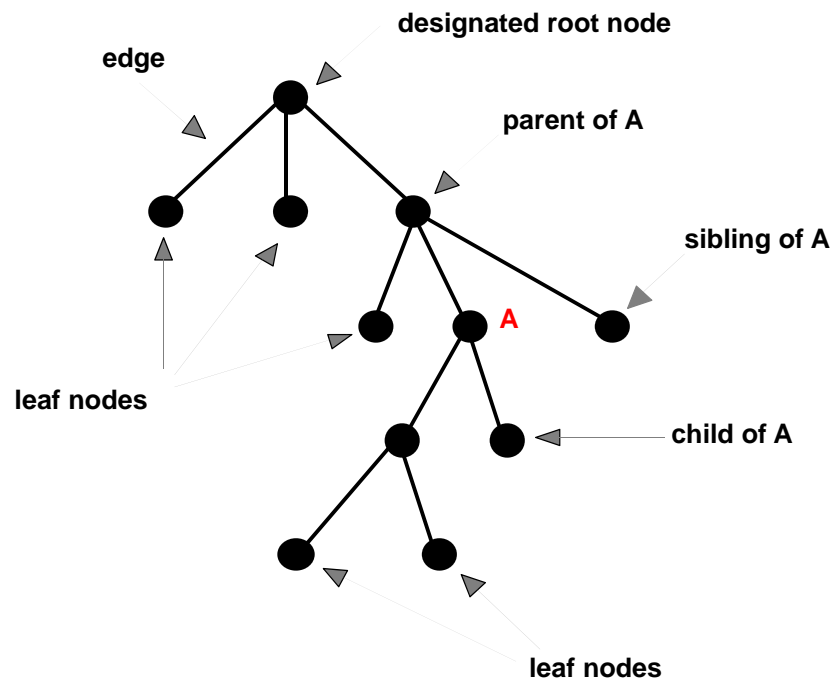


Terminology



9

Information Visualization MOOC

Unit 5 – “With Whom”: Tree Data

Overview and Terminology

Sample Trees

Hierarchies

- File systems and web sites
- Organizational charts
- Categorical classifications
- Similarity and clustering

Branching processes

- Genealogy and lineages
- Phylogenetic trees

Decision processes

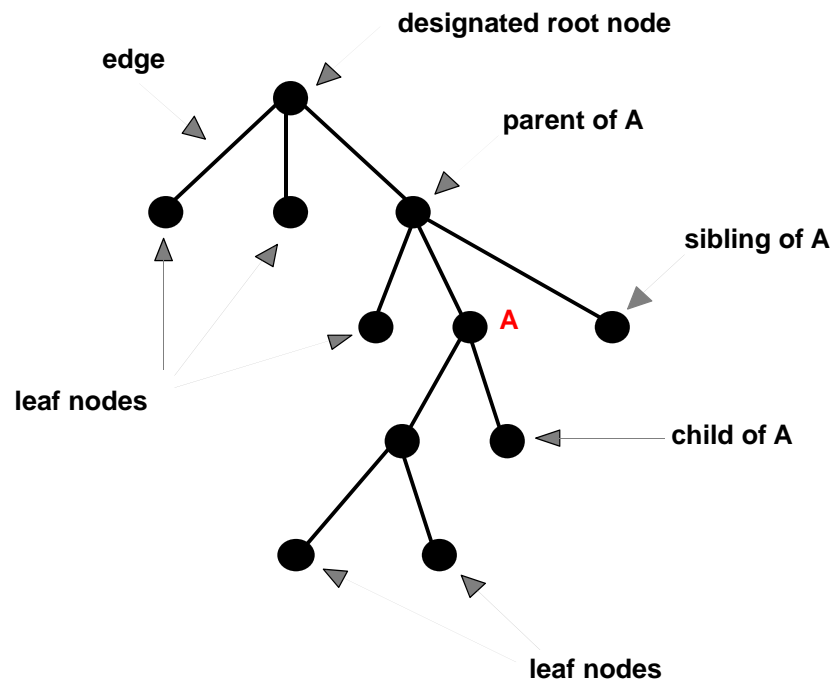
- Indices or search trees
- Decision trees
- Tournaments

Source & samples :

<http://www-graphics.stanford.edu/~hanrahan/talks/todrawatree/>

11

Terminology



12

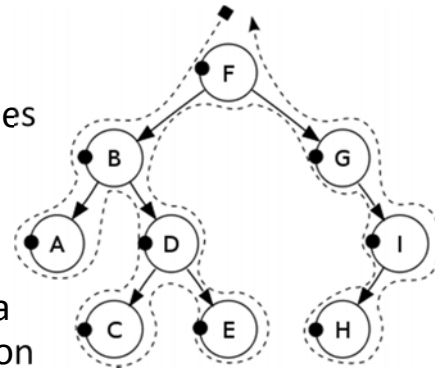
Tree Types

Rooted tree: Has designated root node.

Unrooted tree: No designated root node.

Binary tree: Each node has at most two child nodes.

Balanced tree: Rooted tree whose subtrees differ in height by no more than one and the subtrees are balanced, too.



Sorted tree: Children of each node have a designated order (not necessarily based on their value) and can be referred to specifically.

13

Node Properties

In-degree of a node is the number of edges arriving at that node.

Out-degree of a node is the number of edges leaving that node.

The root is the only node in the tree with In-degree = 0.

All the leaf nodes have Out-degree = 0.

Depth of a node is the length of the path from the root to the node. Root node is at depth zero.

Each node can have additional properties—e.g., in a family tree, each person has a name, age, gender, hair/eye color, etc.

14

Tree Properties

Size: Number of nodes.

Height (or depth of tree): Length of the path from the root to the deepest node in the tree.

Example:

Binary tree of size 9 and depth 3. Unbalanced and not sorted.

