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

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Problem Sets</td>
<td>40%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Labs</td>
<td>10%</td>
</tr>
<tr>
<td>Test</td>
<td>20%</td>
</tr>
<tr>
<td>Final Project</td>
<td>10%</td>
</tr>
<tr>
<td>Attendance (Lectures, Sections)</td>
<td>10%</td>
</tr>
</tbody>
</table>
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 SEAS distributional requirement or the QRD requirement.
- See FAQs on cs50.harvard.edu for concentrations that require letter grades.
Workload

- 0%
- 10%
- 20%
- 30%
- 40%

- 0–2
- 3–5
- 6–8
- 9–11
- 12–14
- 15–17
- 18–20
- >20

- 0%
- 7%
- 29%
- 30%
- 13%
- 10%
- 9%
- 2%
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
Wed: Section Tutorials
Thu: Tutorials
Fri: Tutorials
Sat: Tutorials
Sun: Tutorials OHs

Mon: Quiz
Tue: Lab
Wed: 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
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:

  \[
  \begin{array}{c|c}
  0 & 0 \\
  \end{array}
  \]

- And this would be 1:

  \[
  \begin{array}{c|c}
  0 & 1 \\
  \end{array}
  \]

  (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.
Conditionals

```java
if (boolean-expr1)
{
    // first branch
} else
{
    // second branch
} else
{
    // 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.
This is CS50

Assignment: Assignment 1
Name: David Malan

A program to print 'Hello, CS50!' on the screen.

```c
#include <stdio.h>

/*

*/

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

/*

*/

@end

For hello.c, we used output of hello, not of make.
### Source Code

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<th>Size</th>
<th>Date</th>
</tr>
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<td>5 days ago</td>
</tr>
<tr>
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</tr>
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<td>hello2.sb3</td>
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</tr>
<tr>
<td>Ivy's Hardest Game - bouncing.sb3</td>
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</tr>
<tr>
<td>meow3.sb3</td>
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</table>
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
Welcome from CS50's staff! #2

Carter Zenke • STAFF
10 days ago in General

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

Marwa Albaadari • 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?