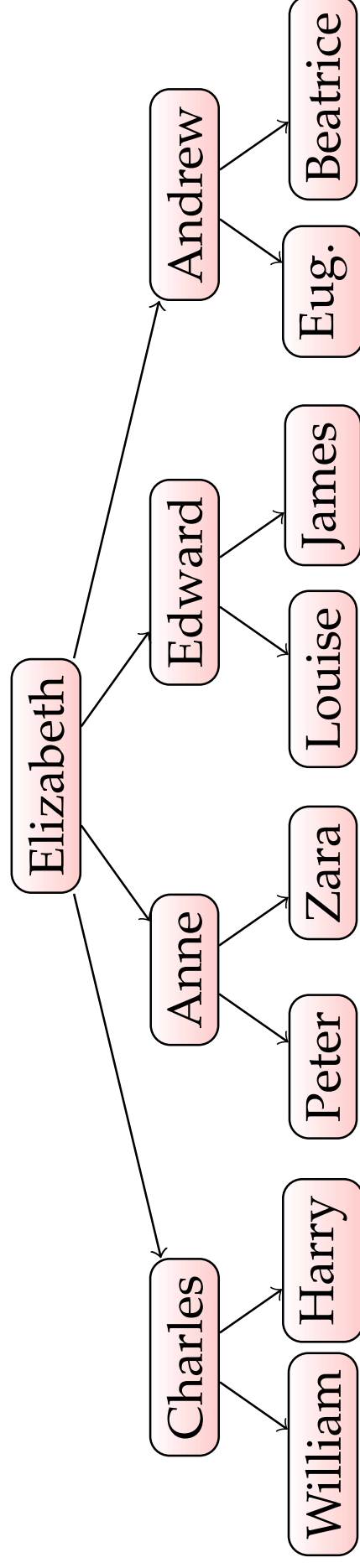# Trees: Terminology
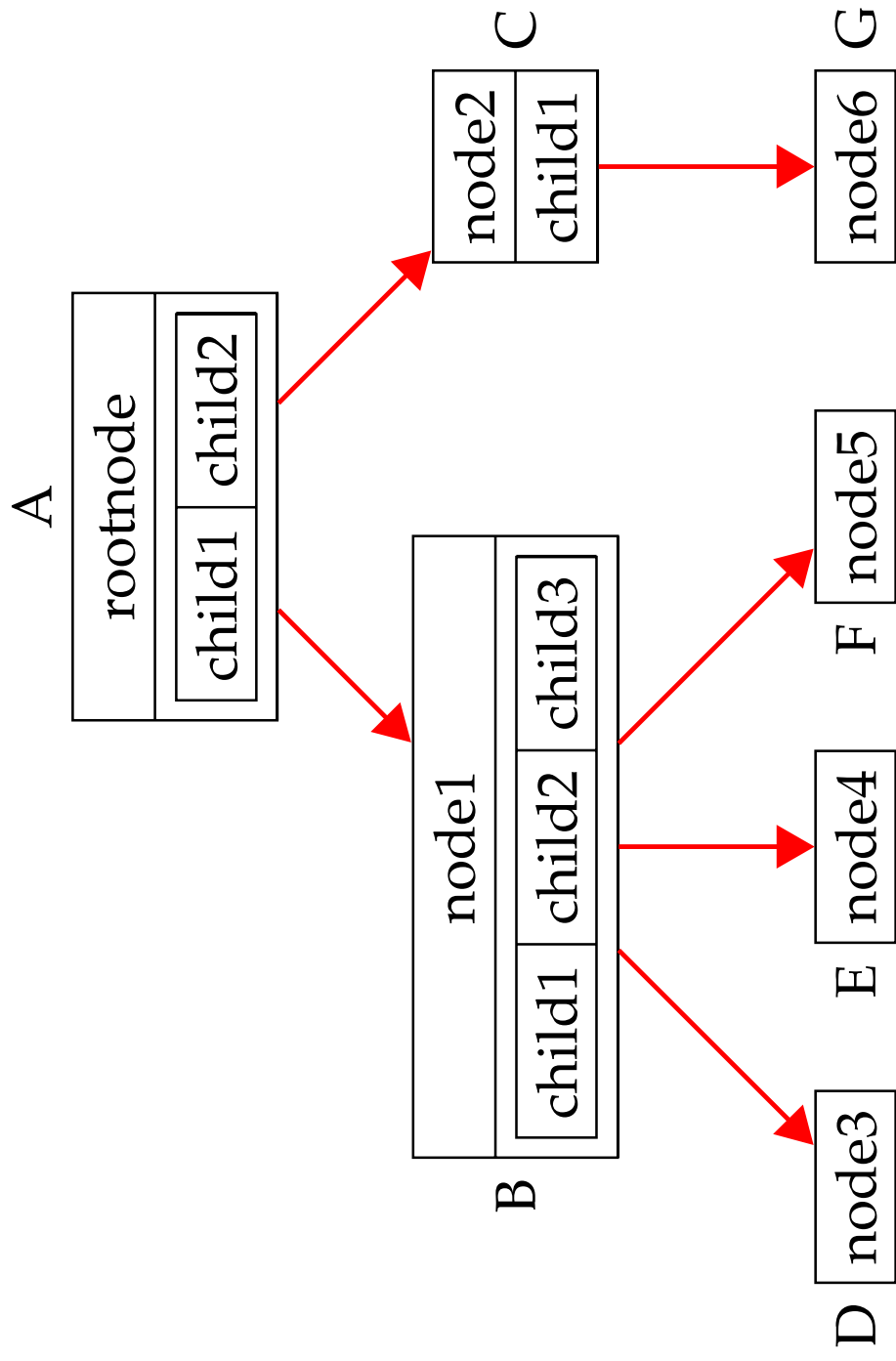

- *arity* of a tree: binary trees, ternary trees, *k*-ary trees, etc.

- *root* of a tree

- *leaf* of a tree

- *child* of a node

- *parent* of a node

- *ancestor* of a node

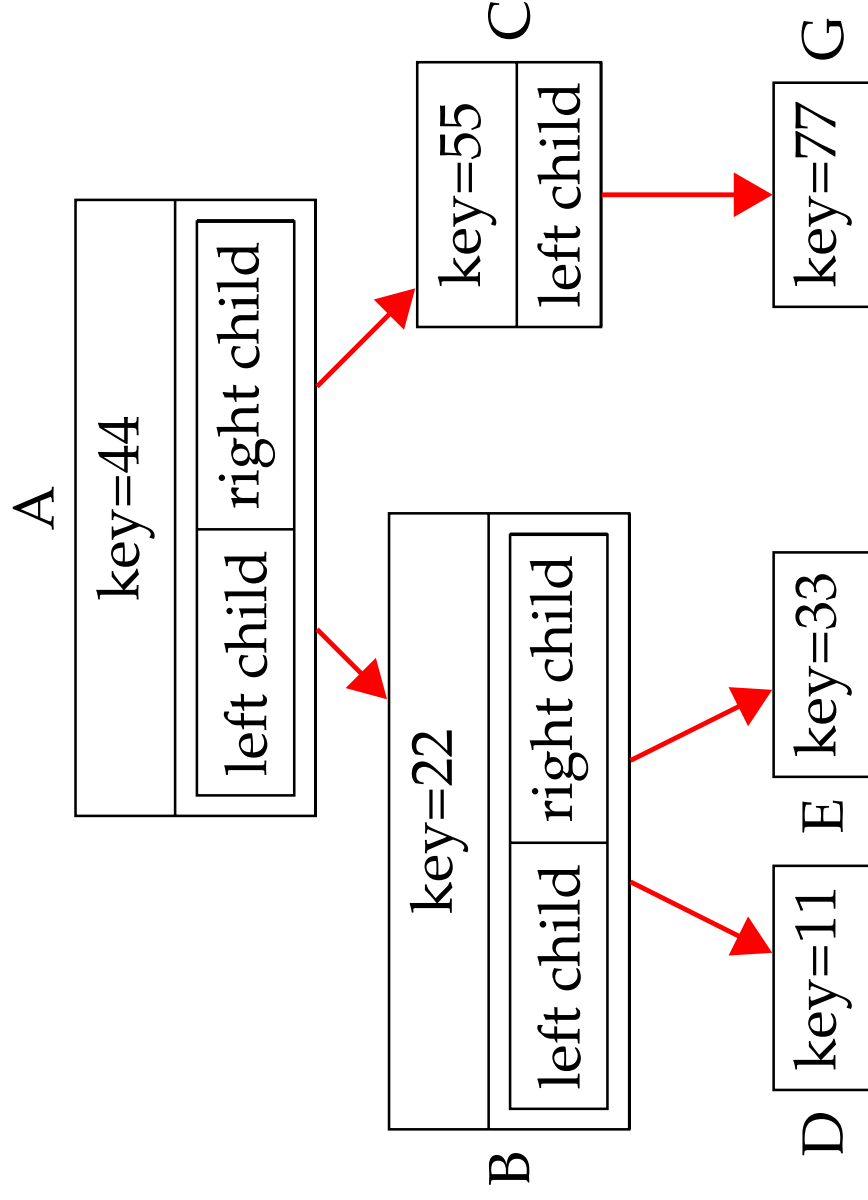- *descendant* of a node

- *sibling* of a node

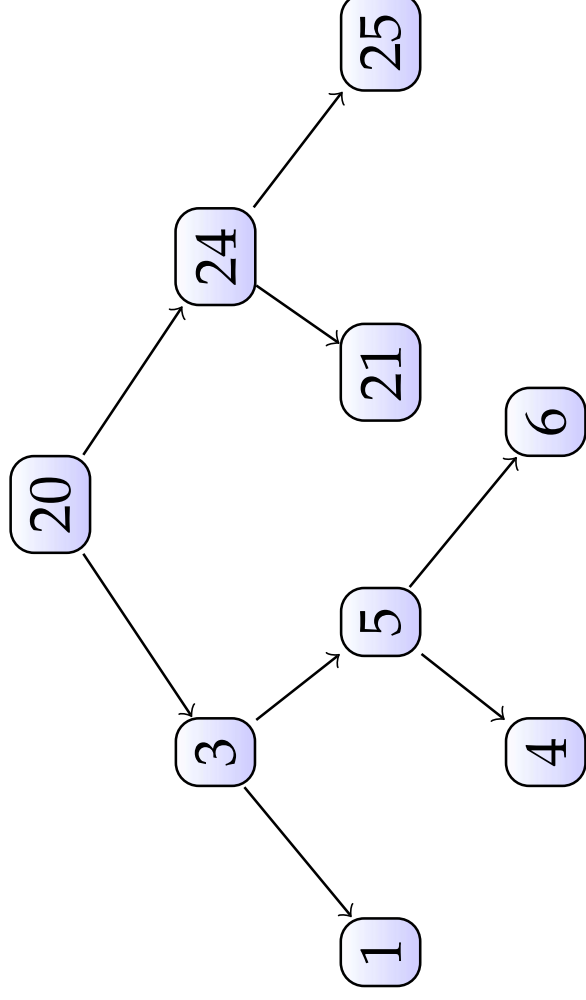# Trees as a linked structure

Binary Trees as a linked structure

A

key=44	
left child	right child

C

key=55	
	left child

G

| key=77 |

B

key=22	
left child	right child

D

| key=11 |

E

| key=33 |

– *left sub-tree* of a node
– *right sub-tree* of a node

Binary Trees

Properties: If x and y are nodes, and

1. y is in the left sub-tree of x, then

$$y.key < x.key$$

2. y is in the right sub-tree of x, then

$$y.key \geq x.key$$