

Properties of Tree. (p690)

Thm 2. tree e edges, n vertices

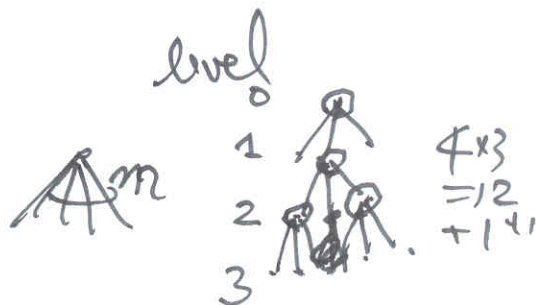
$$e = n - 1$$

Thm 3. A full (regular) (m) -ary tree with i

i internal vertex $n =$

$$n = m \cdot i + 1 \text{ nodes vertices}$$

Every internal vertex: m nodes.



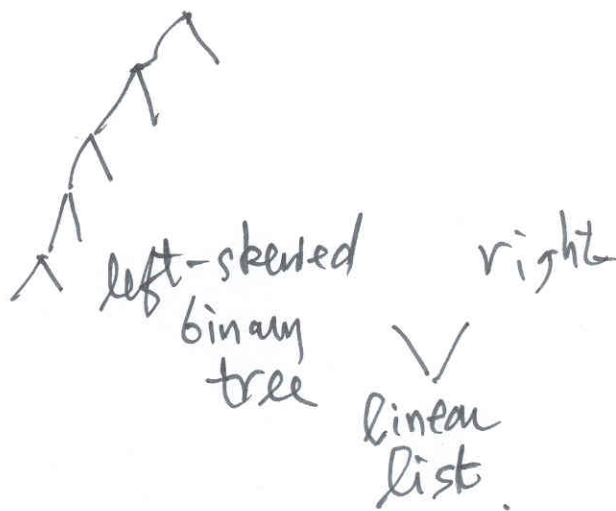
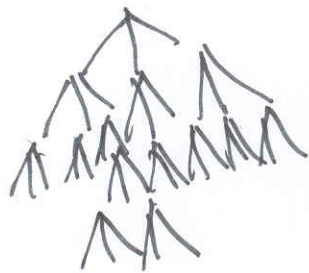
$$e = n - 1 \quad \frac{m(i) + 1}{\text{root}} \quad \underline{i + l = n}$$

Three eq. variable: e, n, i, l (given m)

level: node

height: tree max. level.

balanced: tree



m^h leaves.

Search

linear search $O(n)$

binary search $O(\log n)$

... sorted

3) Prefix code ... Full binary tree
leaves of

$v \in V$ l_v : length of v

w_v : occurrence of v

minimize $\sum l_v \cdot w_v$