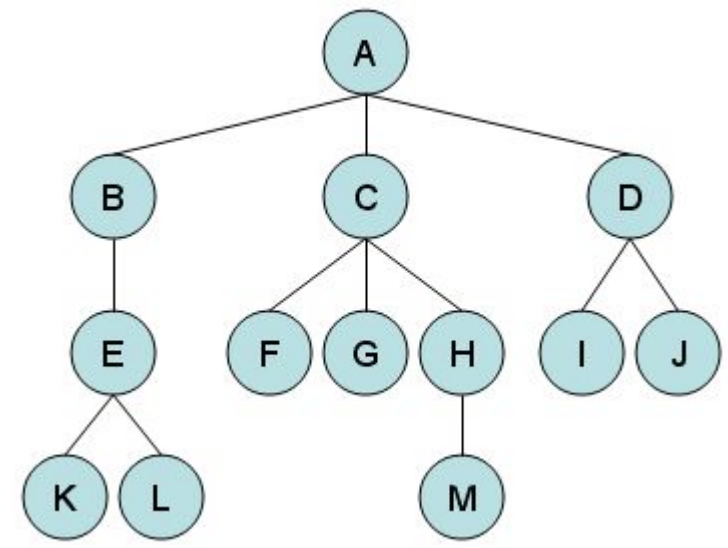
Trees

http://bit.ly/VTProgTrees

What is a Tree?

- A Tree is a type of linked data structure comprised of a root node with connections to subtrees with their own respective roots.

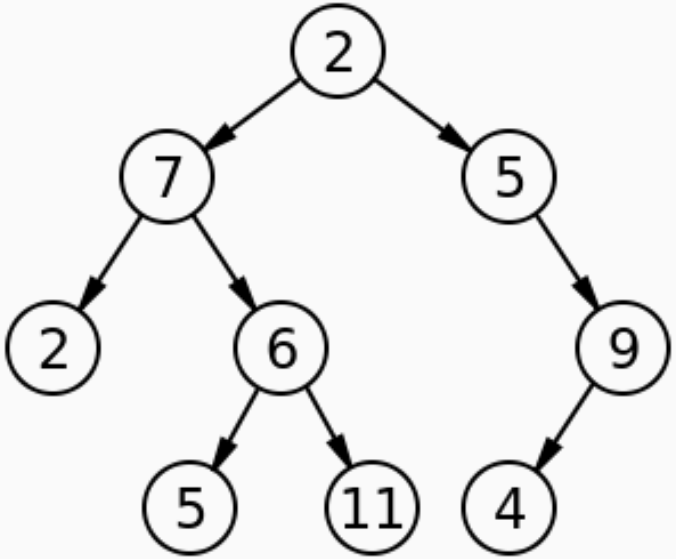
Example



Binary Trees

- Binary trees are the most commonly used form of trees
- Binary trees are restricted to having a maximum of two children per node
- This simplifies the implementation.

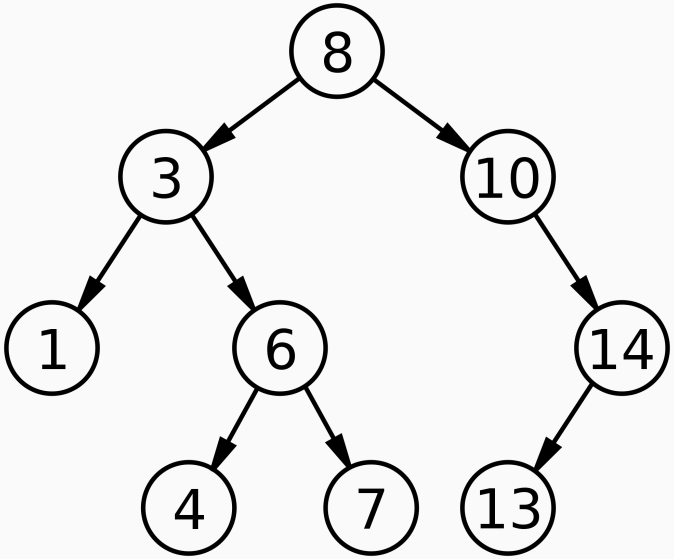
Example



Binary Search Trees

- A binary search tree is a special form of a binary tree, in which nodes are stored in sorted order.
- This allows us to quickly find information in the tree.

Example



Recursivity of Trees

- When working with Trees the most important thing to note is the recursive nature of them.
- Every node in a tree serves as its own tree, and so it is easy to break down problems accordingly.

Recursive Descent Parsing

- How we can parse the trees in?

Problems for today

- https://contest.spruett.me/problems#A
- Template with parsing:
  - https://spruett.me/blog/static/code/Tree-template.java.html