

Tree traversal:

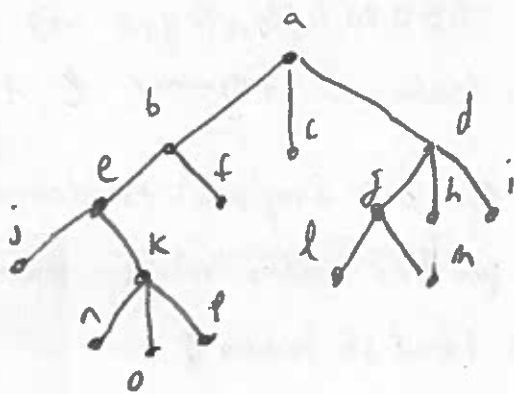
If we're storing info in trees we need methods to get around trees.

Pre order: visit node \rightarrow go left \rightarrow go right.

In order: go left \rightarrow visit node \rightarrow go right.

Post order: go left \rightarrow go right \rightarrow visit node.

Ex: Give the traversal orders for



Pre start at root: go left visit go left etc

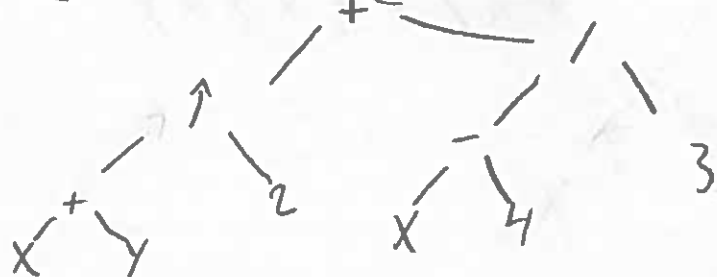
a, b, e, j, k, n, o, p, f, c, d, g, l, m, h, i

In: j, e, n, k, o, p, b, f, a, c, l, g, m, d, h, i

Post: j, n, o, p, k, e, f, b, c, l, m, g, h, i, d, a

With this we can represent ordered operators:

i.e. $((x+y)^2) + ((x-4)/3)$



The notation we use is called infix form operators between operands.

travelling this tree in preorder will give preorder form.

$$+ \uparrow + x y 2 / - x 4 3$$

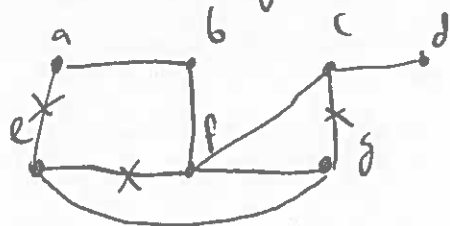
This seems confusing, but really it's just function notation!

$$+ \left(\uparrow \left(+ (x, y), 2 \right), / \left(- (x, 4), 3 \right) \right)$$

Spanning tree:

Def: Let G be a ^{simple} graph. A spanning tree of G is a subgraph of G that is a tree containing every vertex of G .

Ex: Find a spanning tree of



Ex: Represent $x + ((xy + x)/y)$ using prefix notation

+ Let's make the tree first!

+ x / + * x y x y

