CS3402 Tutorial 6:

Considering a B+ tree for indexing. Each node in the tree can fit four pointers and three key values, denoted as <A1,K1,A2, K2, A3, K3,A4>. Within each node, the keys satisfy K1 < K2 < K3 For all search field values X in the sub-tree pointed by Ai, we have:

Ki-1 ≤ X < Ki for 1 < i < 4,

X < Ki for i=1,

Ki-1 ≤ X for i = 4.

1. Construct a B+ tree for the following set of key values:

(2, 3, 5, 7, 11, 17, 19, 23, 29, 31)

Assuming that the tree is initially empty, values are added in ascending order, and the number of key values in internal nodes and leaf nodes are both 3.

1. For the B+ tree constructed for question 2, show the form of the tree after each of the following series of operations:
2. Insert 9
3. Insert 10
4. Insert 8
5. Delete 7
6. Delete 8
7. Delete 5
8. Delete 19