CS50 for MBAs

- Sit wherever you'd like, but try to stay there week to week.
- Always bring name card!
- Submit cs50.ly/hbs/survey before we get started.

CS50 for MBAs

cs50.harvard.edu/hbs/2019/spring/

CS50 for MBAs

cs50.ly/hbs

cs50.ly/hbs

- Announcements
  - Auditing
  - Cross-Registering
- Assignments
- Calendar
- Classes
- Labs
- Slack
- Staff
- Syllabus

Staff

- Maria Zlatkova

- Colton Ogden

- Andy Chen
- Caroline Teicher
- Emma Humphrey
- Greg Mittleider
- James Bedford
- Joshua Sacher
- Nick Wong
- Rodrigo Daboin Sanchez

Classes

- Computational Thinking
- Python
- Python, continued
- Algorithms, Data Structures
- SQL
- Internet Technologies
- Artificial Intelligence
- Cloud Computing
- Privacy, Security
- Web Design
- Web Programming
- Software Engineering
- Mobile Strategies
- Technology Stacks

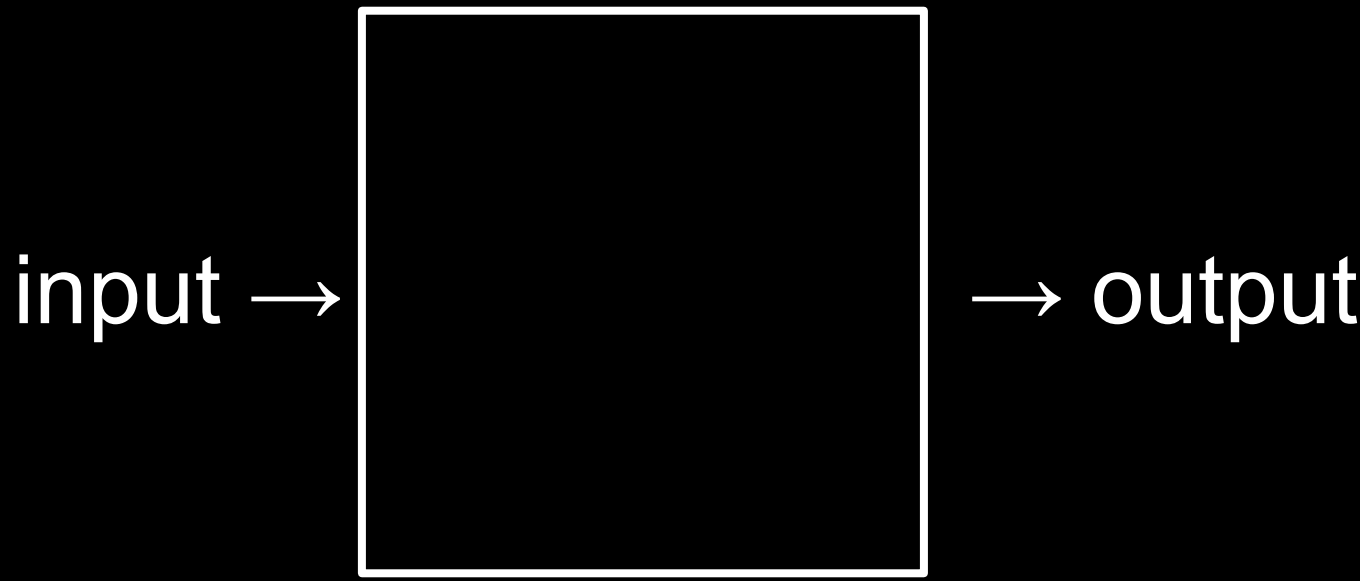
Labs

- Scratch
- Python
- Python, continued
- SQL
- HTML, CSS
- JavaScript

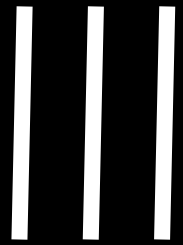
CS50 for MBAs

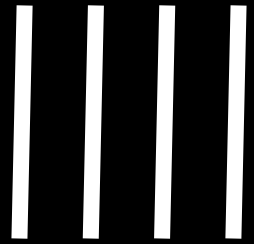
Computational Thinking

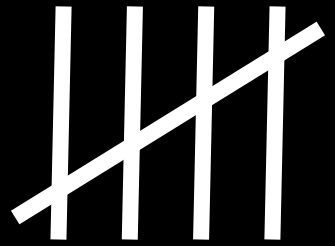
Computational Thinking


input →
→ output

representation







0 1 2 3 4 5 6 7 8 9

01

1 2 3

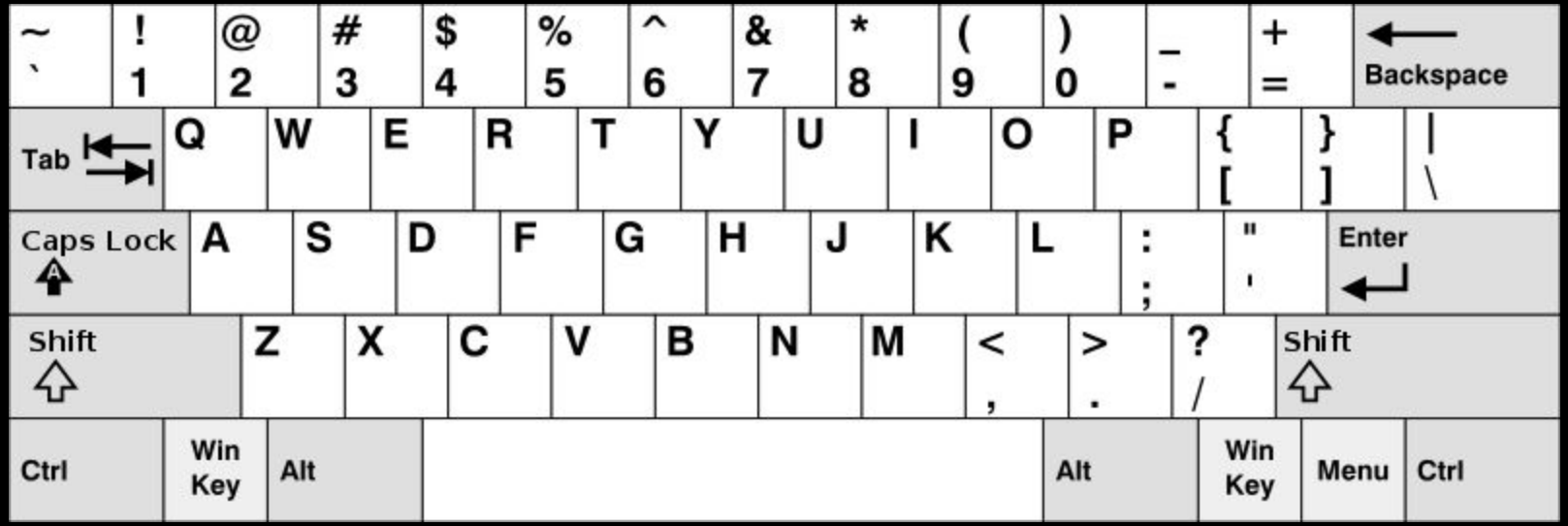
A

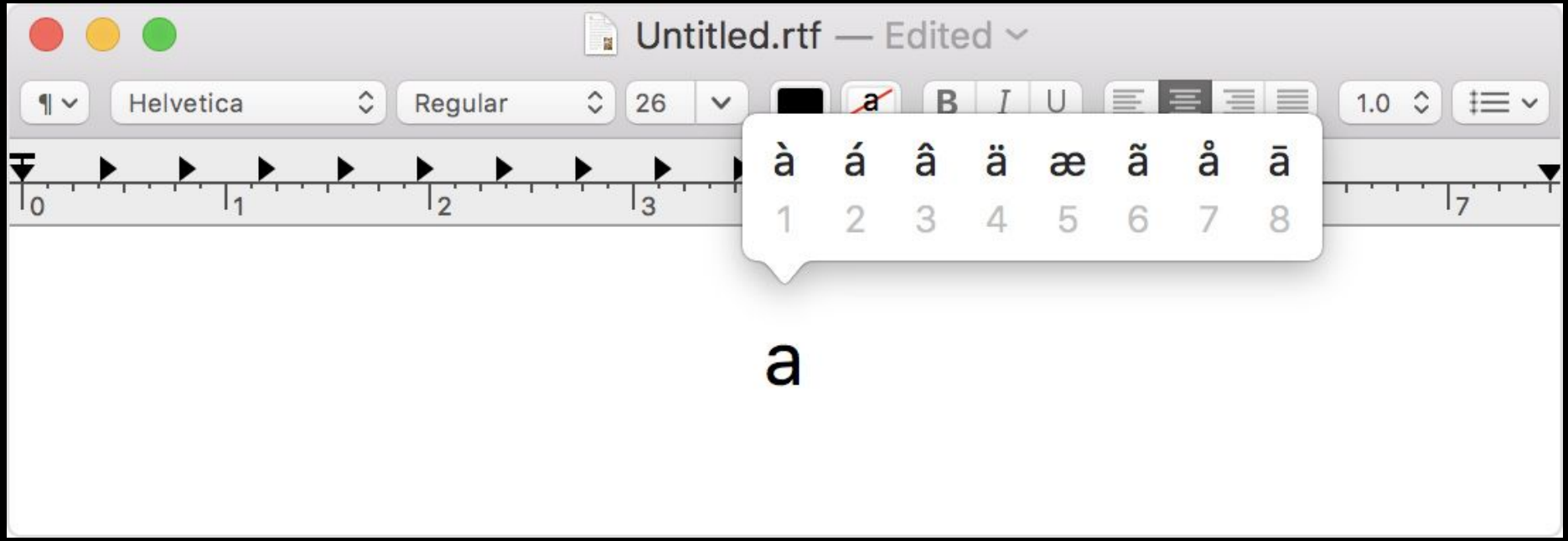
65

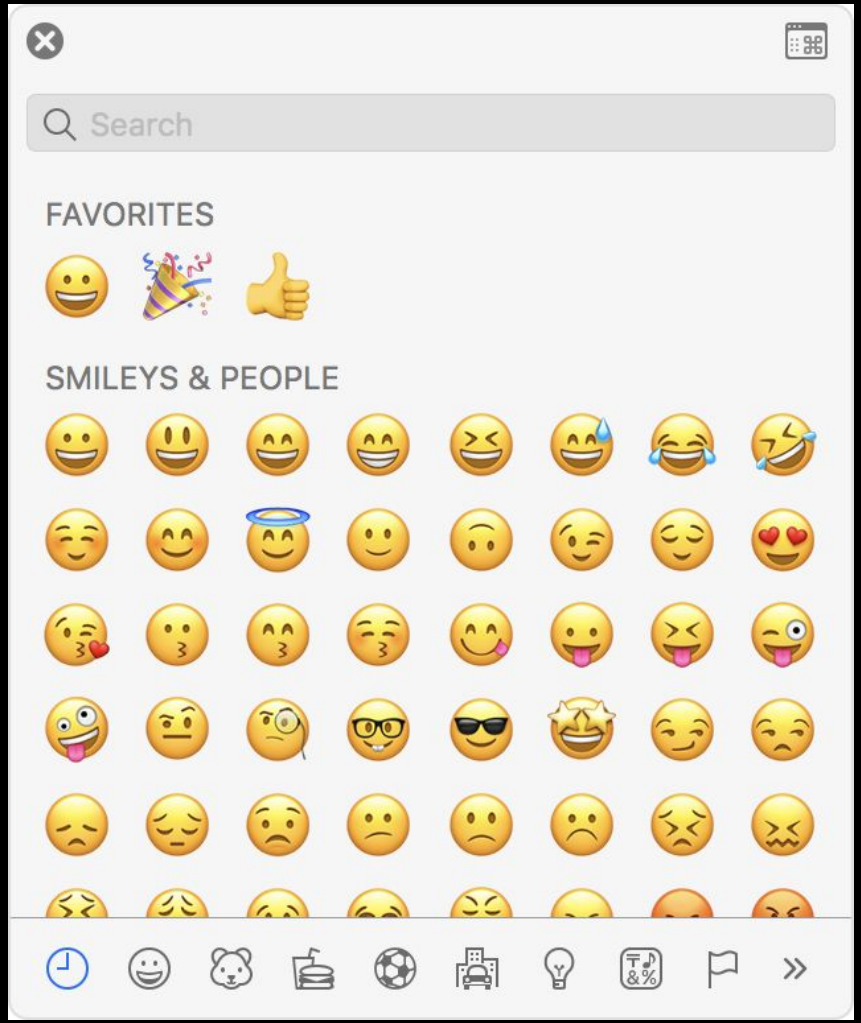
ASCII

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

abstraction


~ `
! 1
@ 2
# 3
$ 4
% 5
^ 6
& 7
* 8
(9
) 0
_ -
+ =
Backspace
Tab
Q
W
E
R
T
Y
U
I
O
P
{ [
}]
| \
Caps Lock
A
S
D
F
G
H
J
K
L
: ;
" '
Enter
Shift
Z
X
C
V
B
N
M
< ,
> .
? /
Shift
Ctrl
Win Key
Alt
Alt
Win Key
Menu
Ctrl


Untitled.rtf — Edited
Helvetica
Regular
26
1.0
à á â ä æ ã å ā
1 2 3 4 5 6 7 8
a


Search
FAVORITES
SMILEYS & PEOPLE

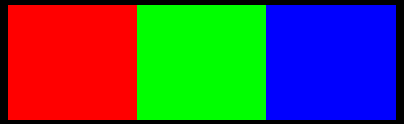
Unicode

UTF-8

128514

1111101100000010

RGB

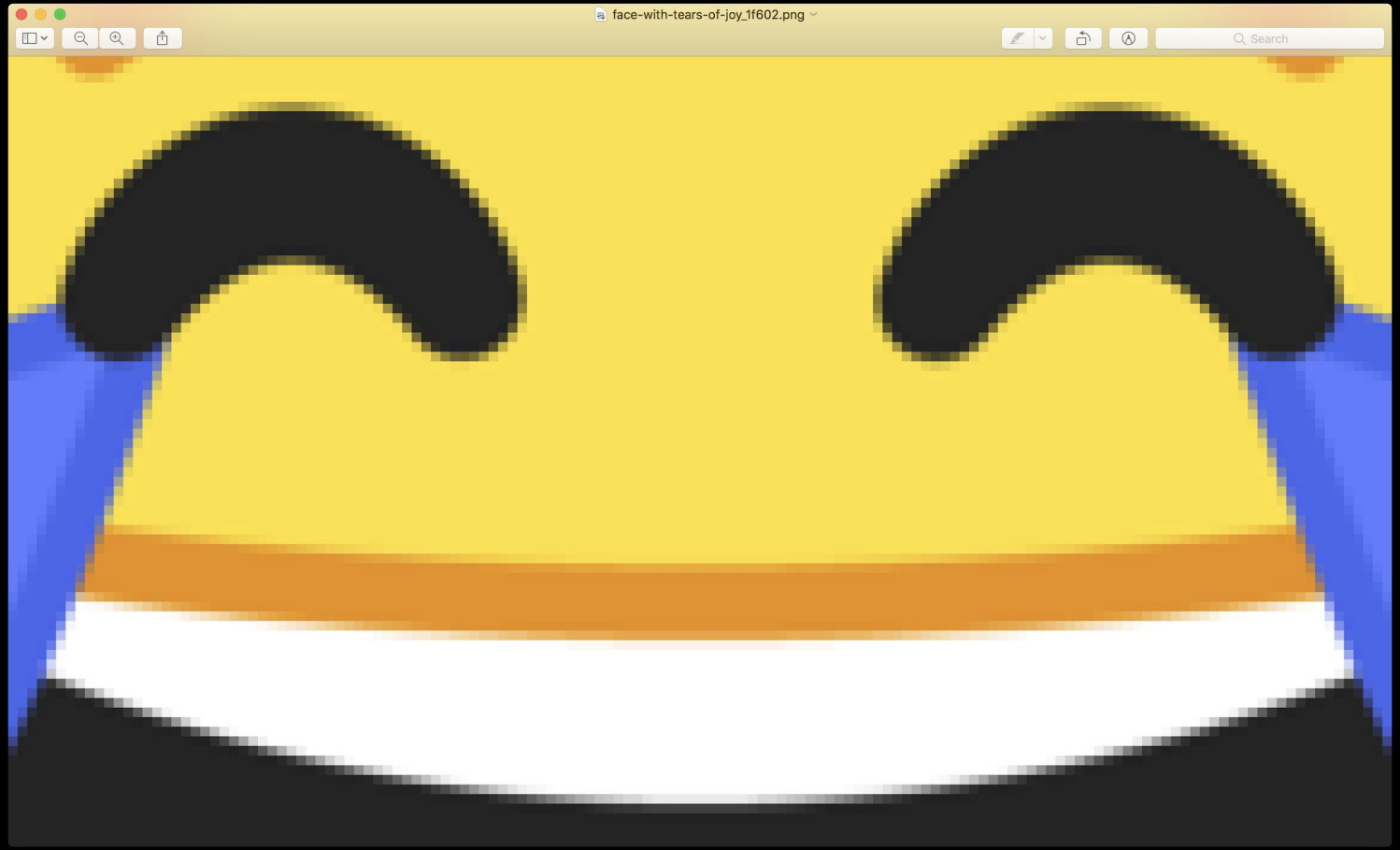


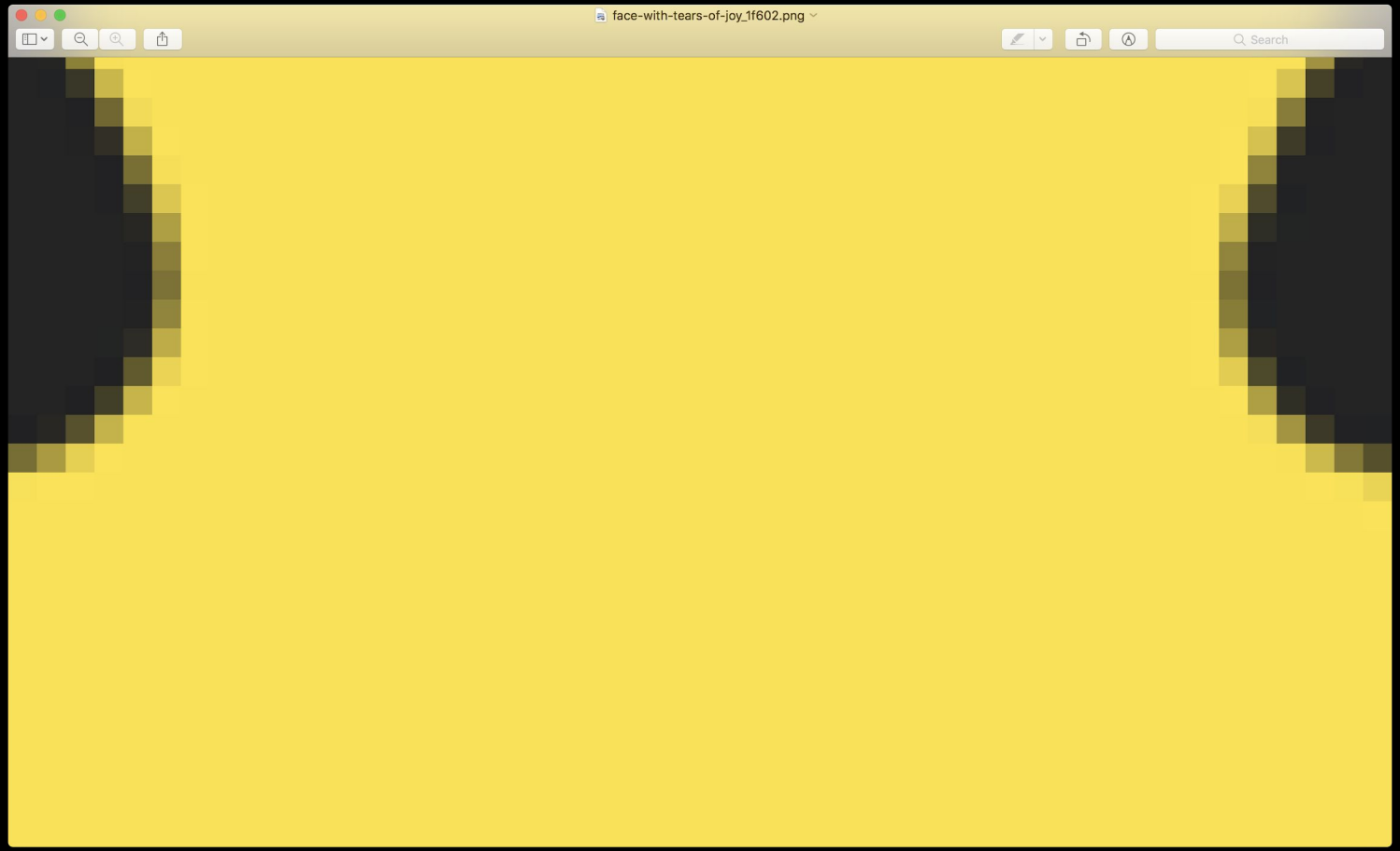
72
73
33

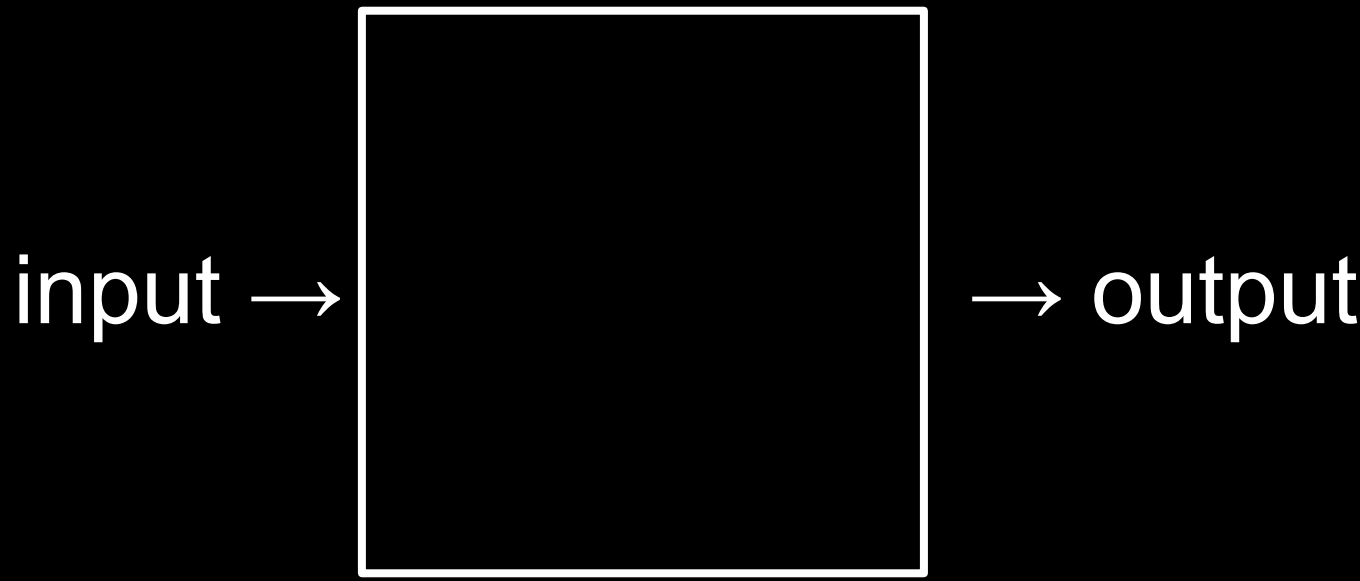
face-with-tears-of-joy_1f602.png

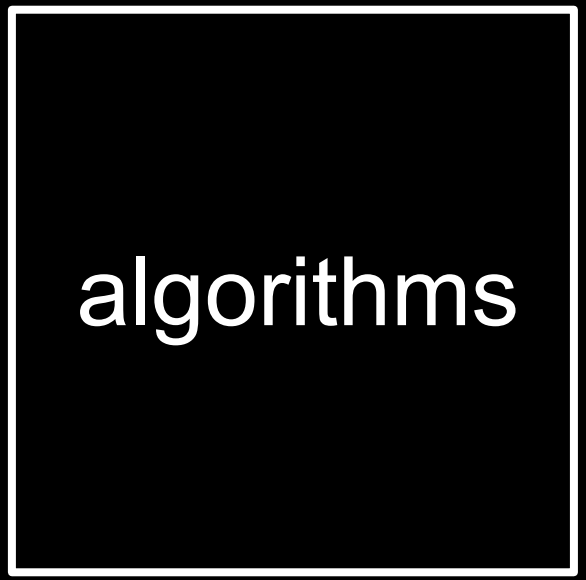
Search

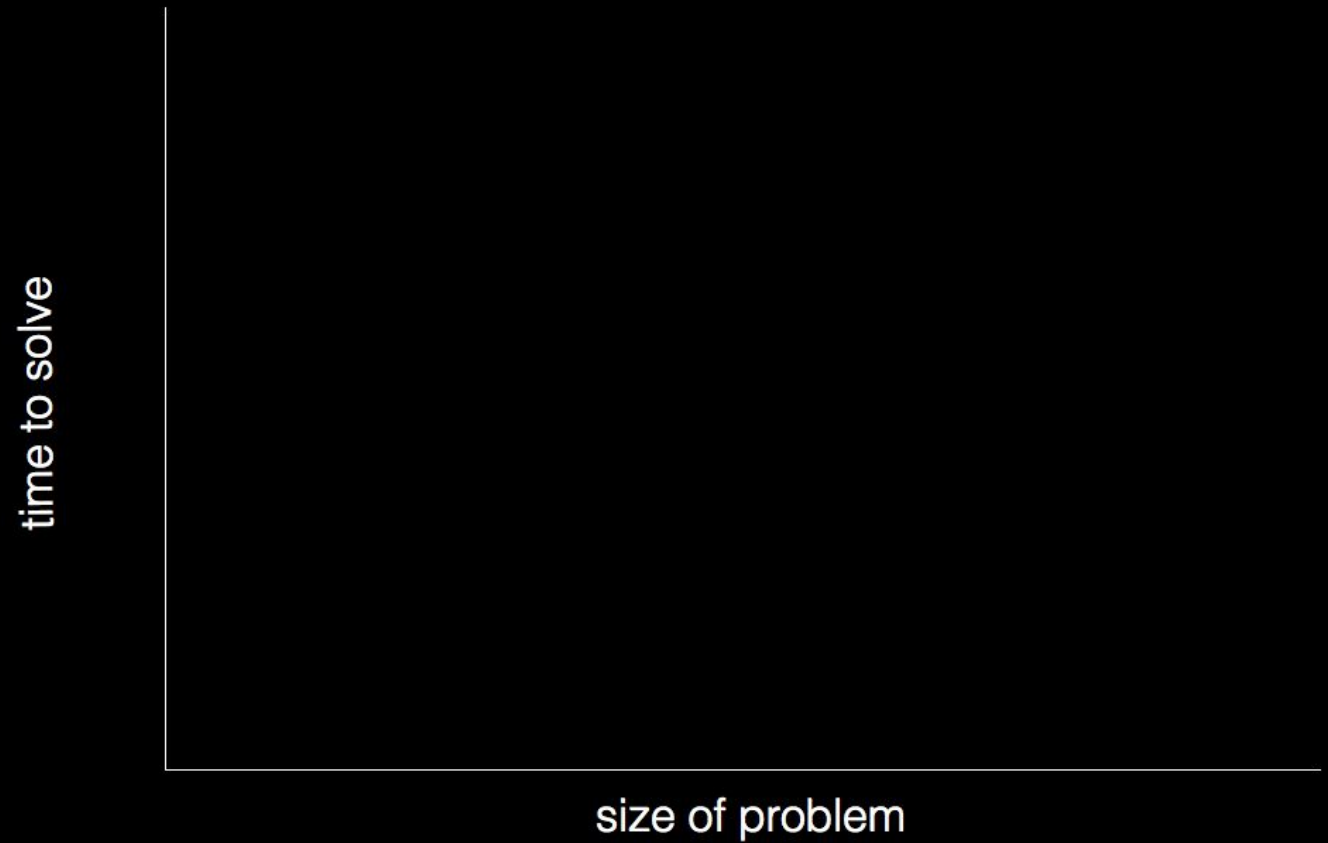
face-with-tears-of-joy_1f602.png

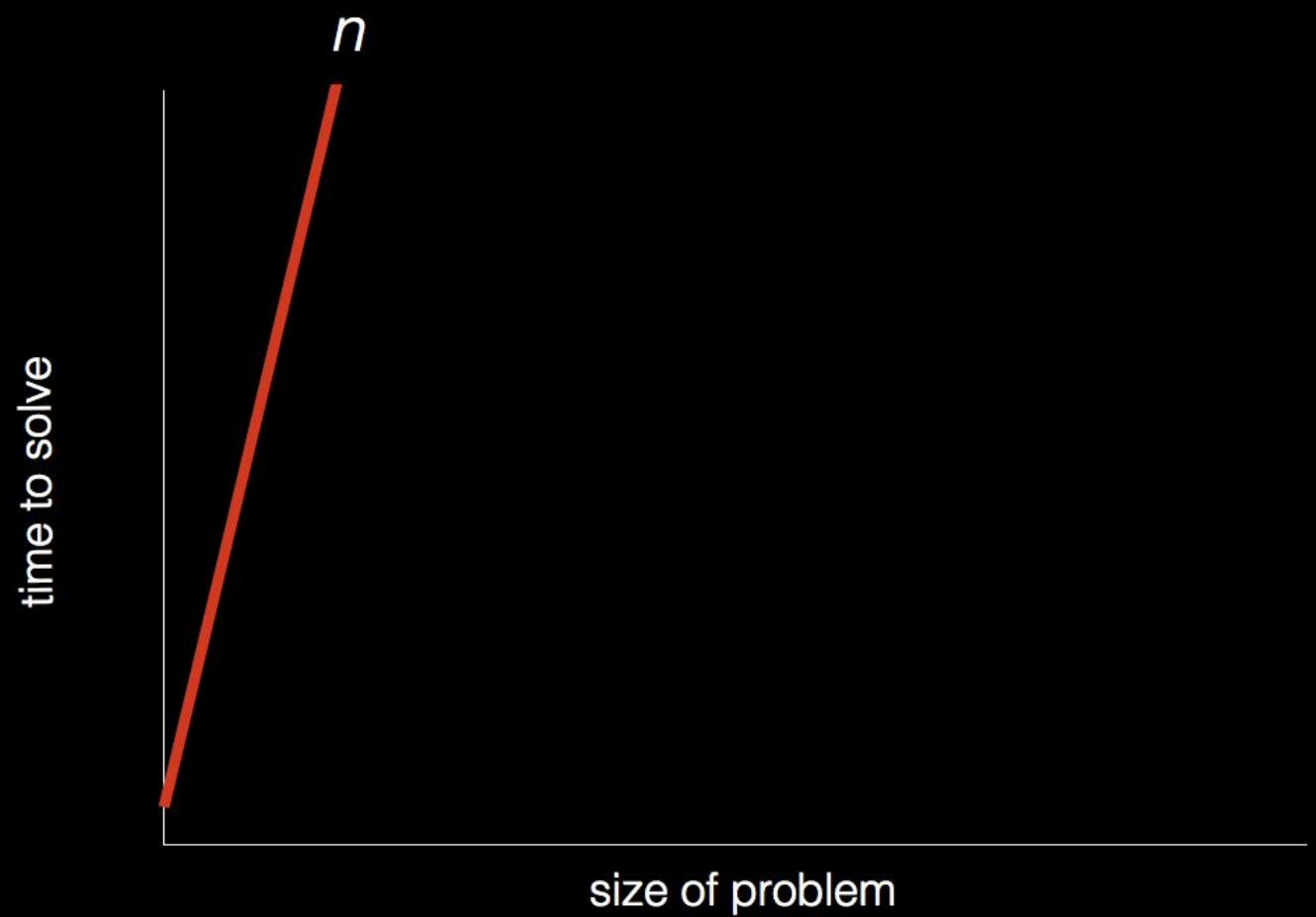

face-with-tears-of-joy_1f602.png
Search

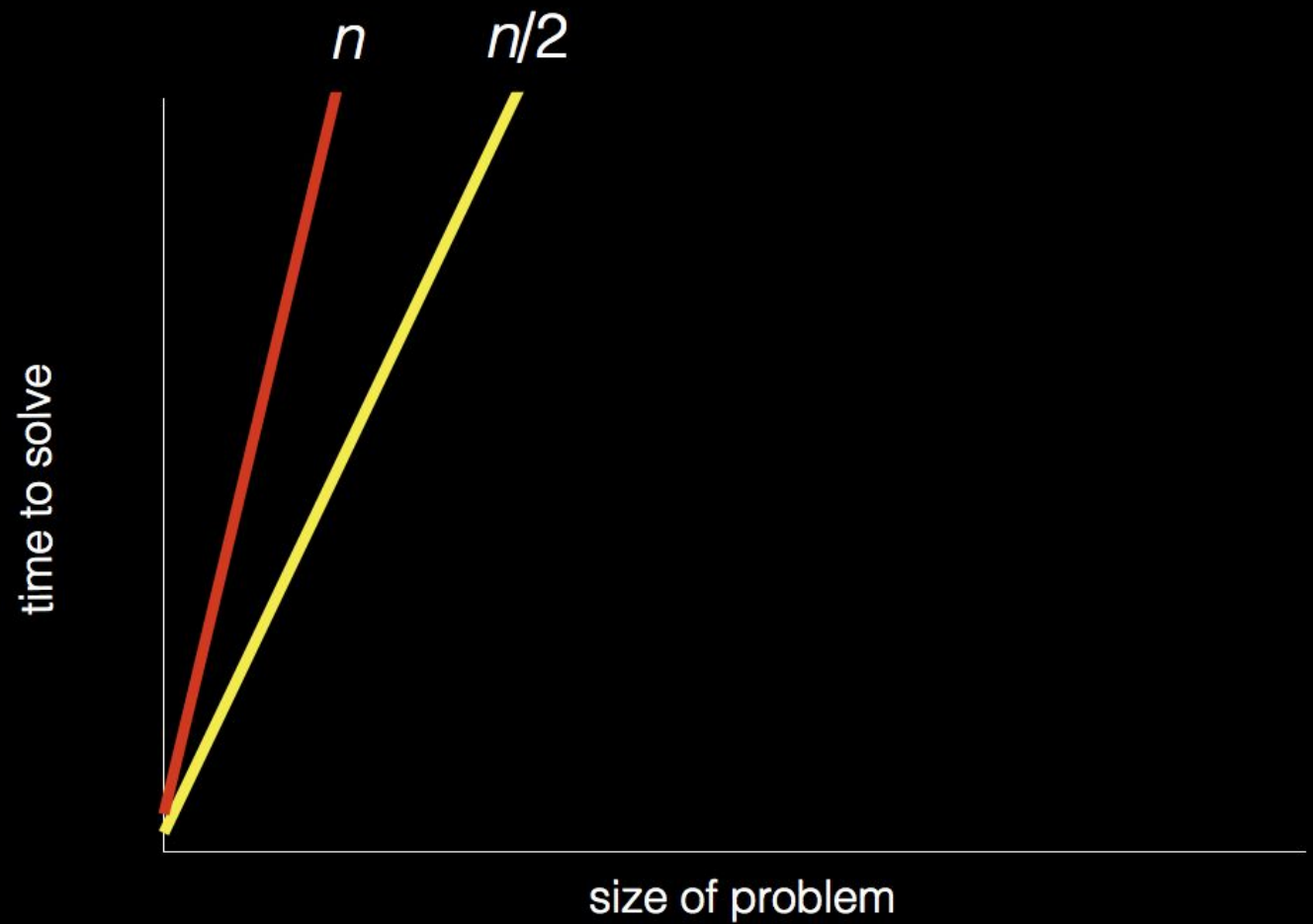

face-with-tears-of-joy_1f602.png
Search

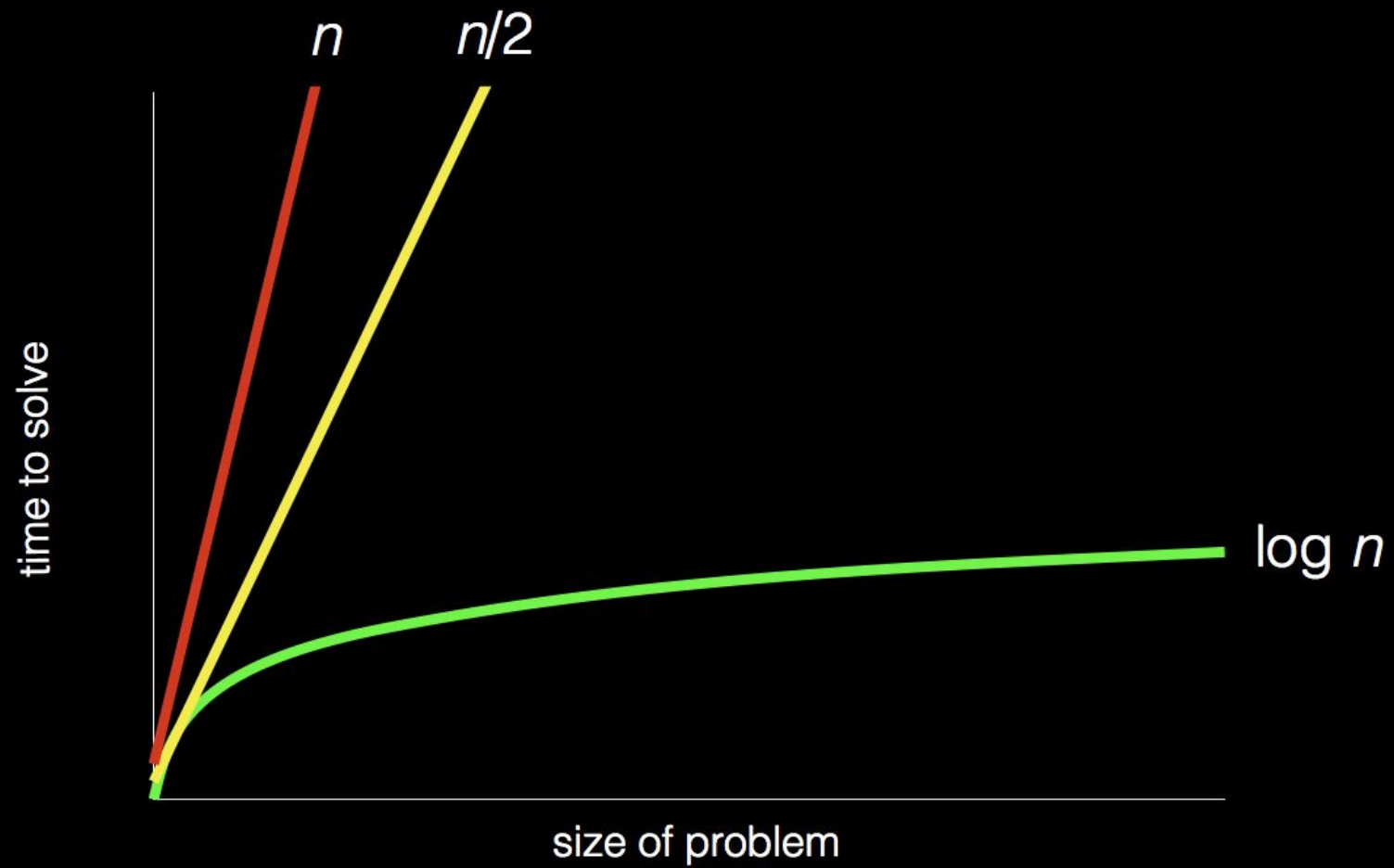

input →
→ output


algorithms


time to solve
size of problem


n
time to solve
size of problem


n
n/2
time to solve
size of problem


n
n/2
log n
time to solve
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
```

```
 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
```

```
 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
```

```
 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
```

```
 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
```

- functions
- conditions
- Boolean expressions
- loops

- functions
- conditions
- Boolean expressions
- loops
- variables
- threads
- events
- ...

scratch.mit.edu

Assignment 0