30 Aug 2016

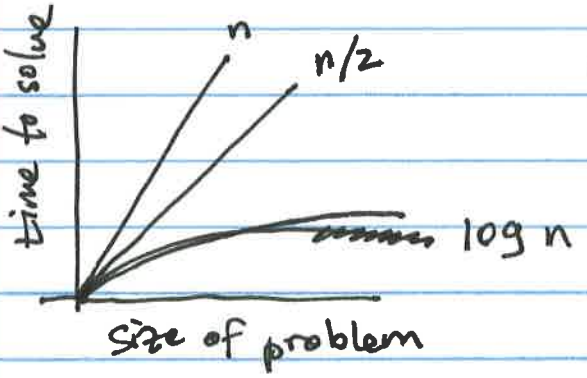
Algorithm a set of instructions for solving a problem step by step

Look up someone in a phonebook
→ ok a little old but you get the idea
Now cell phone does it is the SAME way that you do it

Look for Mike Smith page by page
→ is this algorithm correct?
→ SURE, but its slow

Could do by every other page
→ algorithm has a bug

What do most humans do?
→ Flip in half, now we can tear the problem in half. Same problem now half as large
→ Flip in half again etc, etc



Whats shape of 3rd
if ~~problem~~ verizon doubles
problem 1000 → 2000 pg
1000 times more
n → ~~2 times as long~~
n/2 → 500 times more
log n → 1 more step

COMPUTATIONAL THINKING!

pseudocode

1) Pick up phonebook
2) Open to middle of phonebook
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 middle of right half of book
11) go to line 3
12) else
13) → give up

CONDITIONS → decision pts

statements / functions / procedures
do this

Conditions in life → decisions

if raining get jacket } computers just do this super fast

What are 8 and 11 telling? LOOP/CYCLE } computers are good at repeating commands MILLIONS of times

happy birthday to everyone on facebook