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ADS Lab 7

Program 6

Insertion in B-tree

1) Initialize x as root
2) while x is not leaf, do following
   a) find the child of x that is going to be traversed next, Let child be y.
   b) If y is not full, change x to point y.
   c) If y is full, split it and change x to point to one of two parts of y. If k is smaller than mid key in y, then set x as first part of y. Else second part of y. When we split y, we move a key from y to its parent x.
3) The loop in Step 2 stops when x is leaf. x must have space for 1 extra key as we have been splitting all nodes in advance. So simply insert k to x.

t = 3

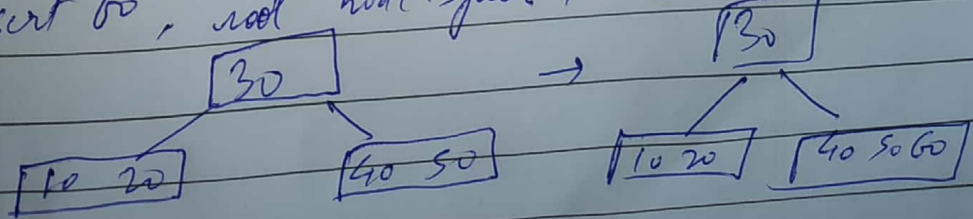
e.g. Insert 10, 20, 30, 40, 50, 60, 70, 80 & 90

1) [10]

2) [10 20 30 40 50]

3) Insert 60, root node is full, hence we split into 2

i.e.



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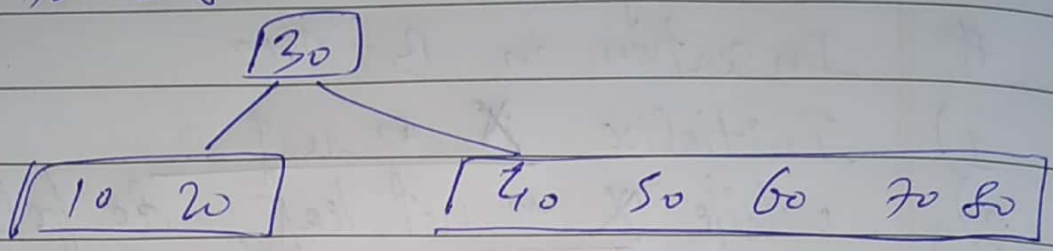
Pg 2

4) Insert 70 & 80



Insert 90, we split