

72%

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 12**, end up relative to yourself in **Week 0**

```
#include <stdio.h>

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

computational thinking

inputs → algorithms → outputs

computational thinking

inputs → algorithms → outputs

binary

0, 1

decimal

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

1 2 3

100

10

1

1 2 3

100

10

1

1 2 3

100×1

100

10

1

1 2 3

$100 \times 1 + 10 \times 2$

100

10

1

1 2 3

$100 \times 1 + 10 \times 2 + 1 \times 3$

100

10

1

123

100

+

20

+

3

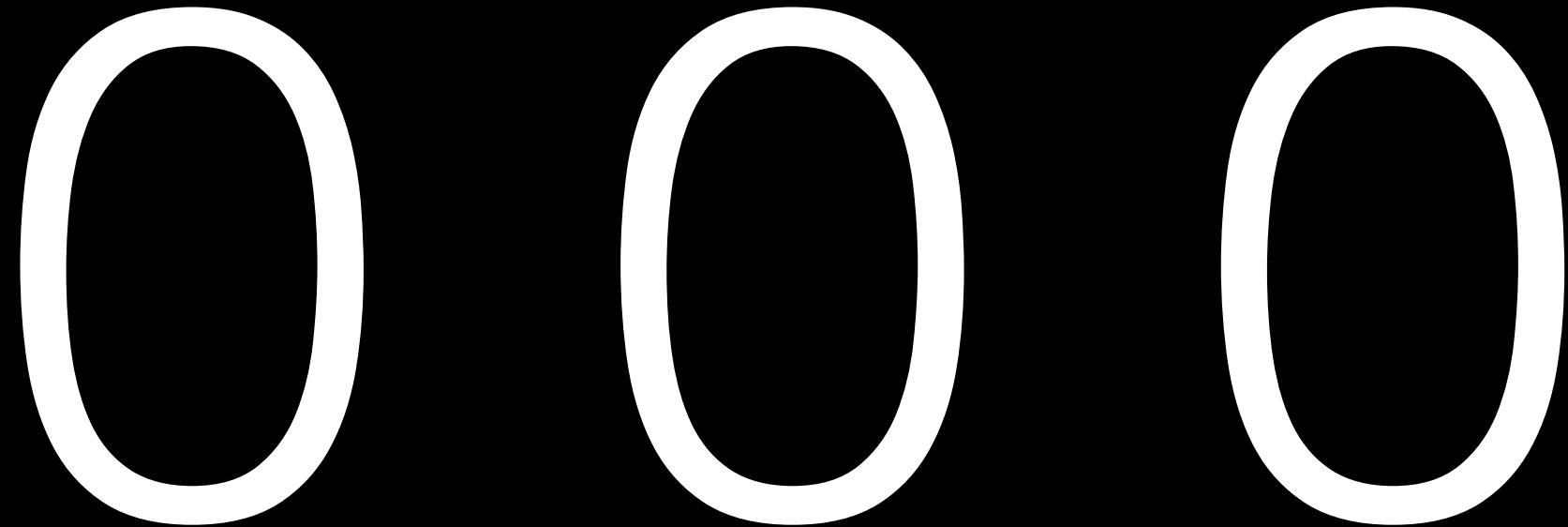
1 2 3

000

4

2

1



4

2

1

001

4

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1

0 1 0

4

2

1

0 1 1

4

2

1

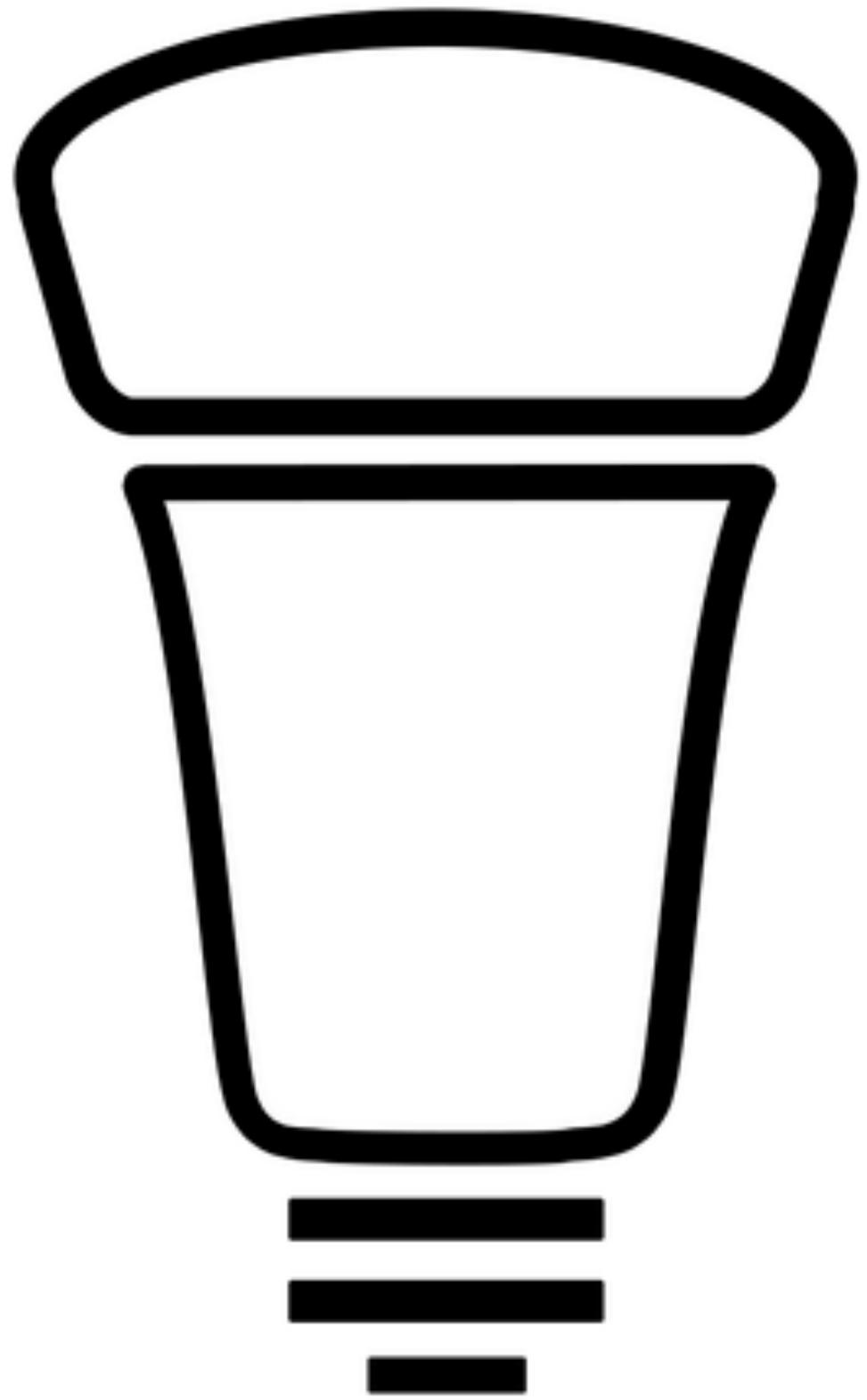
100

4 2 1
1 0 1

4 2 1
1 1 0

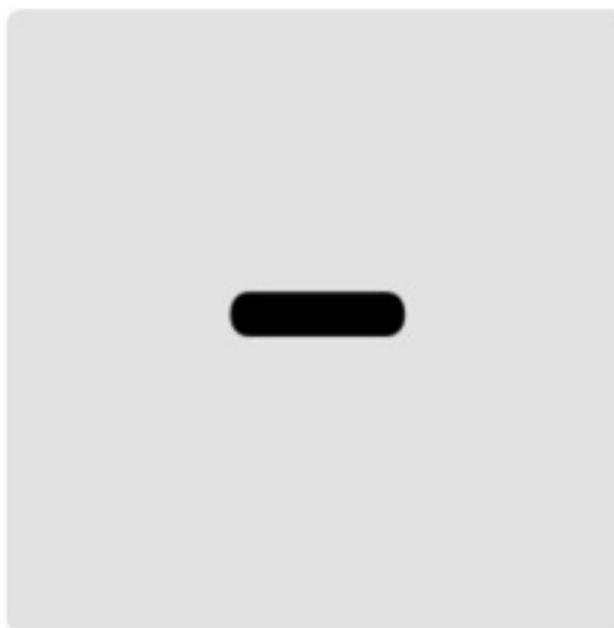
4 2 1

1 1 1





128 64 32 16 8 4 2 1



0



All Off Game Mode All On



```
PUT /api/newdeveloper/lights/1/state HTTP/1.1
```

```
{"on":true, "bri":255, "transitiontime":0}
```

ASCII

A	B	C	D	E	F	G	H	I	J	K	L	M
65	66	67	68	69	70	71	72	73	74	75	76	77

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
78	79	80	81	82	83	84	85	86	87	88	89	90

72 73 33

H

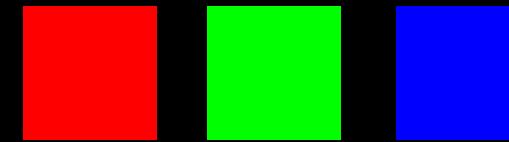
72 73 33

H I

72 73 33

H | !

72 73 33



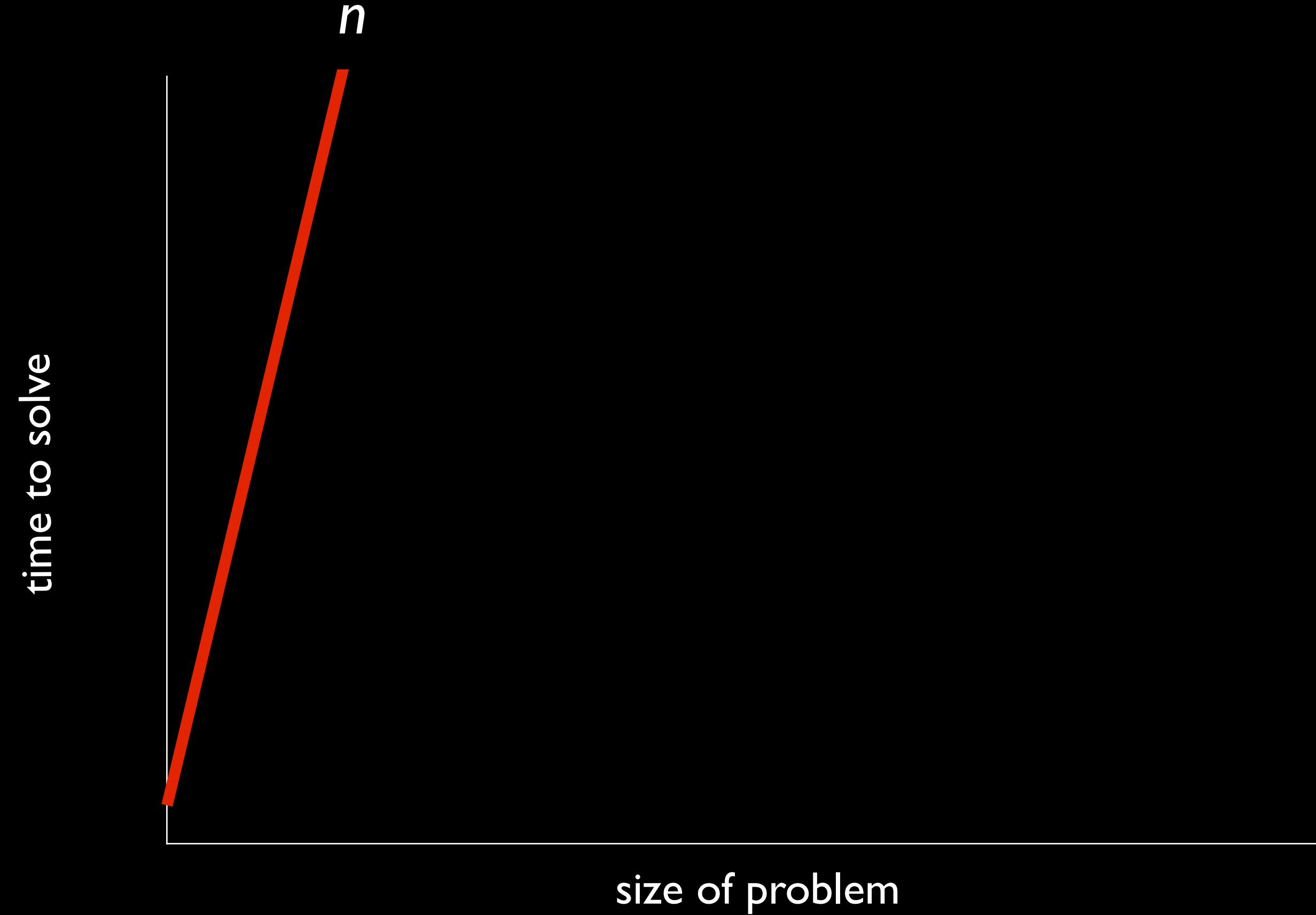
72 73 33

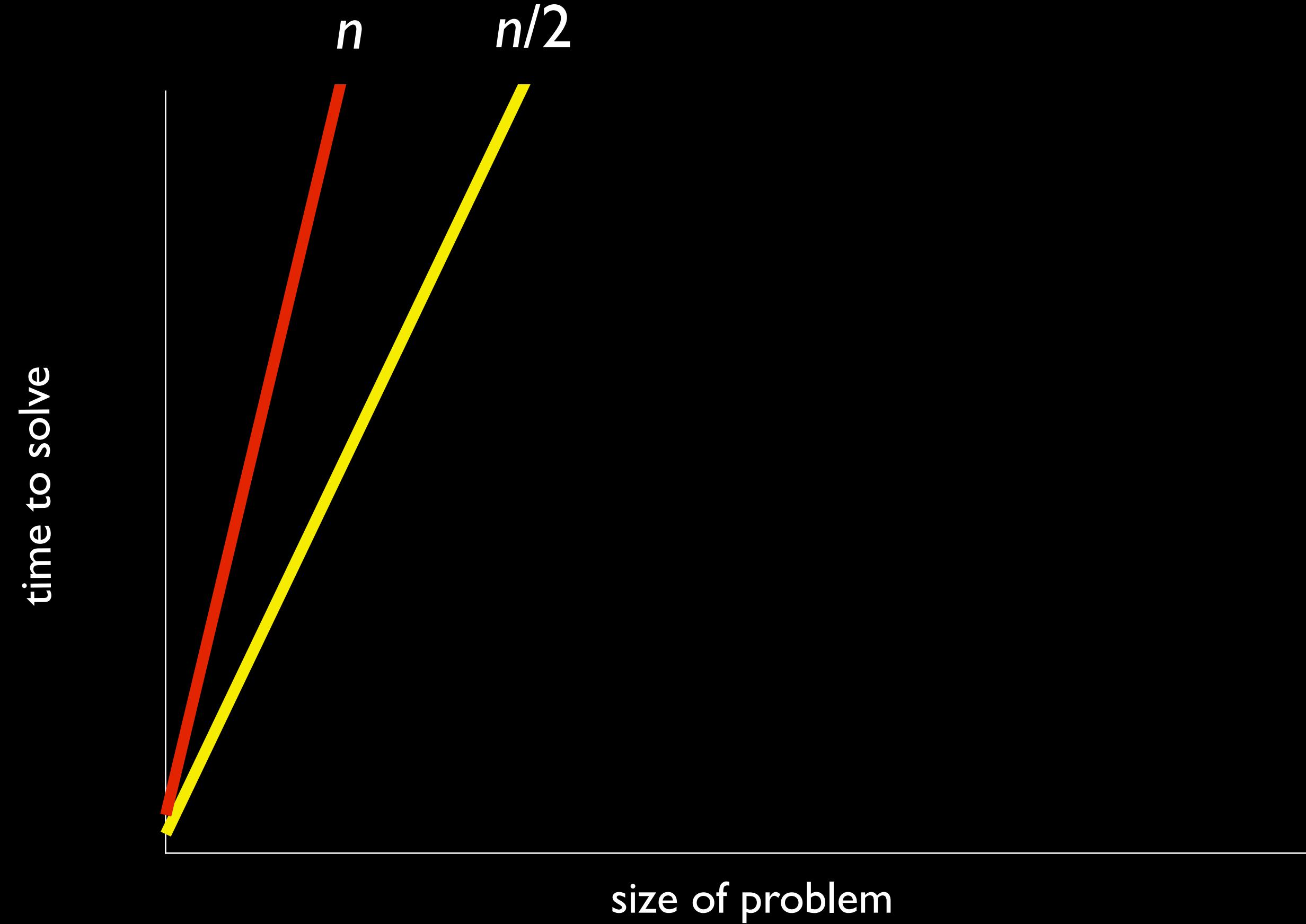


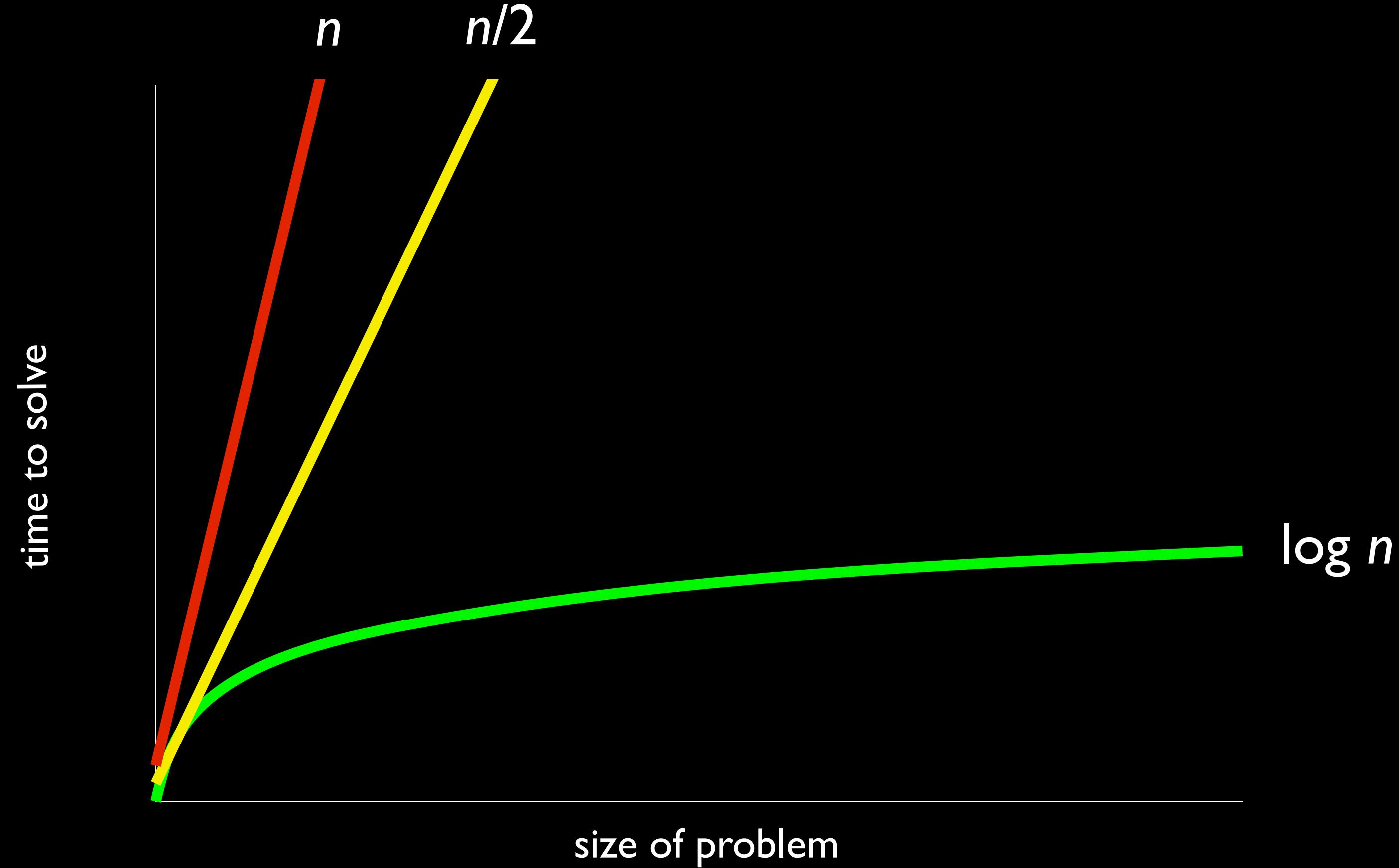
computational thinking

inputs → algorithms → outputs









pseudocode

```
1 pick up phone book
2 open to middle of phone book
3 look at names
4 if "Smith" is among names
5   call Mike
6 else if "Smith" is earlier in book
7   open to middle of left half of book
8   go to line 3
9 else if "Smith" is later in book
10  open to middle of right half of book
11  go to line 3
12 else
13 give up
```

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13 give up
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Mark Zuckerberg 

August 27 at 4:33pm · 

We just passed an important milestone. For the first time ever, one billion people used Facebook in a single day.

On Monday, 1 in 7 people on Earth used Facebook to connect with their friends and family.











Abby Lyons Adam Cimpeanu Akshay Saini Aleksandra Zakrzewska Alex Goldberg Alex Pong
Alex Reinking Ali Monfre Alicia Vargas-Morawetz Aliess Kingsley Andi Peng Andrew Malta Anita
Xu Annaleah Ernst Antuan Tran Aparna Nathan Arianna Benson Arsalan Sufi Aubrey Wahl
Brahm Gardner Brian Arroyo Brian Scassellati Camille Rekhson Charles Jin Charlie Proctor
Charly Walther Chris Lim Claire Carroll Collin Styring Colton Ogden Connor Harris Dan
Armendariz Dan Coffey Daven Farnham David J. Malan David J. Malan David McPeek Devansh
Tandon Diego Torres Quintanilla Doug Lloyd Eli Block Emily Houlihan Eric Ouyang Erika Puente
Evan Hellmuth Ezra Zigmond Filip Bujaroski Frank Wu George Zhang Glenn Holloway Hannah
Blumberg Hannia Zia Haohang Xu Henrique Vaz Ian Sexton India Patel Jacob Lurye Jacob
Scherba Jason Brooks Jason Hirschhorn Jason Shen Jay Hou Jennifer Hsiao Jessica Lee
Jessica Zhu Jon Kim Jordan Canedy Jordan Hayashi Juan Bedoya Juliette Grantham Karl
Otness Katelynn Kyker Kevin Dong Kevin Zhang Khalid Tawil Kyle Kwong Larry Zhang Lauren
Scully Lee Danilek Leila Hofer Lien Tran Linda Song Lisa Chille Marcus Powers Maria Zlatkova
Mary Farner Matt Beatty Megan Valentine Michael Ge Michael Menz Michael Patterson Michael
Rose Minh Tri Pham Mirhee Kim MJ Richardson Neel Mehta Nicholas Larus-Stone Nick Joseph
Nicole Fish Patrick Pan Peter Chang Peter Jin Ramon Galvan Rob Bowden Robbie Gibson
Robert Krabek Ross Rheingans-Yoo Sahil Gupta Sam Cheng Sam Levatich Samuel Green Sarah
Strohkorb Shane Campayne Shreyas Tirumala Stelios Rousoglou Stephen Krewson Summer Wu
Sylvan Zheng Ted Tuckman Thomas Lively Tim Tamm Travis Yeh Victor Domene Ribeiro dos
Santos Walter Martin Wilder Wohns Winnie Wu Winston Boucher Zack Chauvin Zamyla Chan



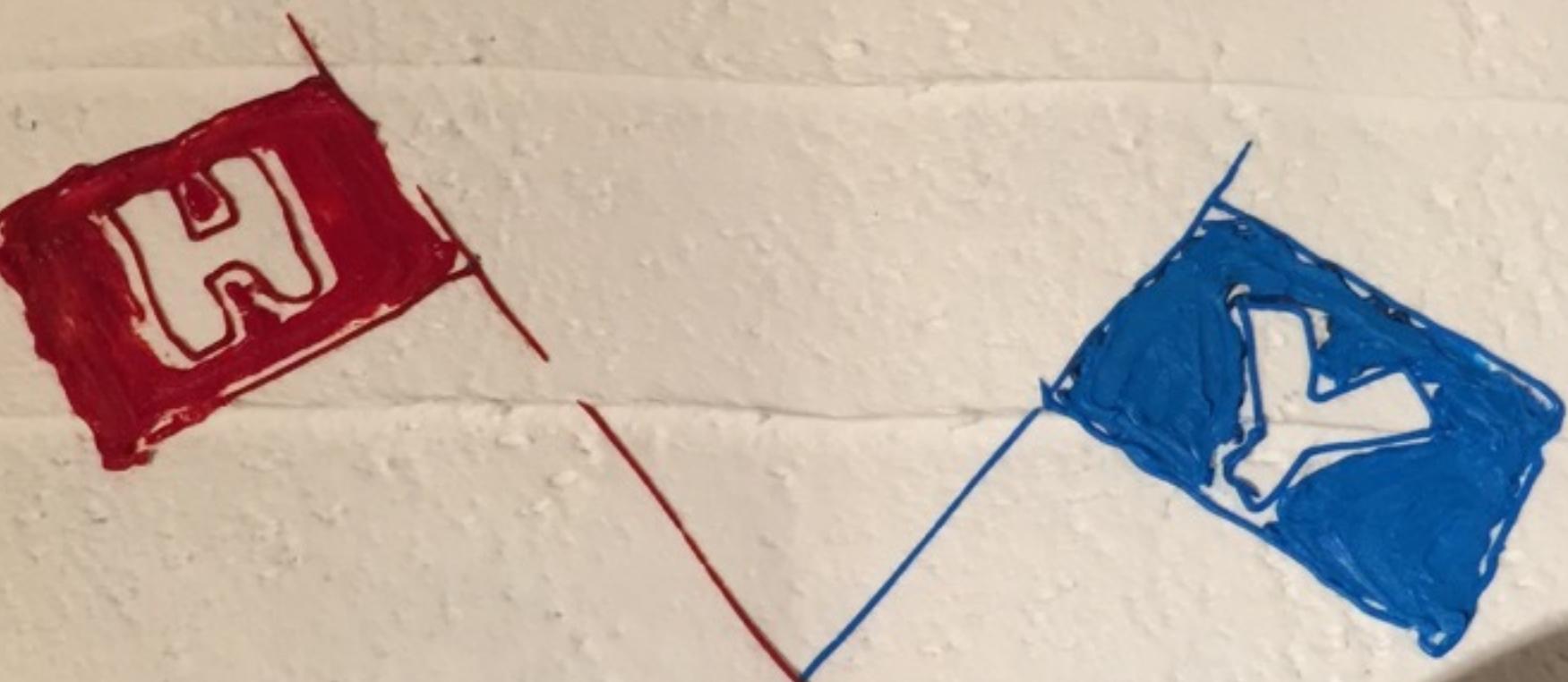
CS50
PUZZLE DAY
2015

CS50
PUZZLE DAY
2015

CS50
PUZZLE DAY
2015

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PUZZLE DAY
2015





lectures

sections

less comfortable, more comfortable, somewhere in between

office hours

problem sets

walkthroughs, postmortems

problem sets

2 editions, 9 late days, lowest dropped

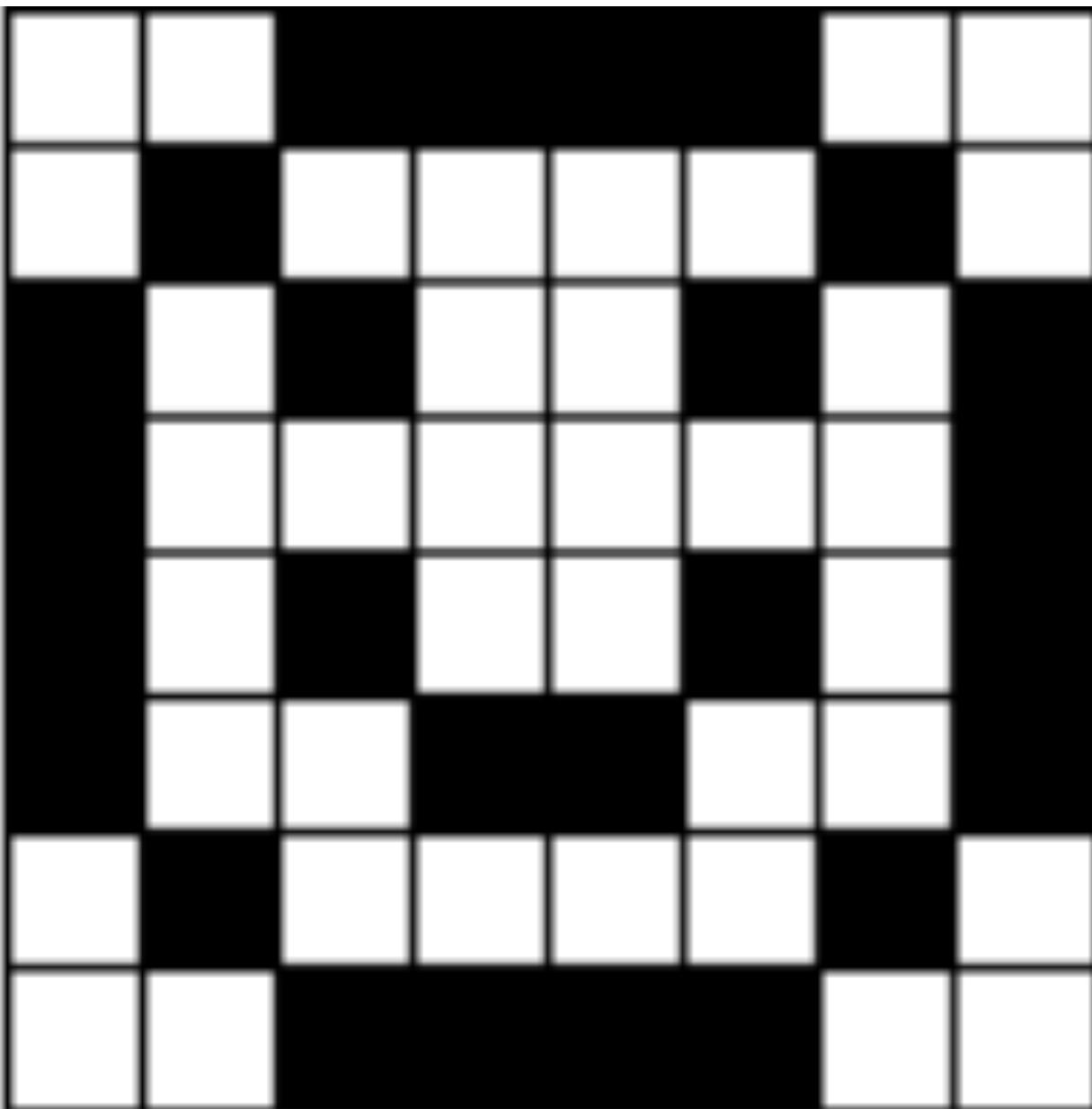
when  clicked

say [hello, world!]

show [oil] yes

uggcf://lbhgh.or/bUt5FWLEUN0

11000011
10111101
01011010
01111110
01011010
01100110
10111101
11000011



143,091

GET / HTTP/1.1

C\$50 Finance

final project

CS50 Hackathon, CS50 Fair

FIRE + ICE

an improvisational grill

in harvard square

FIRE + ICE

an improvisational grill

in harvard square



















I took CS50

I took CS50

I took CS50

CS50



CS50

Sam

This is CS50.