

CS50 Orientation

Fall 2021

Heads team

- David J. Malan '99, Instructor
- Bernie Longboy, Senior Preceptor
- Carter Zenke, Preceptor

Heads team

- Emma Humphrey '22, Head TF
- Iman Alshawk '23, Head CA
- Connor Leggett '23, Head CA
- Phyllis Zhang '23, Head CA

2/3

of CS50 students have never taken CS before

what ultimately matters in this course is not so much where you end up relative to your classmates but where you end up relative to yourself when you began

Getting started

- Browse website at cs50.harvard.edu
- Read syllabus at cs50.harvard.edu/college/2021/fall/syllabus
- Read FAQs at cs50.harvard.edu/college/2021/fall/faqs

Expectations

- Attend eleven lectures.
- Complete nine quizzes.
- Attend ten sections.
- Complete eight labs.
- Solve ten problem sets.
- Take one test.
- Design and implement a final project.

Assessment

Problem Sets	40%
Quizzes	10%
Labs	10%
Test	20%
Final Project	10%
Attendance (Lectures, Sections)	10%

Axes

- Correctness
- Design
- Style

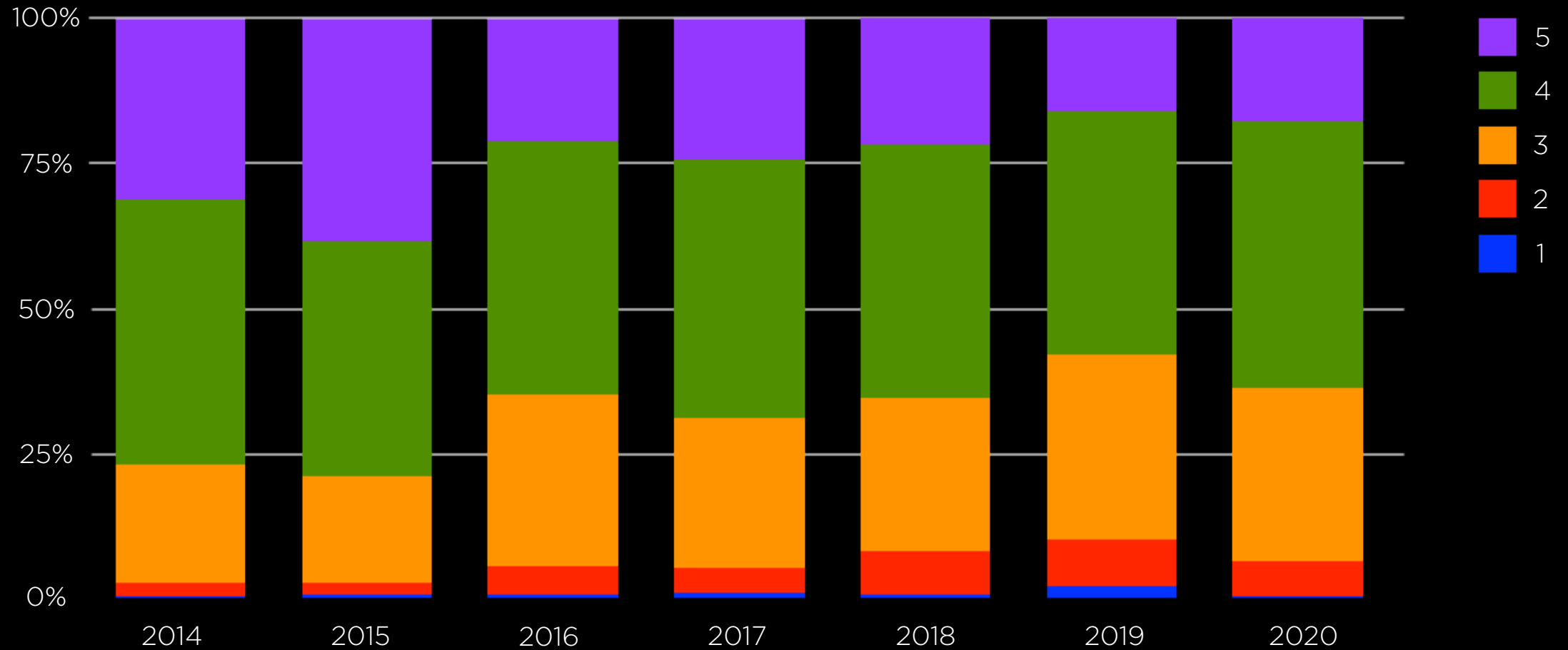
Assessment

- SAT/UNS
- Letter Grade

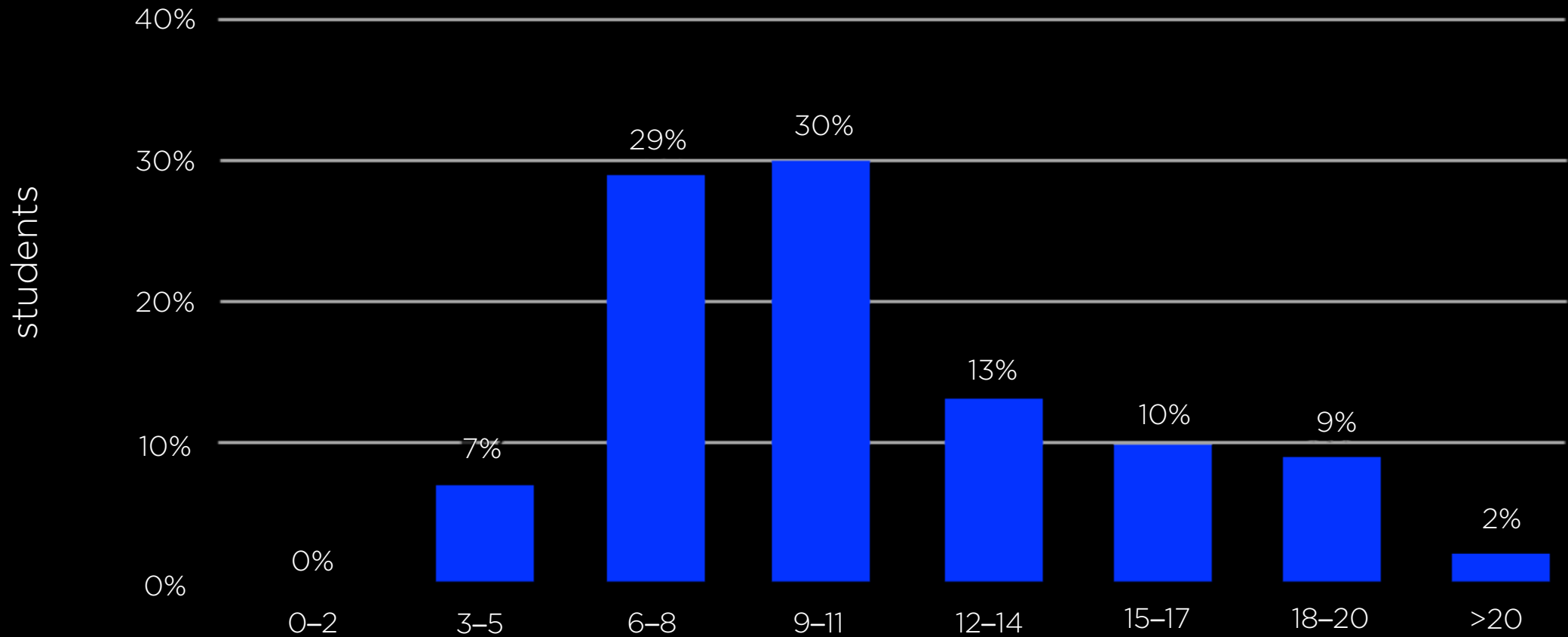
Assessment

- CS concentrators may take CS50 SAT/UNS.
- First years may take both CS50 and a Freshman Seminar SAT/UNS.
- You can take CS50 (SAT/UNS or for letter grade) to fulfill the Gen Ed Science distribution requirement or QRD.
- See FAQs on cs50.harvard.edu for concentrations that require letter grades.

Difficulty



Workload



Academic Honesty

cs50.ly/honesty

Academic Honesty

- “...be reasonable...”
- “...when asking for help, you may show your code to others, but you may not view theirs...”

Regret Clause

- **Regret clause.** If you commit some act that is not reasonable but bring it to the attention of the course's heads within 72 hours, the course may impose local sanctions that may include an unsatisfactory or failing grade for work submitted, but the course will not refer the matter for further disciplinary action except in cases of repeated acts.

Course Structure

CS50 Schedule

Mon

Lecture

Tue

Section

Quiz

Wed

Section
Tutorials

Thu

Tutorials

Lab

Fri

Tutorials

Sat

Tutorials

Sun

Tutorials
OHs

Problem
Set

Lectures

- Mondays, 1:30pm–4:15pm ET at Sanders
- Simultaneously enrolled students can watch on-demand later

Lectures

- Notes
- Shorts
- Slides
- Source Code
- Video

Lectures

This is CS50

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Fall 2021

🔍 Search

Week 0 🐱

Week 1

Week 2

🗣️ Ed Discussion for Q&A

FAQs

Final Projects

Office Hours

Orientation

Problem Sets

Staff

Syllabus

Tutorials



📁 Lecture

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- Problem Set 0

Notes

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Problem Sets

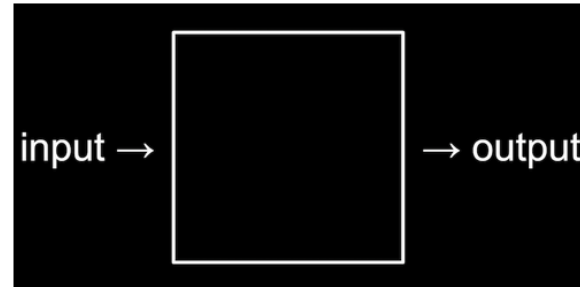
Staff

Syllabus

Tutorials

What is computer science?

- Computer science is fundamentally problem solving, but we'll need to be precise and methodical.
- We can think of **problem solving** as the process of taking some input (a problem we want to solve) and generate some output (the solution to our problem).



- To begin doing that, we'll need a way to represent inputs and outputs, so we can store and work with information in a standardized way.

Representing numbers

- To count the number of people in a room, we might start by using our fingers, one at a time. This system is called **unary**, where each digit represents a single value of one.
- To count to higher numbers, we might use ten digits, 0 through 9, with a system called **decimal**.
- Computers use a simpler system called **binary**, with just two digits, 0 and 1.
- For example, in binary this would be 0:

0 0 0

- And this would be 1:

0 0 1

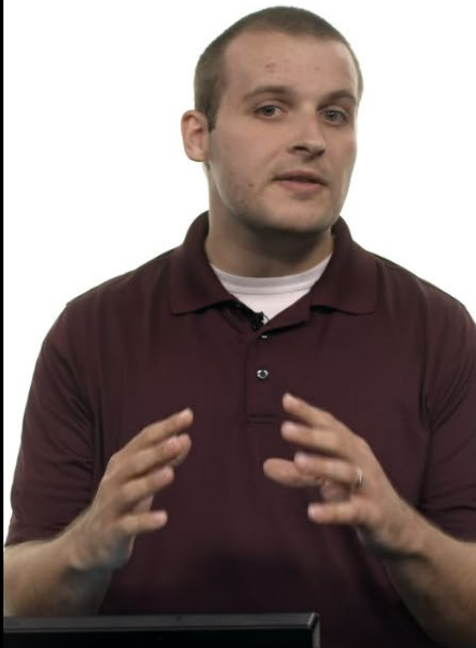
- (We don't need the leading zeroes, but we'll include them to see the patterns more easily.)

- Since there is no digit for 2, we'll need to change another digit to represent the next number:

Shorts

CS50 Video Player

Shortcuts Snacks ▾



Conditionals

```
if (boolean-expr1)
{
    // first branch
}
if (boolean-expr2)
{
    // second branch
}
if (boolean-expr3)
{
    // third branch
}
else
{
    // fourth branch
}
```

- It is also possible to create a chain of non-mutually exclusive branches.
- In this example, only the third and fourth branches are mutually exclusive. The `else` binds to the nearest `if` only.




Slides

CS50 2021 - Lecture 0 - Scratch ☆ 📄 🔄

File Edit View Help

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1 This is CS50

2 

3 what ultimately matters in this course is not so much where you end up relative to your classmates but where you end up relative to yourself when you begin

4 2/3
of CS50 students have never taken CS before

5 input → → output

6 000

7

```
/*
 * hello.c
 * Assignment: Assignment 1
 * Name: David Malan
 * A program to print "Hello, CS50!" on the screen.
 */

#include <stdio.h>

/*
 * main
 */

void main ()
{
    printf ("Hello, CS50!\n");
    exit (0);
}

/*
 * end of hello.c
 */
```

(-2) for hello.out, we wanted output of hello, not of make.

Present Share

Source Code

CS50 CDN

cdn.cs50.net/2021/fall/lectures/0/src0/

.. /

hello0.sb3	download	torrent	40.4 KB	6 days ago
hello1.sb3	download	torrent	43.2 KB	6 days ago
hello2.sb3	download	torrent	42.3 KB	6 days ago
Ivy's Hardest Game - bouncing.sb3	download	torrent	55.1 KB	6 days ago
Ivy's Hardest Game - follow.sb3	download	torrent	57.1 KB	6 days ago
Ivy's Hardest Game - Harvard.sb3	download	torrent	3.7 MB	6 days ago
Ivy's Hardest Game - moving.sb3	download	torrent	55.9 KB	6 days ago
Ivy's Hardest Game - Yale.sb3	download	torrent	3.7 MB	6 days ago
meow0.sb3	download	torrent	40.5 KB	6 days ago
meow1.sb3	download	torrent	40.6 KB	6 days ago
meow2.sb3	download	torrent	40.6 KB	6 days ago
meow3.sb3	download	torrent	40.8 KB	6 days ago

Quizzes

- Short, open-book, checks for understanding
- Due day after lecture at 11:59am ET
- Posted just before lecture—can complete as both concurrent lecture guide and post-lecture reflection
- Complete via Gradescope

Labs

- Short practice problems in sections
- Due Thursdays at 11:59pm ET
- Assessed on completion
- Start in section, finish in section

Problem Sets

- Due Sundays at 11:59pm ET
- Assessed on correctness, design, and style

Final Project

- Opportunity to develop your own piece of software in groups of up to three.

Late Policy

- Late submission (of quizzes, problem sets, the test, and the final project's milestones) will be penalized at a rate of 0.1% per minute.
- However, you may grant yourself one 3-day (72-hour) extension during the term for any one problem set.
- Form on course website, in syllabus.

Sections

- 2 hours on Tuesdays, Wednesdays, or Thursdays
- Attendance expected
- First 60 minutes: conceptual review with activities, answering student questions
- Last 60 minutes: lab walkthrough

Tutorials

- Wednesdays–Sundays, 60-minute sessions in-person
- By-appointment opportunities for help
- 1:6 staff-to-student ratio
- Sign up at cs50.harvard.edu

Support

- 47 teaching fellows, 40 course assistants
- 127 staff-hours of tutorials per week
- Ed Q&A Forum at cs50.harvard.edu

Ed Q&A Forum

ed CS50 – Discussion

New Thread

Search

Filter

COURSES

- CS50
- CS50x 10518
- Feedback CS50 160
- Playground CS50 54

CATEGORIES

- General
- Final Project
- Labs
- Lectures
- Problem Sets
- Quizzes
- Test

Pinned

- Hello, world! **General** David J. Malan **STAFF** 11d 540 51
- Welcome from CS50's staff! **General** Carter Zenke **STAFF** 10d 63 (1 new) 63

This Week

- Super Sections **General** Anonymous 1d 7 (1 new) 1

Last Week

- Scratch Project Can not Save **Problem Sets - Scratch** Steven Tilley 2d 2
- So if you accidentally delete a sprite, does ... **Problem Sets - Scratch** Anonymous 2d 5

Welcome from CS50's staff! #2

Carter Zenke **STAFF** 10 days ago in **General** 2,528 **UNPIN** **STAR** **WATCHING** **VIEWS**

63

Welcome, welcome, welcome, everyone! For those whom I haven't yet met, I'm Carter, CS50's Preceptor. I stepped into my first computer science course wondering whether I belonged in the field. Now I'm happy to be among those helping you build your own place, too. Indeed, we have a great many folks on staff who are thrilled to be part of your CS50 journey this year. I'll let them chime in with their own welcomes and stories about finding a home in CS50 and in computer science!

Comment Edit Delete Endorse ...

Add comment

Sort by Newest

Marwa Albaadani **STAFF** 2 days ago

Hi everyone!

I'm Marwa and I'm a junior in Kirkland 🙋

I'm concentrating in CS and Philosophy with a secondary in Mind Brain and Behavior

What questions do you have?