

Lecture 0

WHY CS

DAVID MALAN – MARGO SELZTER – PETER BOL

DISCOVER CONNECTIONS BETWEEN CS AND

PHILOSOPHY

GOVERNMENT

MEDICINE

SOCIAL JUSTICE

ASTRONOMY

AND MORE

WEDNESDAY SEPTEMBER 6

7PM FONG AUDITORIUM

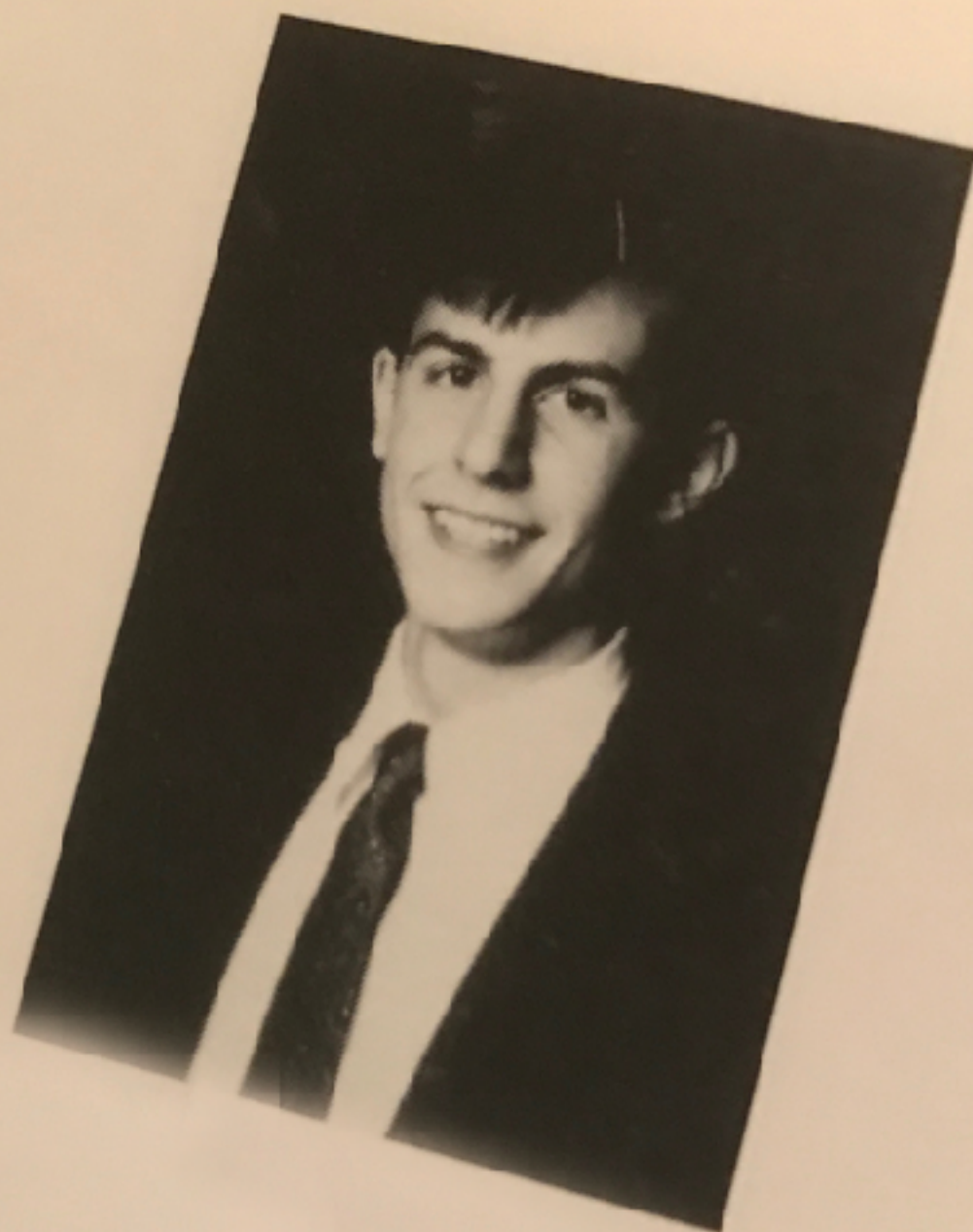
INSOMNIA COOKIES

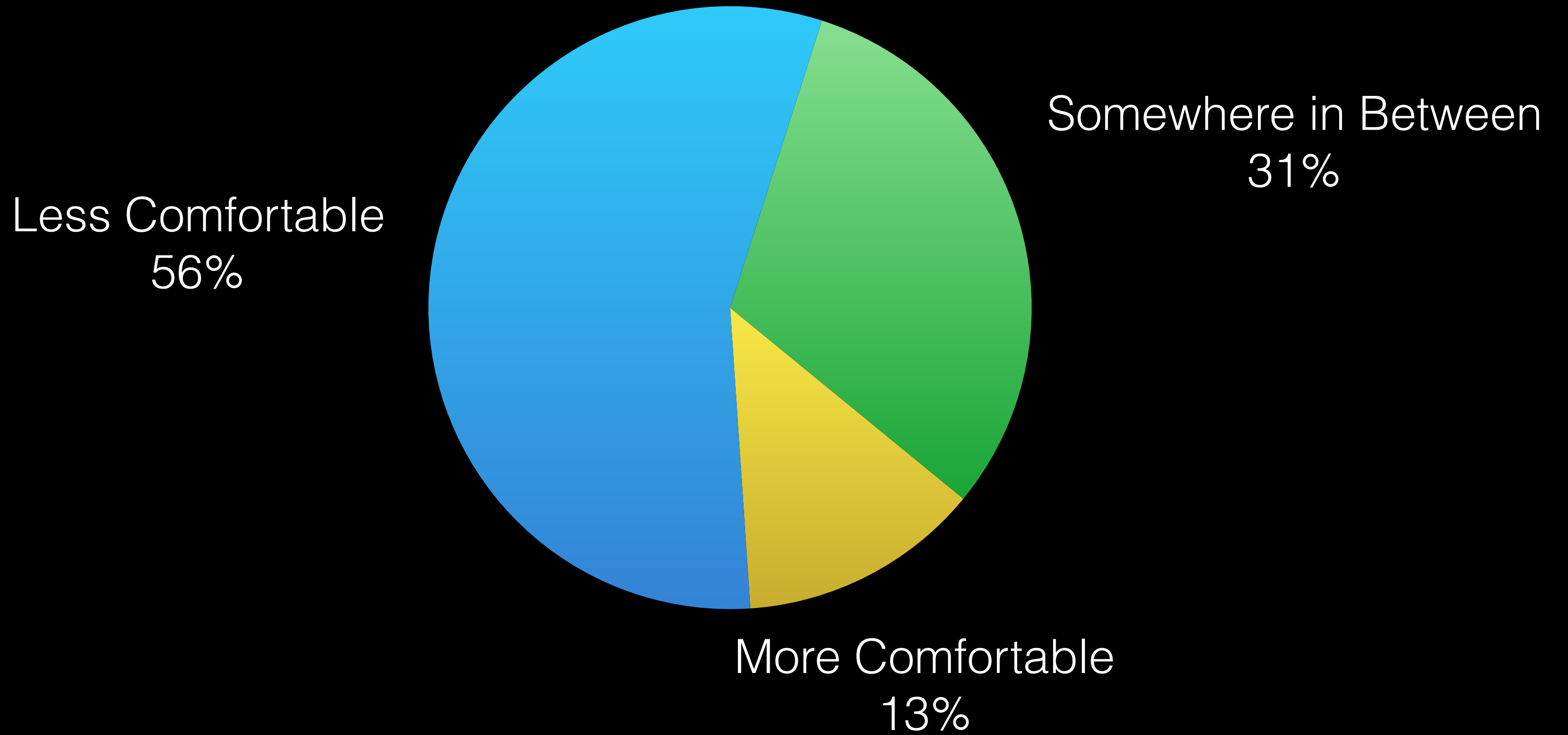
CS50



68%

of CS50 students
have never taken CS before



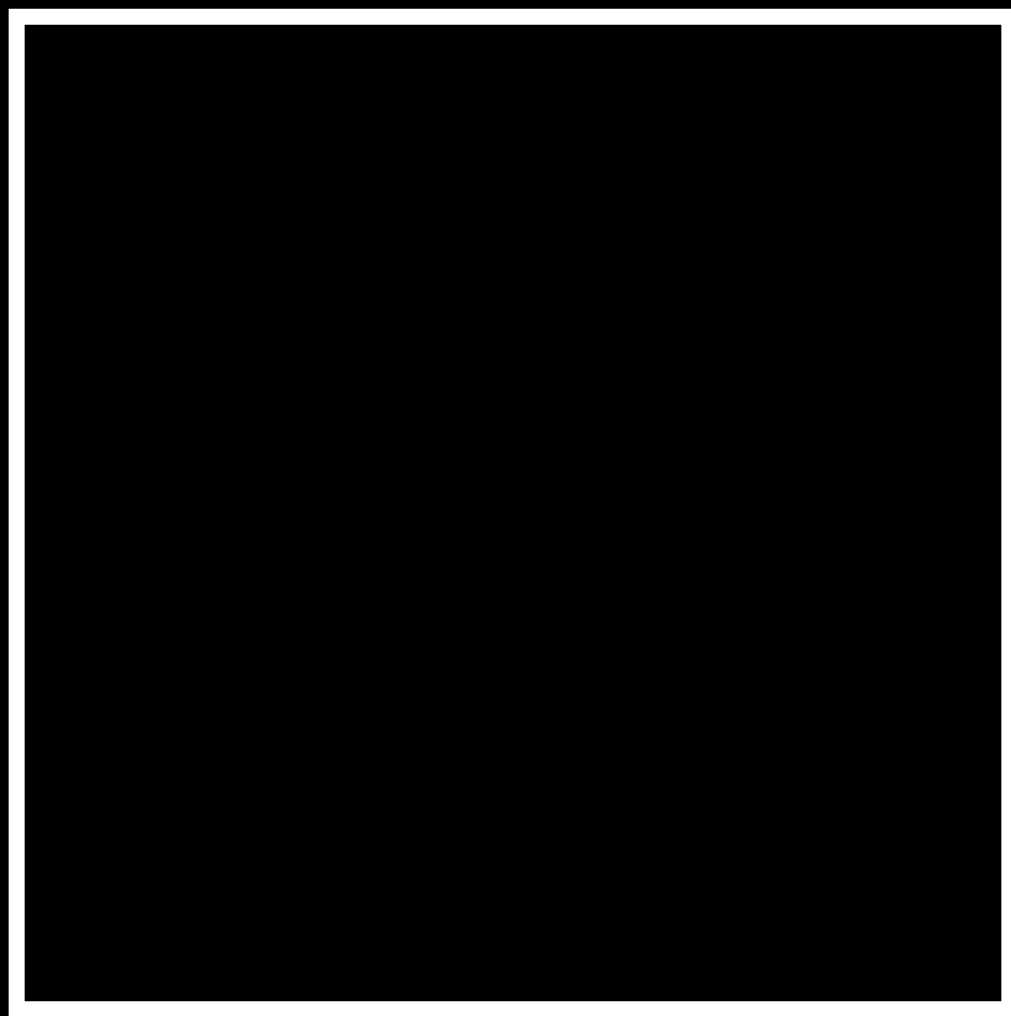


project5050.org

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

inputs →



→ outputs

1 2 3

100

10

1

1

2

3

100

10

1

1

2

3

100 × 1

100

10

1

1

2

3

100×1

+

10×2

100

10

1

1

2

3

100×1

+

10×2

+

1×3

100

10

1

1

2

3

100

+

20

+

3

1 2 3

000

4

0

2

0

1

1

4

0

2

1

1

0

4

0

2

1

1

1

4 2 1

100

4 2 1

101

4

1

2

1

1

0

4

1

2

1

1

1

50

ASCII

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

H

72

73

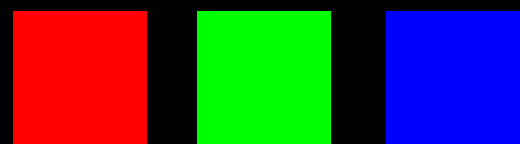
33

H I

72 73 33

H I !

72 73 33



72

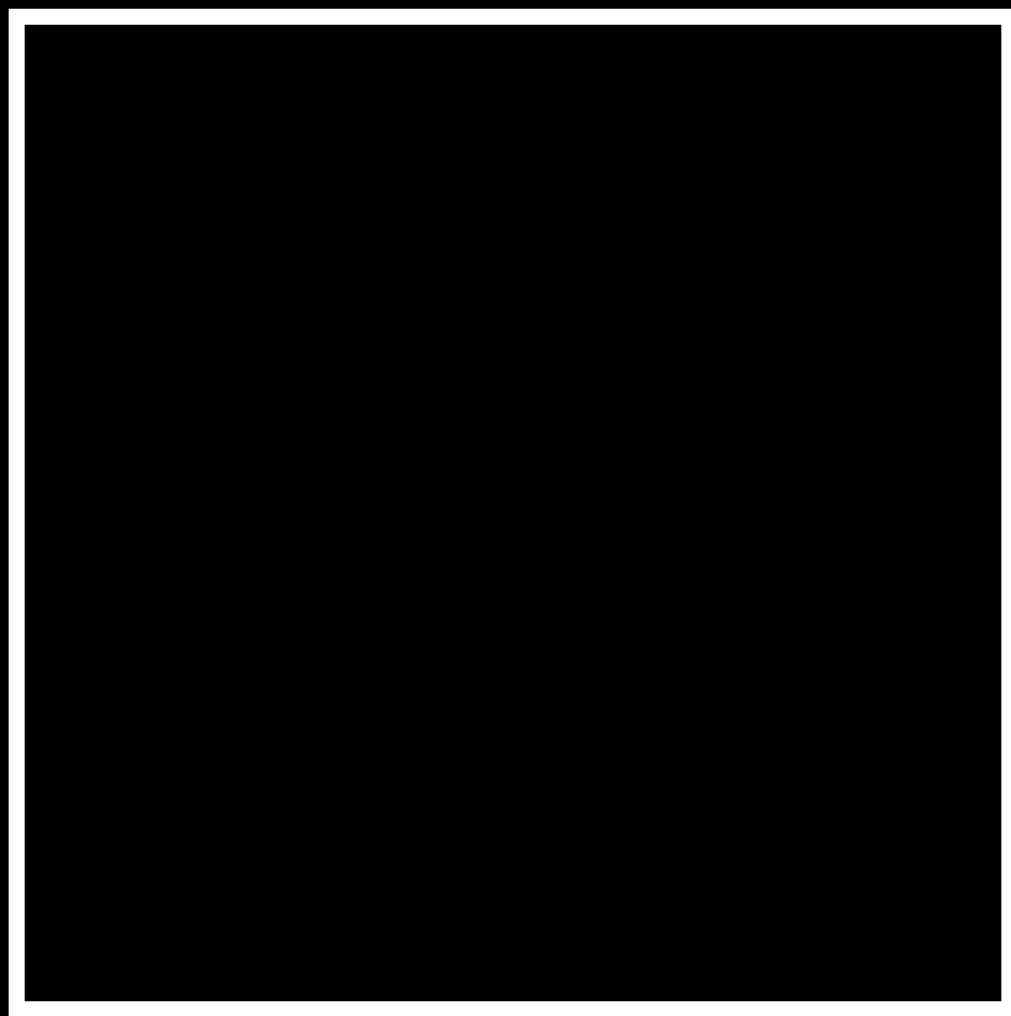
73

33



abstraction

inputs →



→ outputs

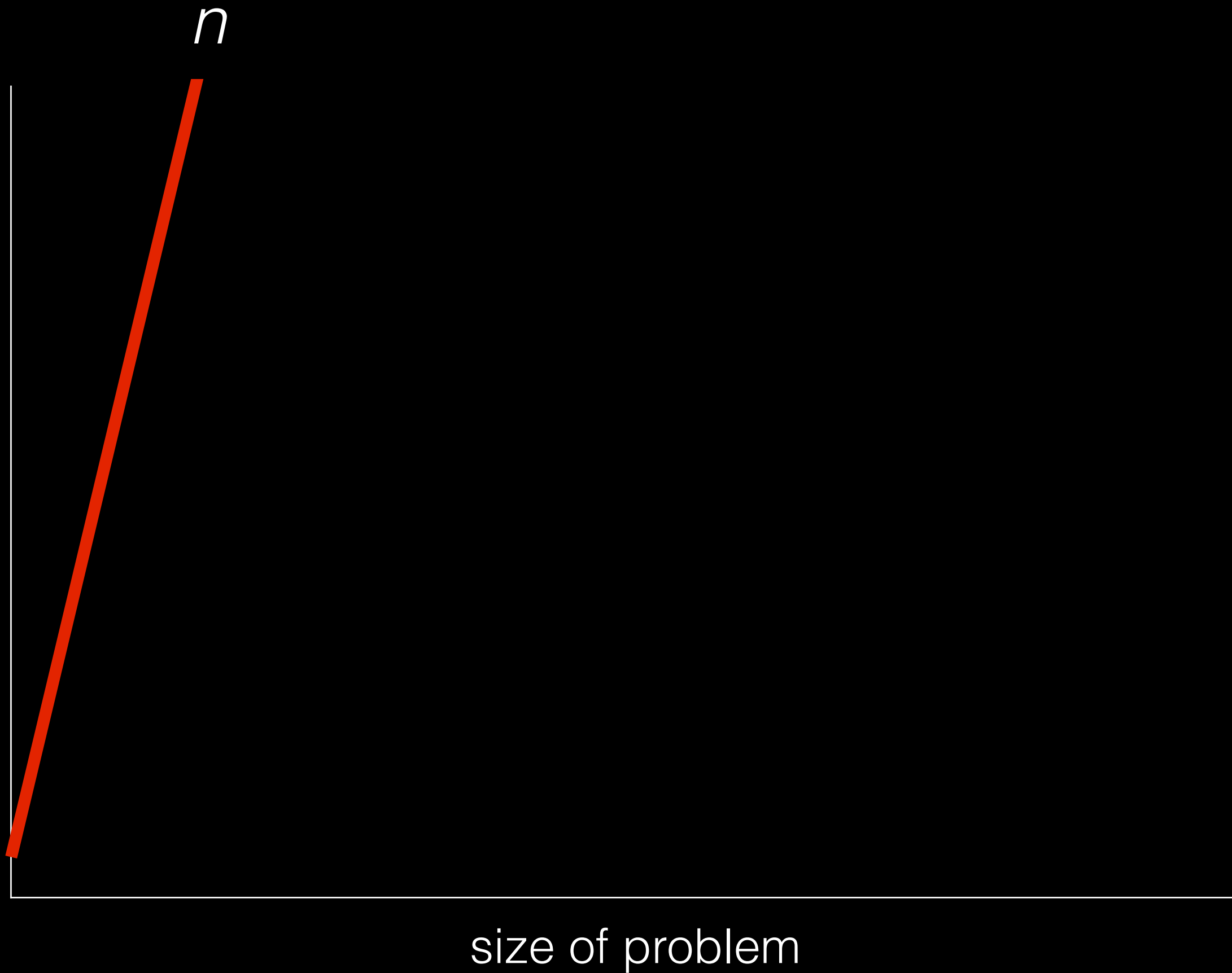
algorithms

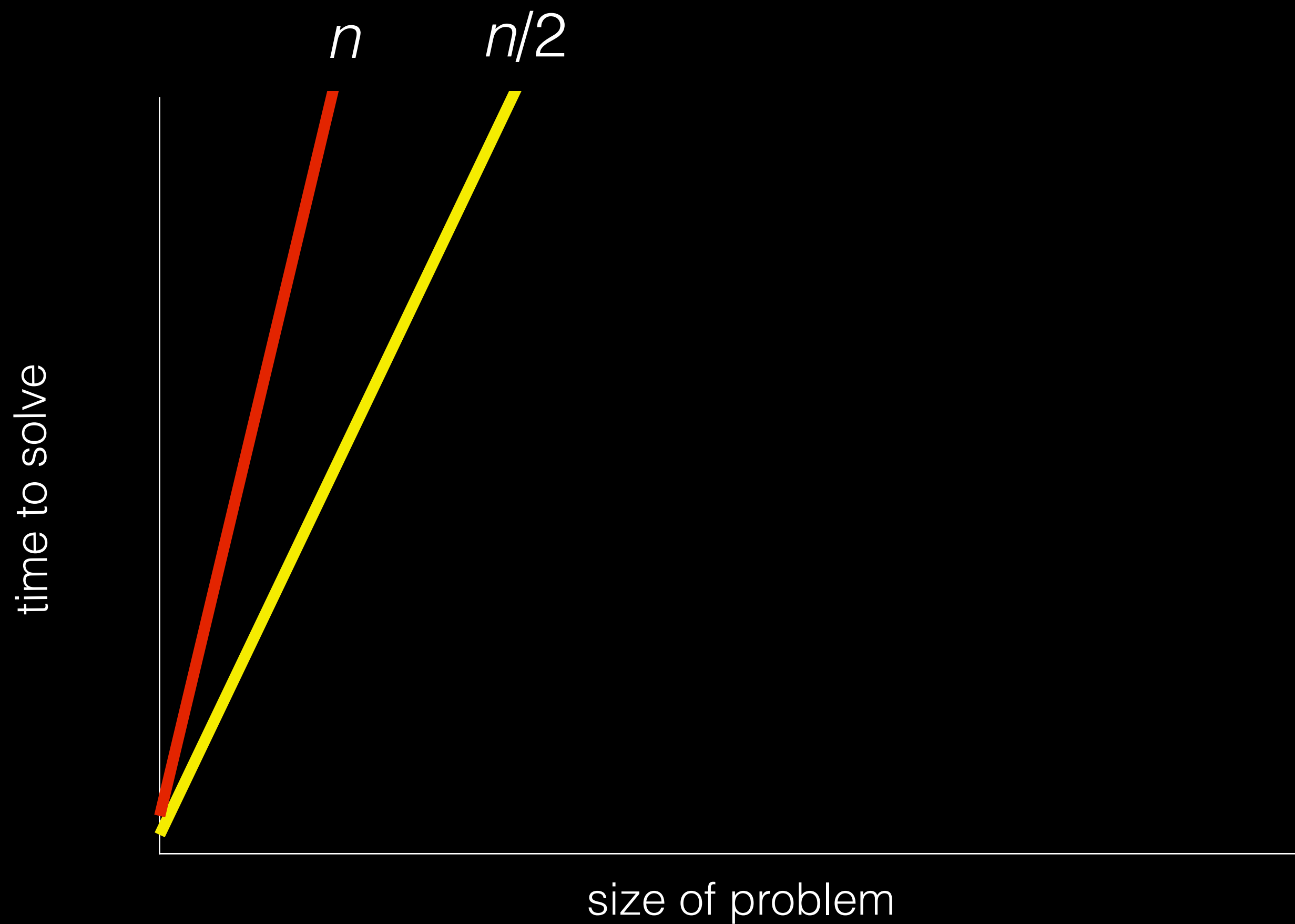
algorithms

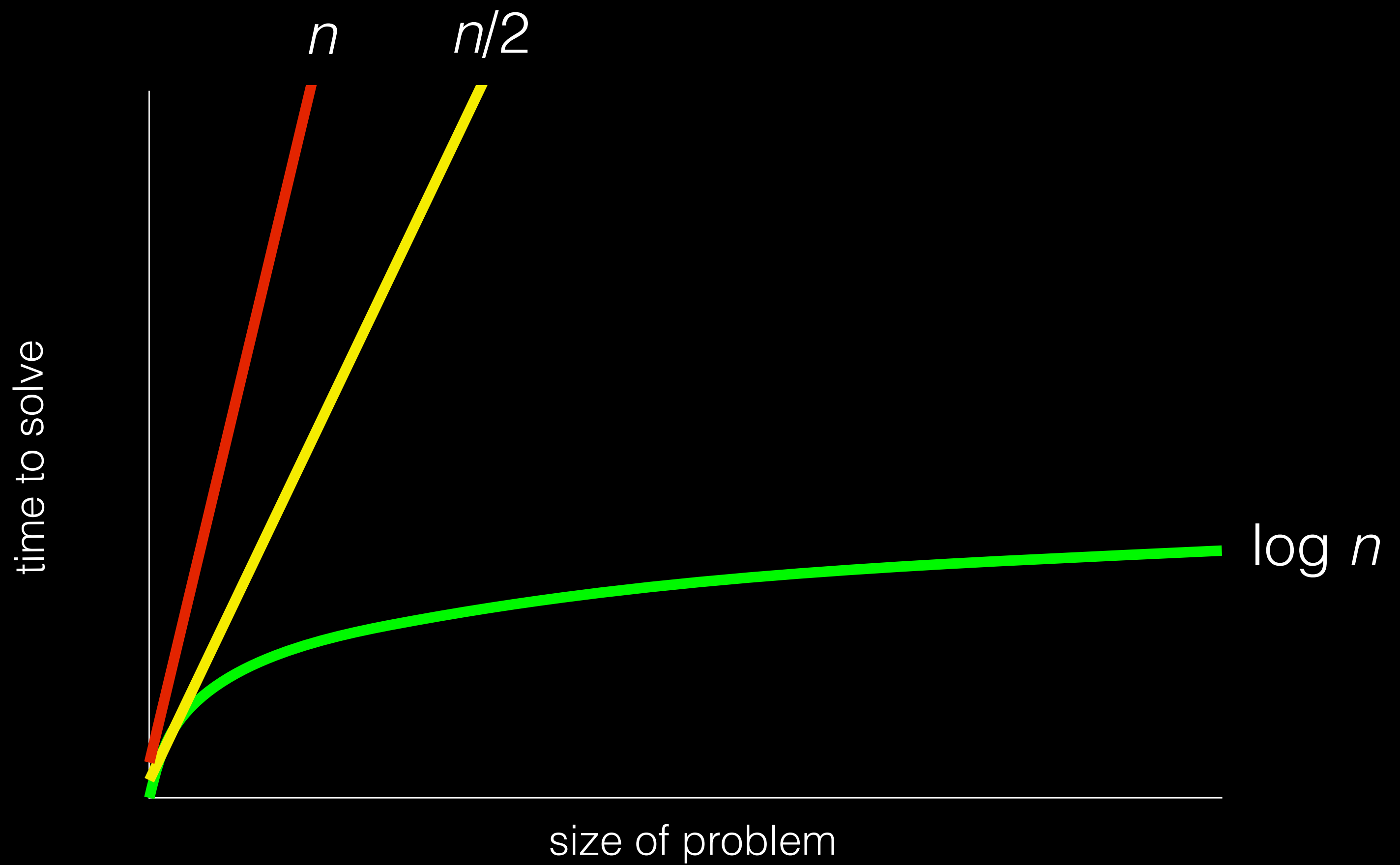
time to solve

size of problem

time to solve







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

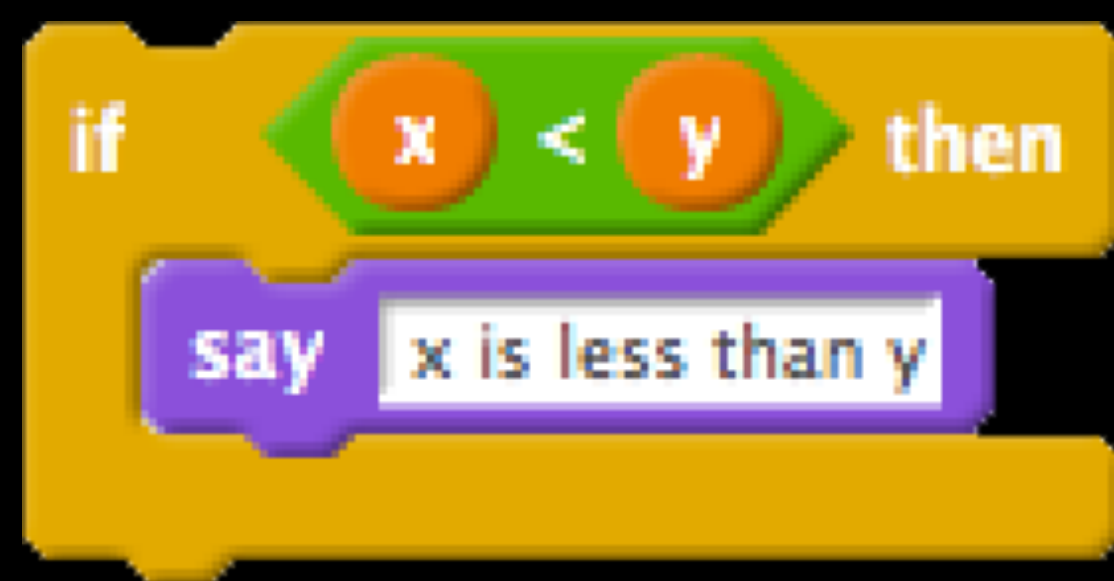
threads

events

...

say

hello, world



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





set **i** to 0

when  clicked

when  clicked

broadcast message ▼

when I receive message ▼

