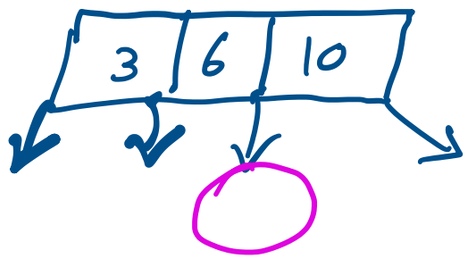
DBMS 4

Tuesday, 7 September 2021 9:20 PM

B-Tree

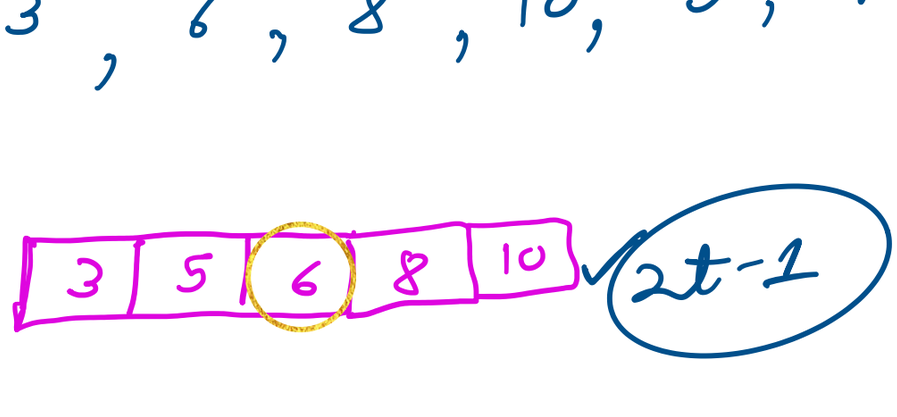


1) All leaves are at same level.
2) A degree 't' is defined based on the disk block size.
3) Every node except root must contain atleast "t-1" key.
4) All nodes may contain atmost "2t-1" keys ← (odd)
5) # children = # keys + 1
6) All keys are in ascending order. The child between 2 keys K1 & K2 has the range from K1 to K2.
7) TC = O(Height) = O(log N)

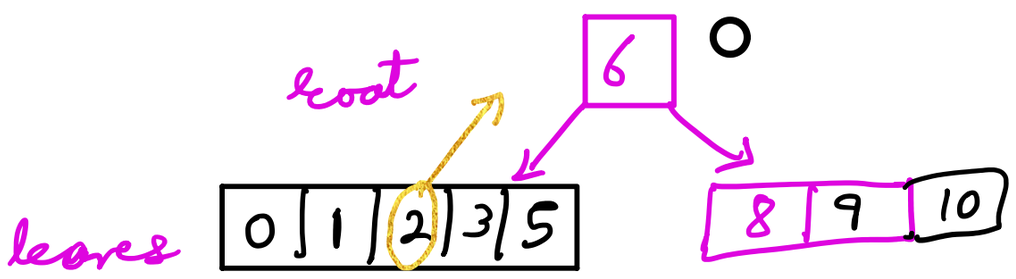
t = 3

3, 6, 8, 10, 5, 1, 2, 9, 0, 4. -

root & leaf



t = 3
t-1 = 2 ✓
2t-1 = 5 ✓
odd



$$\frac{2t-1-1}{2} = \frac{2t-2}{2} = t-1$$