This is CS50
68% 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, in Week 10, end up relative to yourself in Week 0.
representation
ASCII
H
72
1001000

I
73
1001001

!
33
100001
abstraction
a
Unicode
UTF-8
RGB
input → [blank] → output
algorithms
The graph shows the relationship between the size of a problem and the time it takes to solve it. The time to solve is plotted on the y-axis, and the size of the problem is plotted on the x-axis.

There are three lines on the graph:

1. A red line labeled $n$, which shows that as the size of the problem increases, the time to solve it also increases linearly.
2. A yellow line labeled $n/2$, which shows that as the size of the problem increases, the time to solve it increases at a slower rate compared to the red line.
3. A green line labeled $\log n$, which shows that as the size of the problem increases, the time to solve it increases at an even slower rate compared to the yellow line.

This indicates that problems with $\log n$ complexity are more efficient in terms of time than those with linear or $n/2$ complexity.
pseudocode
pick up phone book
open to middle of phone book
look at names
if Smith is among names
call Mike
else if Smith is earlier in book
open to middle of left half of book
go back to step 2
else if Smith is later in book
open to middle of right half of book
go back to step 2
else
quit
0  pick up phone book
1  open to middle of phone book
2  look at names
3  if Smith is among names
4    call Mike
5  else if Smith is earlier in book
6    open to middle of left half of book
7    go back to step 2
8  else if Smith is later in book
9    open to middle of right half of book
10   go back to step 2
11  else
12   quit
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if Smith is among names
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open to middle of left half of book
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else
quit
- functions
- conditions
- Boolean expressions
- loops
- functions
- conditions
- Boolean expressions
- loops
- variables
- threads
- events
- ...

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