







Lecture 0

68%

of CS50 students
have never taken CS before

Less Comfortable
56%

Somewhere in Between
31%

More Comfortable
13%

project5050.org

what ultimately matters in this course is not so much where you end up relative to your classmates but where you, in **Week 11**, end up relative to yourself in **Week 0**

problem solving

Scratch

C

Crypto

Game of Fifteen

Forensics

Mispellings

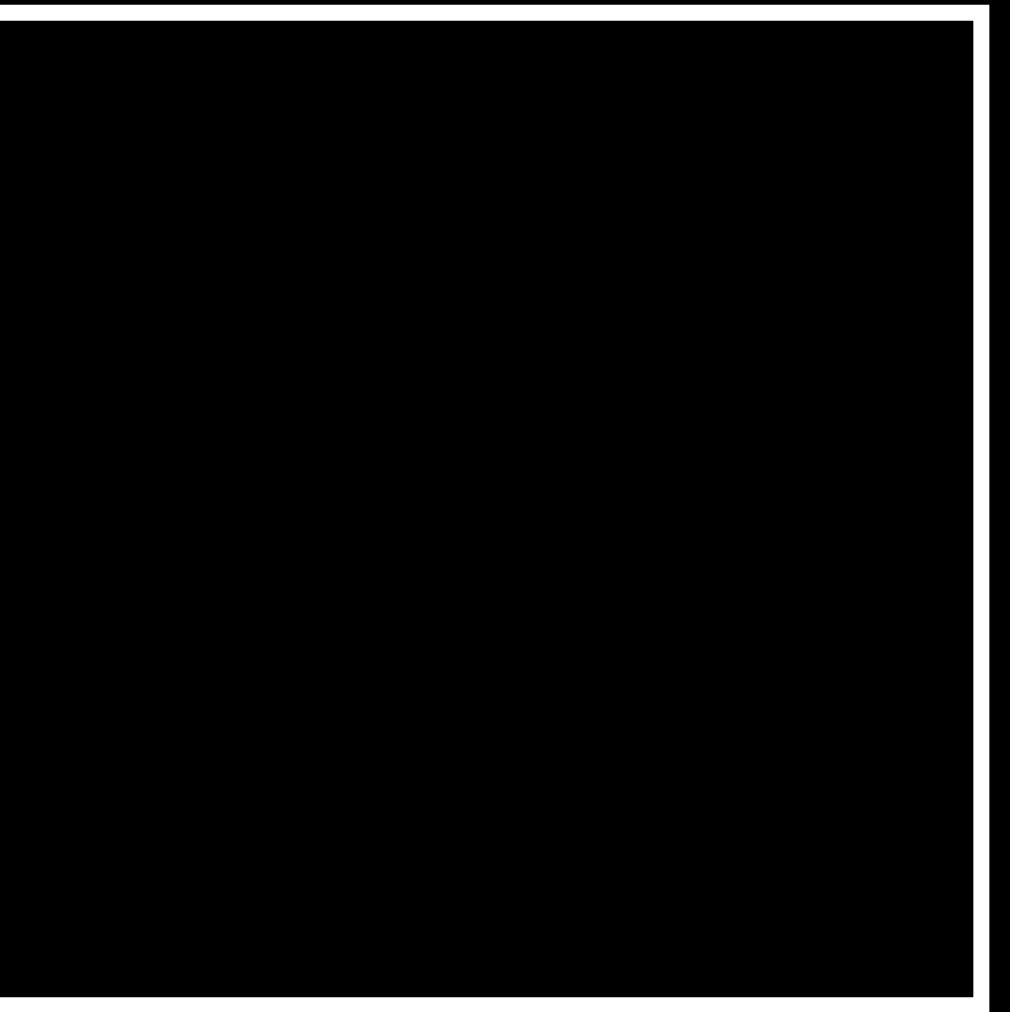
Web Server

C\$50 Finance

Mashup

problem solving

inputs →



→ outputs

binary

0, 1

decimal

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

1 2 3

50

ASCII

A	B	C	D	E	F	G	H	I	...
65	66	67	68	69	70	71	72	73	...

72 73 33

H

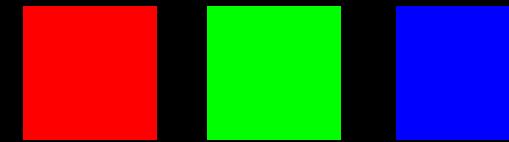
72 73 33

H I

72 73 33

H | !

72 73 33

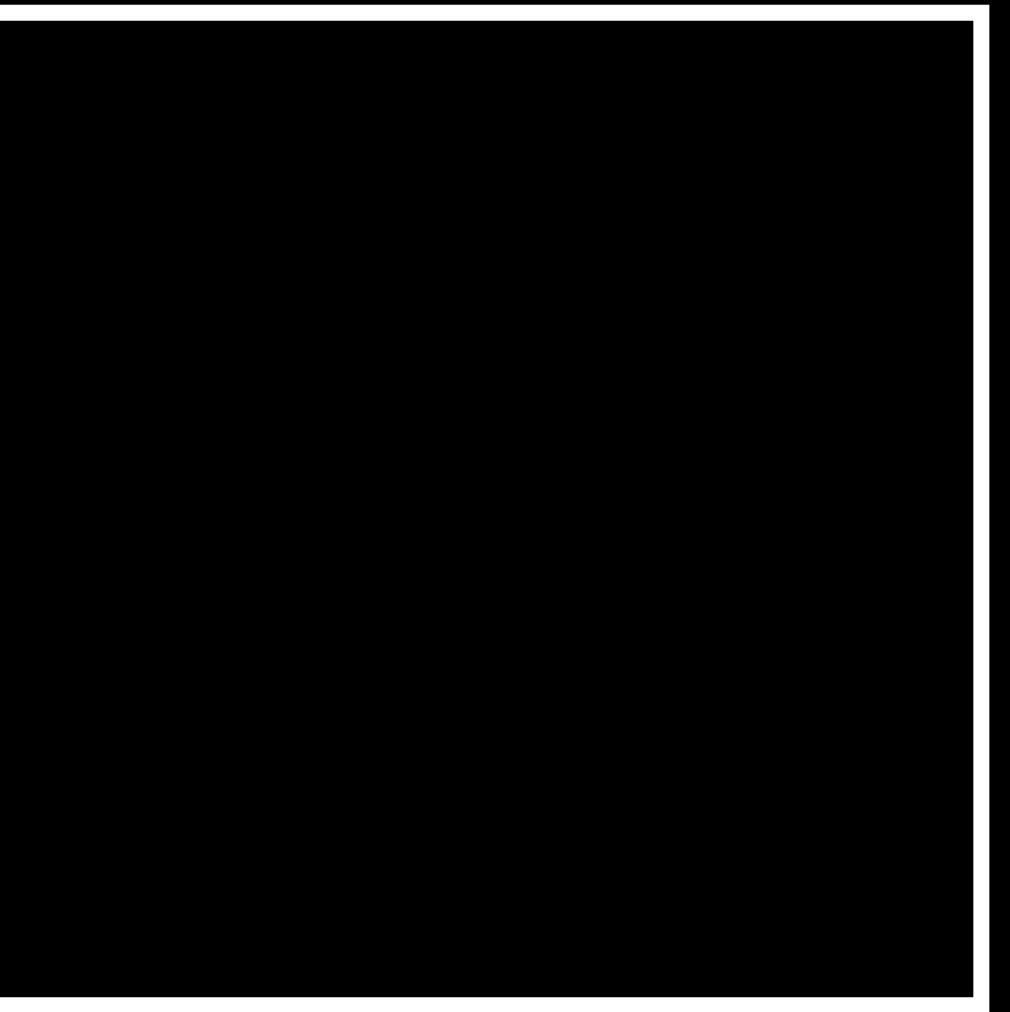


72 73 33



abstraction

inputs →



→ outputs

algorithms

algorithms

time to solve

size of problem

time to solve

n

size of problem

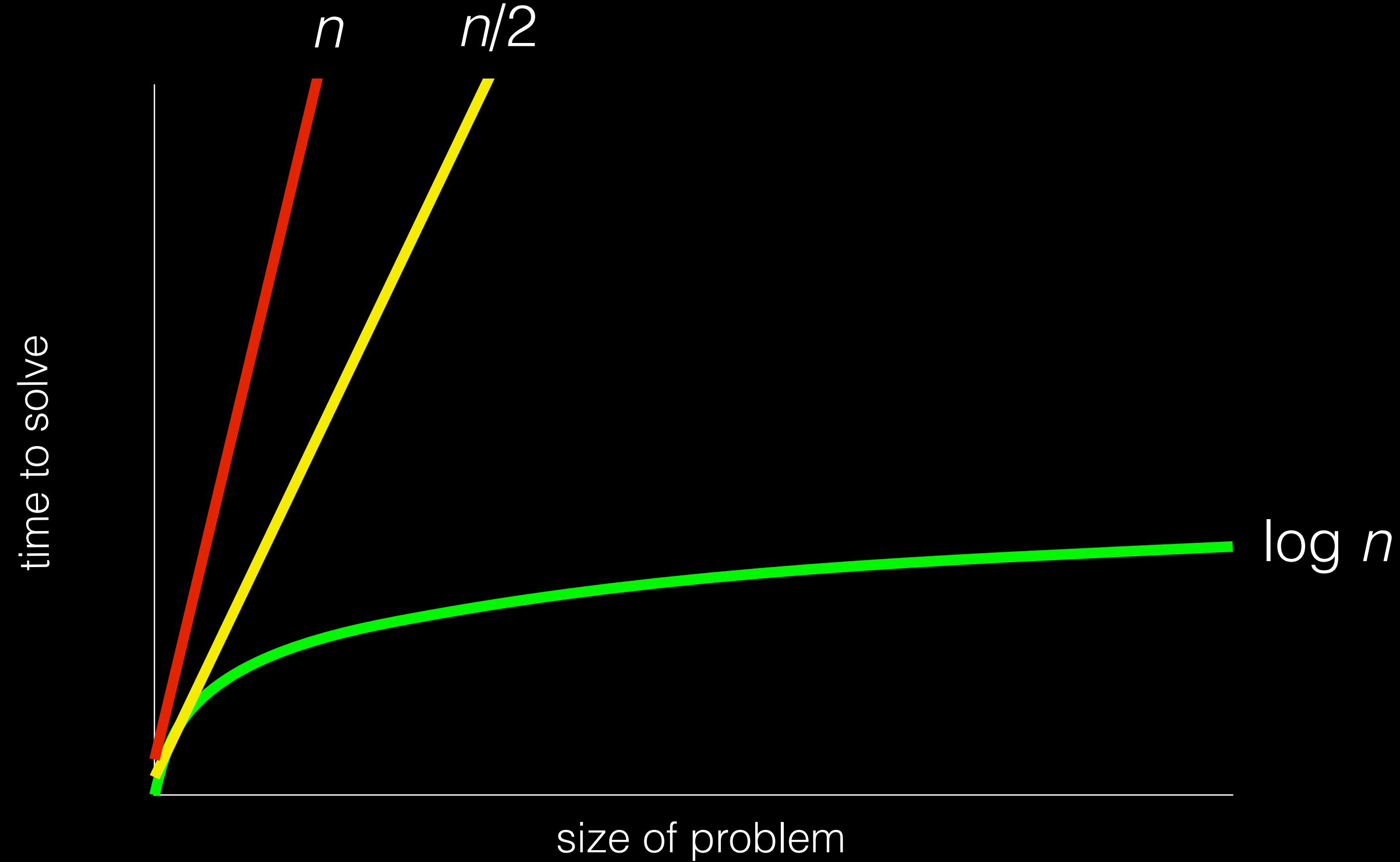
time to solve

n

$n/2$

size of problem





pseudocode

```
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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```
#include <stdio.h>

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



when  clicked

say **hello, world**

functions

conditions

Boolean expressions

loops

...

functions

conditions

Boolean expressions

loops

variables

threads

events

...



A Scratch script consisting of a single green control script. It features a purple speech bubble pointing left, containing the text "say [hello, world]". The word "say" is in black, and "hello, world" is in a multi-colored font.

```
say [hello, world]
```

if $x < y$ then
say "x is less than y"

if $x < y$ then

say "x is less than y"

else

if $x > y$ then

say "x is greater than y"

else

say "x is equal to y"





forever

say hello, world

repeat (50)
say [hello, world]

set **i** to 0

when  clicked

when  clicked

broadcast message ▾

when I receive message ▾

```
define cough n
repeat (n)
  say cough for (1) secs
  wait (1) secs
end
```



- Lectures
- Sections
- Walkthroughs
- Office Hours

