This is CS50
2/3 of CS50 students have never taken CS before.
Ballot
Alice

Ballot
Alice

Ballot
Bob

Ballot
Bob

Ballot
Charlie
## Big Board Speller

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Time</th>
<th>Load</th>
<th>Check</th>
<th>Size</th>
<th>Unload</th>
<th>Memory</th>
<th>Heap</th>
<th>Stack</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Elijah Tai</td>
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<td>0.000</td>
<td>0.000</td>
<td>11.8 kB</td>
<td>4.6 kB</td>
<td>7.2 kB</td>
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<tr>
<td>2</td>
<td>Matthew Shabet</td>
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<td>0.478</td>
<td>4.959</td>
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<td>0.000</td>
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<tr>
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<td>Thomas Ballatore</td>
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<td>0.934</td>
<td>4.924</td>
<td>0.000</td>
<td>0.000</td>
<td>7.9 kB</td>
<td>4.6 kB</td>
<td>3.2 kB</td>
</tr>
<tr>
<td>5</td>
<td>Peter Phan</td>
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<td>0.640</td>
<td>5.228</td>
<td>0.000</td>
<td>0.009</td>
<td>8.0 MB</td>
<td>8.0 MB</td>
<td>2.9 kB</td>
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<tr>
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<td>Katherine Engelman</td>
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<td>0.777</td>
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<td>0.009</td>
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<td>8.0 MB</td>
<td>3.0 kB</td>
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<tr>
<td>7</td>
<td>Ashley Zhuang</td>
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<tr>
<td>8</td>
<td>Sayak Maity</td>
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<td>5.428</td>
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<td>0.004</td>
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<td>2.9 kB</td>
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<tr>
<td>9</td>
<td>Jack Boettcher</td>
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<td>0.216</td>
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<td>8.0 MB</td>
<td>3.0 kB</td>
</tr>
</tbody>
</table>
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
CS50

Brian Kernighan
bwr@das
110-D Pierce Hall
Mon 2-3, Tue 10-11

Review Session SciCtr A, Friday

READ: Roberts, Ch 1-2
Cormen, Ch 11/8/19
Functions - instructions that do the work.

`<usr/include/stdio.h>` library is here
`<we/stdio.h>` - workroom.

Arguments - info that is passed from one function to another, to have something done by / performed on it.
Functions - instructions that do the work.

`/usr/include/stdio.h` is here

`wc stdio.h = word count`

Arguments - info that's passed from one function to another to have something done by / performed on it.
Functions - instructions that do the work.

/usr/include/stdio.h - library is here
  wc stdio.h - word count

Arguments - info that's passed from one function to another to have something done by / performed on it.
Functions - instructions that do the work.

`/usr/include/stdio.h` - library is here
`wc stdio.h` - word count

Arguments - info that's passed from one function to another, to have something done by/ performed on it.
input → output
A
65
128514
Algorithm - precise sequence of steps for getting something done.

Imp't: Precision; correctness.

Programming: process of taking an algorithm and putting it into a language a computer can process.

Fortran - designed to make working with physics, mechanics, problems easy. A compiler translated the high-level language into low-level assembly language.

1960s - System programming languages. People could write OSes - moved away from assembly language.

1970s - Object-oriented languages. Made it easier for people to code - harder to make mistakes. Still not impossible, of course!

High level - takes care of more details. Has more control. Programmable hands.
Algorithm - precise sequence of steps for getting something done.

Imp't: Precision!
Correctness!

Programming: process of taking an algorithm and putting it into a language a computer can process.
Algorithm - Precise sequence of steps for getting something done.

Imp't: Precision!
Correctness!

Programming: Process of taking an algorithm and putting it into a language a computer can process.
Algorithm - precise sequence of steps for getting something done.

Imp't: Precision!
Correctness!

Programming: Process of taking an algorithm and putting it into a language a computer can process.
algorithms
Algorithm - precise sequence of steps for getting something done.

Imp’t: Precision!

Correctness!

Programming: Process of taking an algorithm and putting it into a language a computer can process.
Algorithm - precise sequence of steps for getting something done.

Imp't: Precision!
Correctness!

Programming: Process of taking an algorithm and putting it into a language a computer can process.
Hi
information
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
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<tr>
<td>2.</td>
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<tr>
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<td>4.</td>
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<td>6.</td>
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<td>abc123</td>
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<td>9.</td>
<td>password1</td>
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<tr>
<td>10.</td>
<td>12345</td>
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</tbody>
</table>
information
You’ve gone incognito

Now you can browse privately, and other people who use this device won’t see your activity. However, downloads and bookmarks will be saved. Learn more

Chrome won’t save the following information:
- Your browsing history
- Cookies and site data
- Information entered in forms

Your activity might still be visible to:
- Websites you visit
- Your employer or school
- Your internet service provider
information
DELETE FROM snaps WHERE id = ?;
UPDATE snaps SET deleted = true WHERE id = ?;
information
information
cs50.harvard.edu wants to

Know your location

Block  Allow
Tracks
web programming

with HTML, CSS, and JavaScript
(plus Python and SQL)
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Shares</th>
<th>Price</th>
<th>TOTAL</th>
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<tbody>
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<tr>
<td>CASH</td>
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<td>$9,712.48</td>
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</tbody>
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**$10,000.00**

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mobile app development

for iOS with Swift
for Android with Java
Charizard

#006

Fire   Flying

Charizard flies around the sky in search of powerful opponents. It breathes fire of such great heat that it melts anything. However, it never turns its fiery breath on any opponent weaker than itself.
Charizard

#006

Fire

Flying

Charizard flies around the sky in search of powerful opponents. It breathes fire of such great heat that it melts anything. However, it never turns its fiery breath on any opponent weaker than itself.
Notes

Grocery list

Class schedule
Grocery list
Class schedule
game development

with Lua
Final Project
Python

python.org
Visual Studio Code

code.visualstudio.com
Xcode

developer.apple.com/xcode
Android Studio

developer.android.com/studio
CS50 Hackathon
CS50 Fair
Staff
2/3 of CS50 students have never taken CS before
more comfortable

100%
This was CS50