Momentos

- Slides and Audio online
- Need to register
  - Go to [https://fiu.momentos.life](https://fiu.momentos.life)
  - If you don’t already have an account
    - Click on “Sign up”
    - Follow instructions & use referral code: XLY6FD
  - If you have an account, “Add Course” with code XLYF6D
  - Verify account using link sent to email
Why?

I am here because ...
- It’s required

Hate being here because ...
- It’s required
What do you expect to learn?
Why should I care about **Algorithms**?

Cartoon from *Intractability* by Garey and Johnson
More questions you should ask

- Who should know about Algorithms?
- Is there a future in this field?
- Would I ever need it if I want to be a software engineer or work with databases?
Why are theoretical results useful?

“I can’t find an efficient algorithm, because no such algorithm is possible!”

Cartoon from *Intractability* by Garey and Johnson
Why are theoretical results useful?

"I can't find an efficient algorithm, but neither can all these famous people."

Cartoon from *Intractability* by Garey and Johnson
Person of the Year ...
Time’s Person of the Year

2018

2017

[Image of Time magazine covers]
The first hundred votes ...

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Who won a majority?
Standard Approaches

- Keep a list of candidates and their counts
  - Every vote needs to be compared against every candidate in the worst case
- Sort the list and count
  - Sorting is the bottleneck
  - Can we avoid sorting?
Wacky Ideas, anyone?

What if I pick two random votes and they turn out to be different?
Evaluation

- Exams (2) 45%
- Quizzes 10%
- HW Assignments 30%
- Kattis Submissions 5%
- Semester Project 5%
- Class Participation 5%
What you should already know …

- Array Lists
- Linked Lists
- Sorted Lists
- Stacks and Queues
- Basic Sorting Algorithms

- Trees
- Binary Search Trees
- Heaps and Priority Queues
- Graphs
  - Adjacency Lists
  - Adjacency Matrices
Algorithms are “recipes”!
Algorithms can be simple