BST & Recursion Review

- Binary Search Tree
  - fan-out of 2
  - search time:
    - Best case Worst case
  - insert time:
    - Best case Worst case
  - Advantages:
  - Disadvantages:

Recursion

- Can I sum all the nodes in a tree without recursion? (from the exam question)
- Note: this is a job interview type question
  - stack/queue: track where I have been and go back to it or save something to process later
  - hashtable: calculate/store and lookup multiple times
  - Search Tree: store data, lookup, retrieve in sorted order

recursive solution

non-recursive solution

Other types of Trees

- Balanced Trees
  - AVL
    - binary tree
  - Red-Black
    - binary tree
    - used in the Linux kernel
    - discussed in CS 380: Algorithms
  - B-Tree (Variants: B+, B*)
    - More than 2 children per node
    - often used for databases or file systems
    - B-Tree stored in a file.

B-Trees chapter 11

- B-Tree of order N
  - Properties:

Goals

Code

Search

Insert

Delete