1BM18CS153 Vinay Kumar

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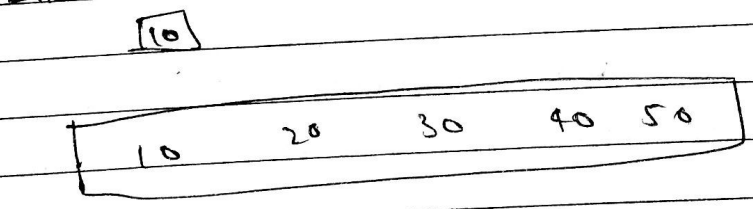
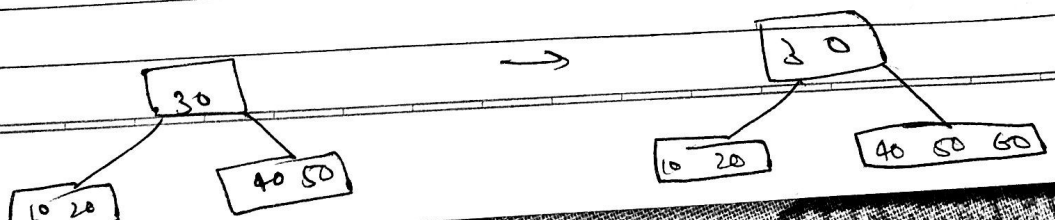
Insertion operation on a B-Tree

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 the child be y.
   b) If y is not full, change x to point to y.
   c) If y is full, split it & change x to point to one of the two parts of y. If K is smaller than mid key in y, then set x as the 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.

Ex Insert 10, 20, 30, 40, 50, 60, 70, 80, 90



insert to root node is full, hence we split into 2



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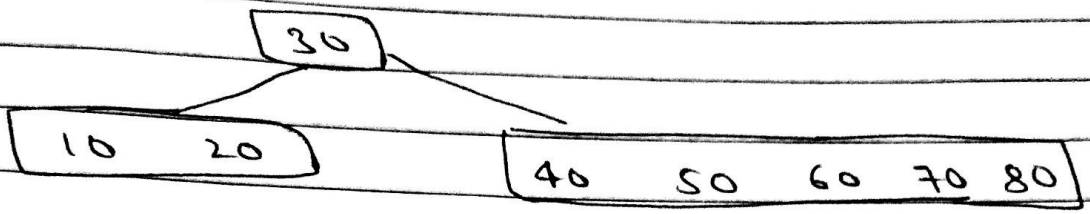
5) Insert 70 & 80



Insert 90 ; we split