Lecture 36: Graphs Preview and Ethics Discussion

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Midterm Grades
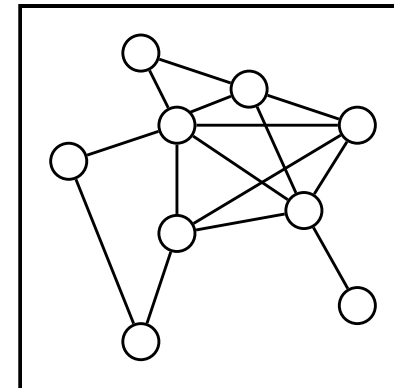
>59 ~ A

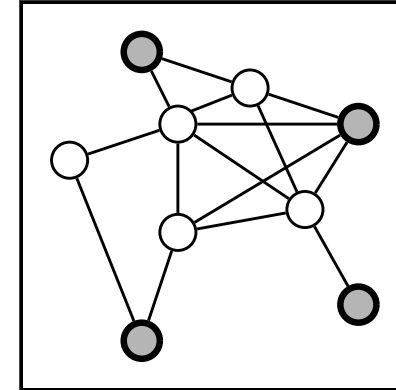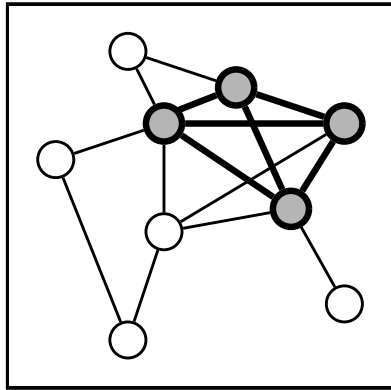50–58 ~ B

40–49 ~ C

<40 ~ D/F

Graph Structure

- Nodes
- Edges
  - Can be directed or undirected

Graph Algorithms

- Facebook friends
- Scheduling final exams
- Solving logic puzzles

Data Structures

- Data structures are models of the real world
- Bad models → bad decisions
- Data is important!

Data Structures

- Data structures force input to *conform*
- Messy real stuff gets simplified
- Errors can shut out users

Discussion: Representing Gender

Discuss in groups:

- What data type would you use to represent *gender* in a data structure?
- What data type would you use to represent *sex* in a data structure?
- How would a user enter this data?

Algorithms

- Algorithms *promise* easy-to-understand effects
  - E.g., "the data will be sorted"
- Algorithms *enable* new behavior/interactions
- What if your data is tainted?
- What if your algorithm has bias?

Discussion: Facebook Feed

Assume Facebook scores:

- How often an item is liked/shared/clicked
- Average likes/shares/clicks for each user's content
- Sorts feed by (user score + item score)

Discuss in groups:

- What incentives does this create?
- What could go wrong?

Facebook Feed Continued

- How could you improve the algorithm?

- What are Facebook's incentives?