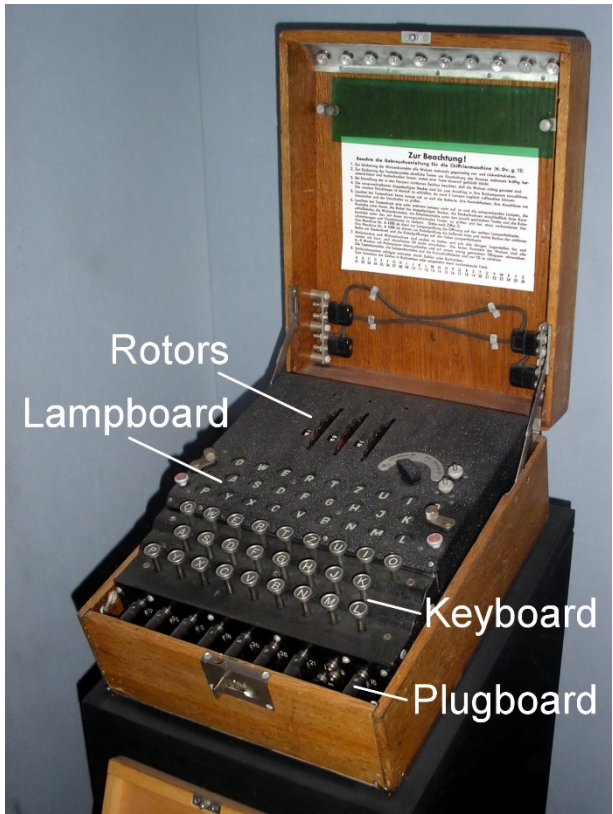
- A. Freshman
- B. Sophomore
- C. Junior
- D. Senior
- E. Other

“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

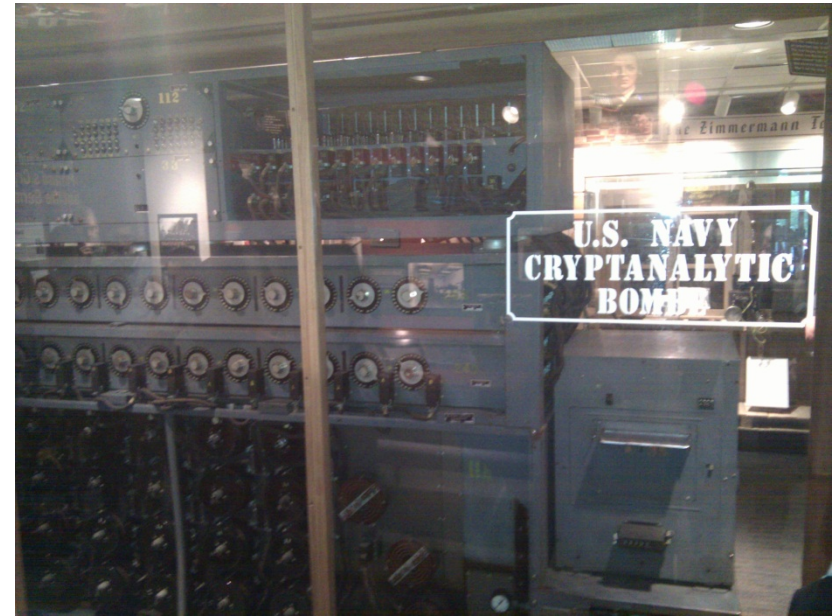
# “Can machines think?”

-- Alan Turing, 1950 Computing Machinery and Intelligence



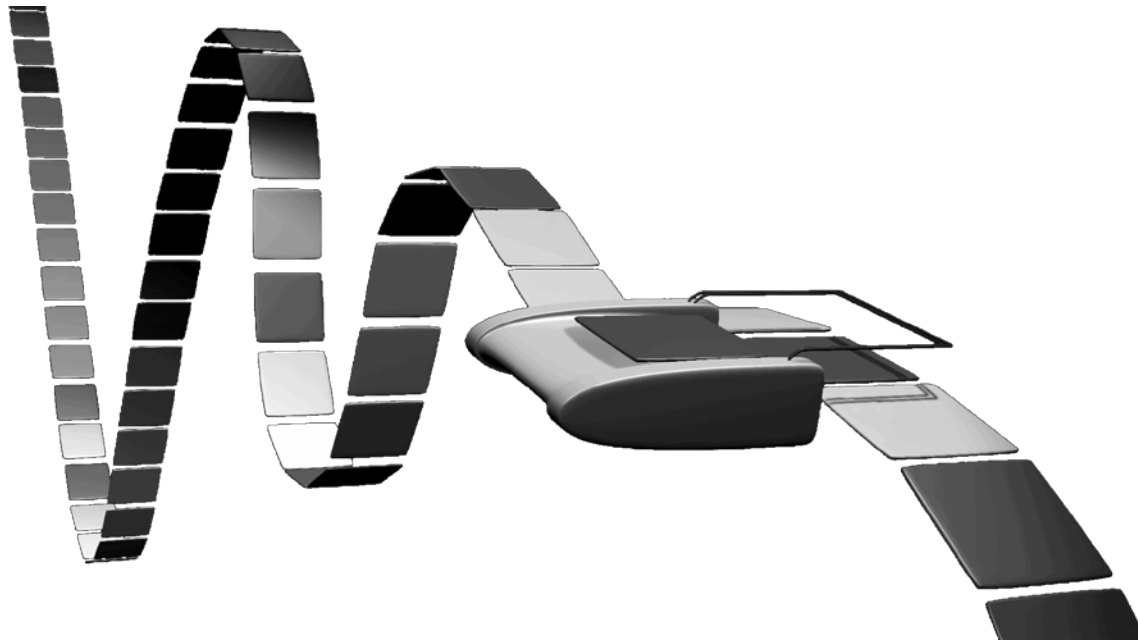
## Enigma machine

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



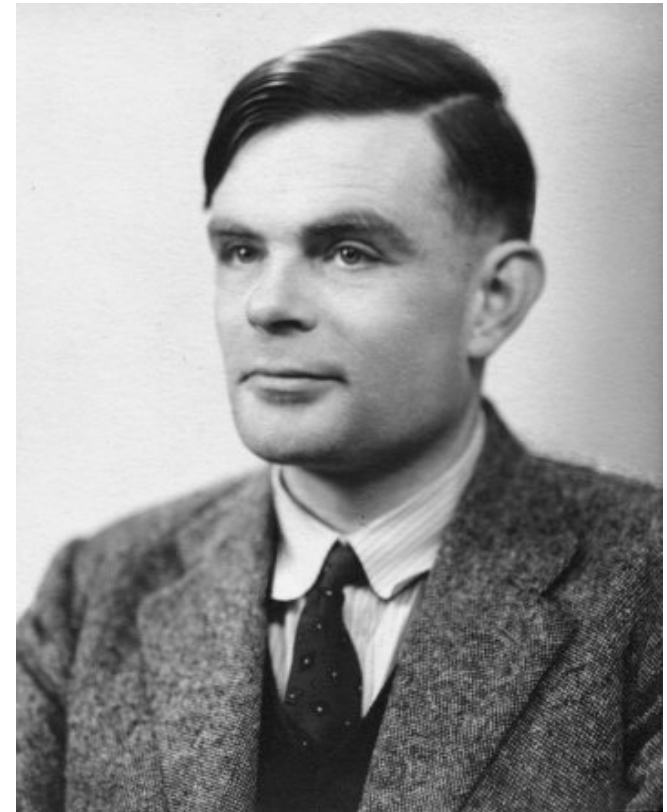
## The Bombe

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



## Turing Machine 1936

= abstract model for CPU that can simulate any algorithm



Alan Turing



# 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

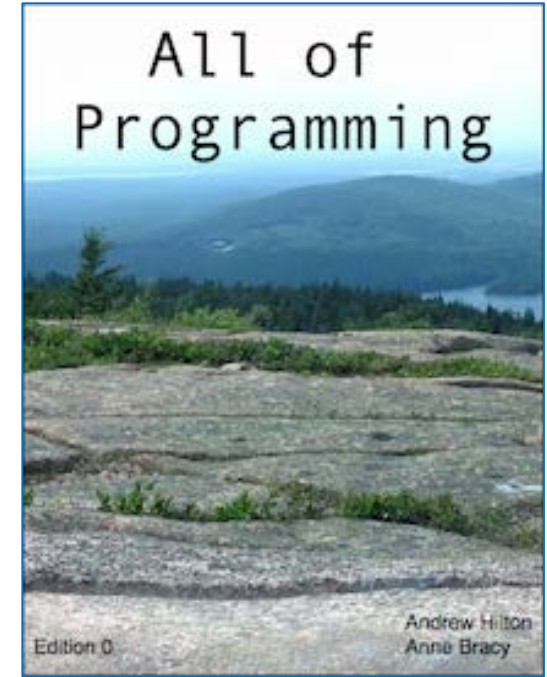
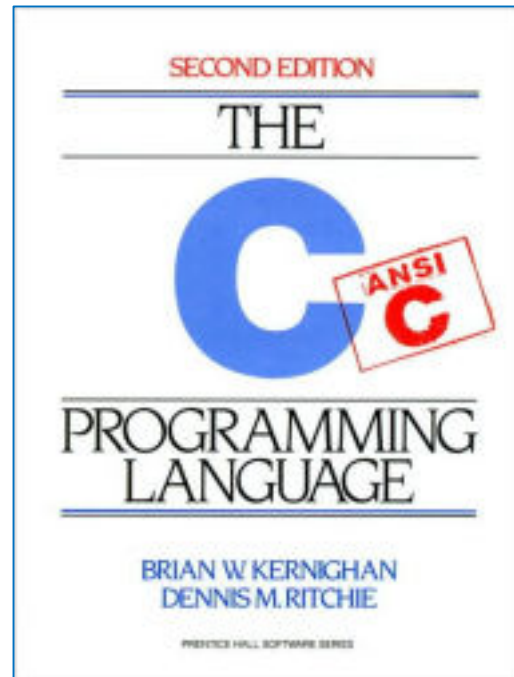
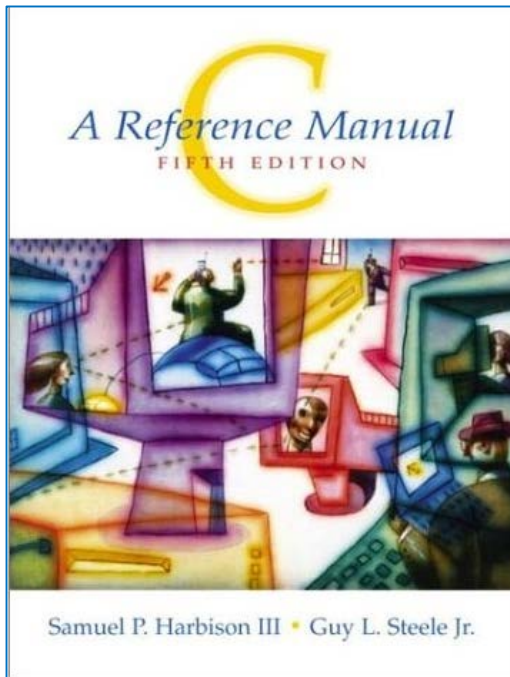
- CS 2043 (UNIX Tools and Scripting)
  - 2-credit course will greatly help with CS 3410.
  - Spring only
- CS 2024 (C++)
  - 1 to 2-credit course will greatly help with CS 3410
- ECE 2400 (Computer Systems Programming)
  - New course started last semester
  - Lot of overlap with 2110, 2043, 2024, and 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



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# Lab Sections Start this Week!

<b>Section</b>	<b>Day</b>	<b>Time</b>	<b>Location</b>
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](mailto: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/pollsrcv/>

# Personal Emergencies

- Please email [cs3410-prof@cornell.edu](mailto: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 solutions
  - **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?

