CMPSC112
Lecture 30: Graphs
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Last Time

• Priority Queue – Get the largest/smallest value in a data structure quickly

• Heap – An implementation of a priority queue in tree form
  – swim() and sink() functions
Basic Graph Terminology

- Graph
- Vertex
- Edge
- Self-loop edge
- Parallel edge
- Degree
- Subgraph

- Path
- Simple path
- Connected/Disconnected
- Undirected/Directed
- Cyclic/Acyclic
- Tree
Challenge #1

• How can we store the data contained in our graph in a way that both is time- and space-efficient?
  – Adjacency matrix
  – Edge list
  – Adjacency list
Challenge #2

• How can we determine if a path exists that begins at node $s$ and ends at node $t$?
  – Depth-First Search
  – Breadth-First Search
Any Questions?