

Learning Goals (Today)

- Define Algorithms
- Understand Course Structure
- Develop Group Work Strategies

Announcements / Logistics

- Apply to do research with CS profs in summer
go/cs-summer-research & contact profs via e-mail
- Upcoming assignments (Getting to know you, participation, rough draft)
- Office Hours (this week only), Th 2:30-4:00, Fr 9-10:30
- Tutoring hours

Mon

PSet, Participation
check-in

Thurs

Rough Draft, Quiz, Self-assessment

Which are algorithms?

A. Travel to Cambridge

Not clear.
Which Cambridge?

```
B. int i = 1;
   while (i < 5) {
       i = i * -1;
   }
```

Infinite

Algorithm def:

A finite, clearly defined
sequence of instructions
for carrying out a task.

C. function Fib(i)

- Input: integer $i: i \geq 0$
- Output: i^{th} Fibonacci number

If $i \in \{0, 1\}$ then return i

Return $\text{Fib}(i-1) + \text{Fib}(i-2)$

OK

No task

```
D. public static void fun(int j) {
    int k = 1;
    k++;
}
```

Plan for Semester

Frameworks:
Paradigms

Divide &
Conquer

Greedy

Dynamic
Programming

Tasks:

Describe
(pseudocode/java)

Prove
Correct

Analyze
Runtime

Consider
Ethics of
Implementations

+ NP-completeness (comparing difficulty of problems)

Learning Goal: Become a better learner + collaborator

Think of something you are good at.

How did you get good at it?

Did you ever make mistakes?

What did you do when you made a mistake?

- Revisions possible for all assignments
- Credit / No credit + feedback

Group work: in class, not graded, help to learn,

I will provide solution, in groups ~3 wks

- ← be a better team member
- ← by explaining
- ← by asking questions
- ← making mistakes

go/CS302A-group

go/CS302B-group