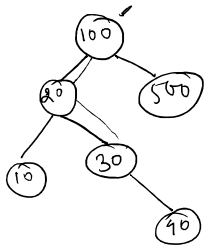
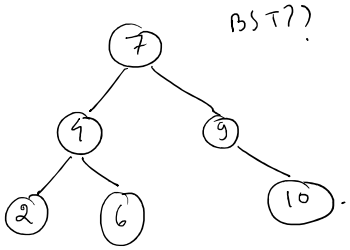
05 February 2025 11:24

Insert 100, 20, 30 , 500, 10, 40 in BST.



BST??



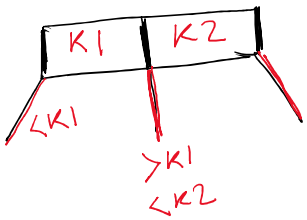
Boundaries represent pointers.

B—Tree — Order = m.

Maximum number of children = m
Maximum number of keys in a node = m−1.

BST ⟶ Order = 2.

Order = 3



Ascending order.
K1 < K2.

Insertion in B-tree

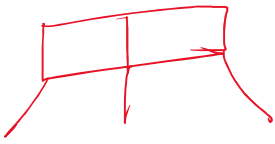
1. Insertion of new nodes should be always at last level.
2. B tree grows in upward direction.
3. Keys should be ~~sorted~~ inside a node.

in ascending order.

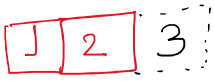
Insert 1, 2, 3, 4, 5, 6, 7, 8, 9 in a B—Tree of order 3.

Given m = 3,

Max^m no of child = 3
Max^m no of keys = 3 − 1 = 2.

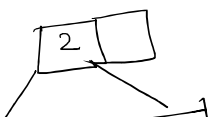


⇓ Insert 3



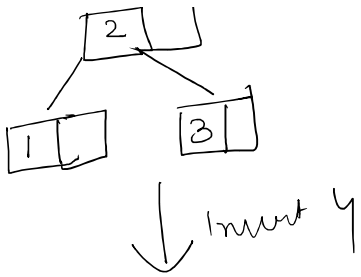
Overflow

⇓

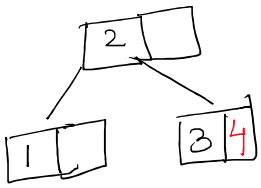


Overflow

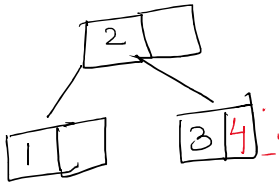
Mid.



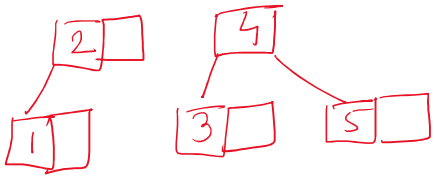
Insert 4

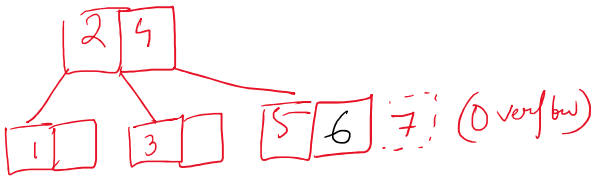


Insert 5

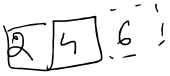


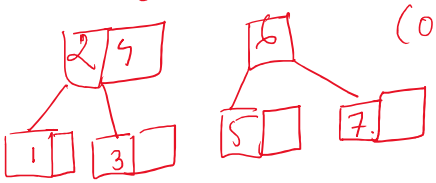
(overflow) ⇒



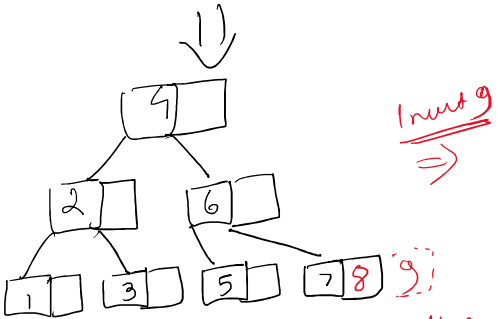


(overflow)



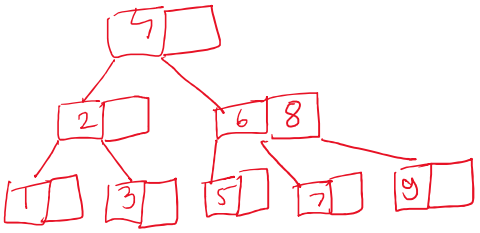


(overflow).

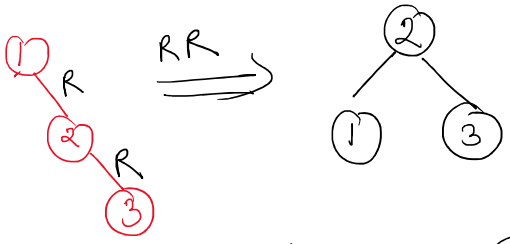


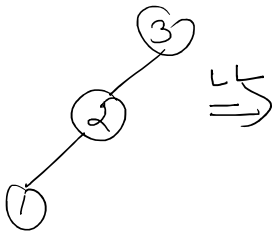
Insert 9 ⇒

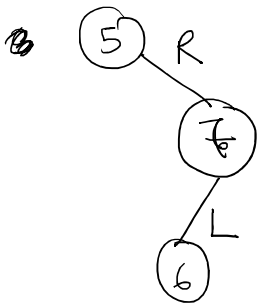
overflow

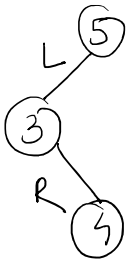


Rotation —









Rotation

Right = MAX

Left = MIN

Root = Remaining.