This is CS50
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
input → block → output
representation
123
100 × 1
100 10 1
100 × 1 +
100 \times 1 + 10 \times 2
100 × 1 + 10 × 2 +
100 × 1 + 10 × 2 + 1 × 3

123
$2^2 \quad 2^1 \quad 2^0$

000
bit
bit bit bit bit bit bit bit bit bit bit
byte
A
ASCII
Unicode
algorithms
pseudocode
1  Pick up phone book
2  Open to middle of phone book
3  Look at page
4  If Smith is on page
5    Call Mike
6  Else if Smith is earlier in book
7    Open to middle of left half of book
8    Go back to line 3
9  Else if Smith is later in book
10   Open to middle of right half of book
11   Go back to line 3
12  Else
13   Quit
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● functions
● conditions
● Boolean expressions
● loops
- functions
- conditions
- Boolean expressions
- loops
- variables
- threads
- events
- ...
#include <stdio.h>

int main(void)
{
    printf("hello, world\n");
}
when clicked

say hello, world
Motion

- move 10 steps
- turn 15 degrees
- turn 15 degrees
- go to random position
- go to x: 0 y: 0
- glide 1 sec to random position
- glide 1 sec to x: 0 y: 0
- point in direction 90
- point towards mouse-pointer
- change x by 10
- set x to 0
- change y by 10
- set y to 0
- if on edge, bounce
say hello, world
input $\rightarrow$ algorithms $\rightarrow$ output
hello, world → algorithms → output
hello, world → say → output
What's your name?
input → algorithms → output
What's your name? → algorithms → output
What's your name? → ask and wait → output
What's your name? → ask and wait → answer
say join hello, answer
input $\rightarrow$ algorithms $\rightarrow$ output
hello, answer → algorithms → output
hello, answer → join → hello, David
hello, David
hello, David
hello, David → say
hello, David → say → "hello, David"
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