

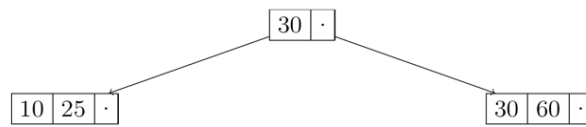
CSC 212 Tutorial Solution

B+ Trees

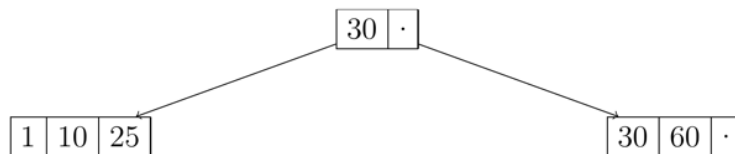
Problem 1

10	30	60
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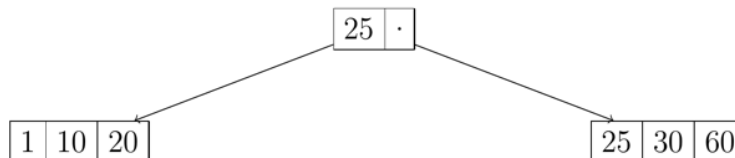
Inserting (30, 10, 60)



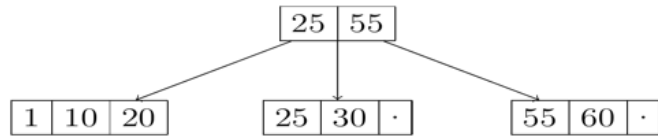
Inserting (25): split root as leaf; new root



Inserting (1)

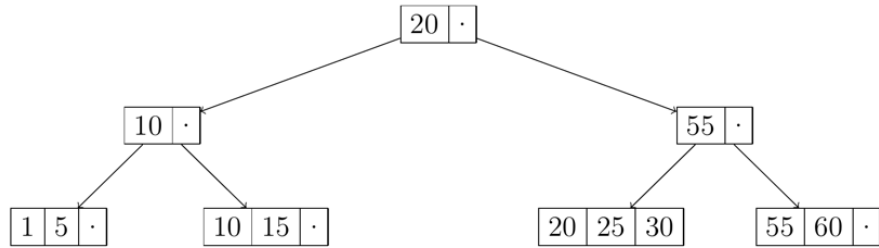


Inserting (20): transfer datum to next sibling



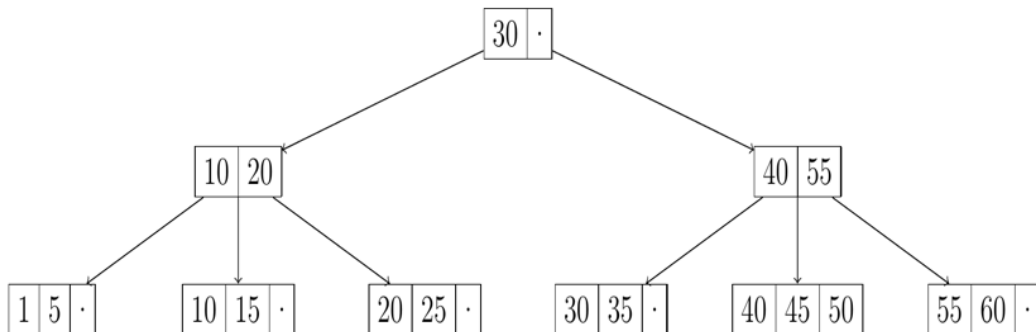
Inserting (55): split leaf

Problem 2



Inserting (15): split leaf; split parent; new root

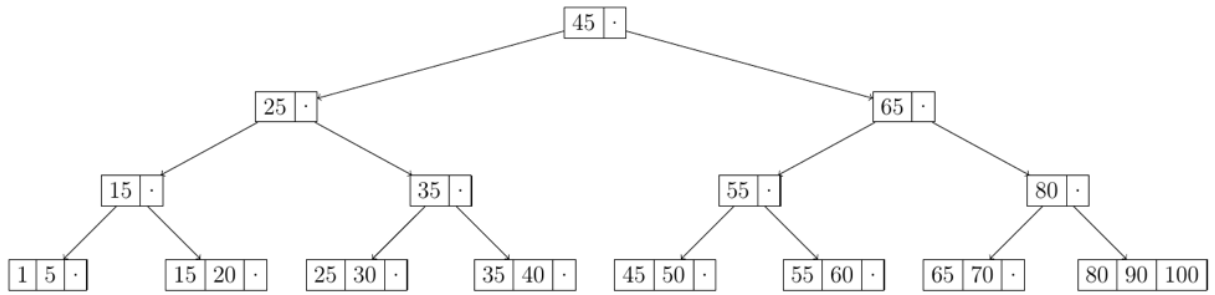
1.



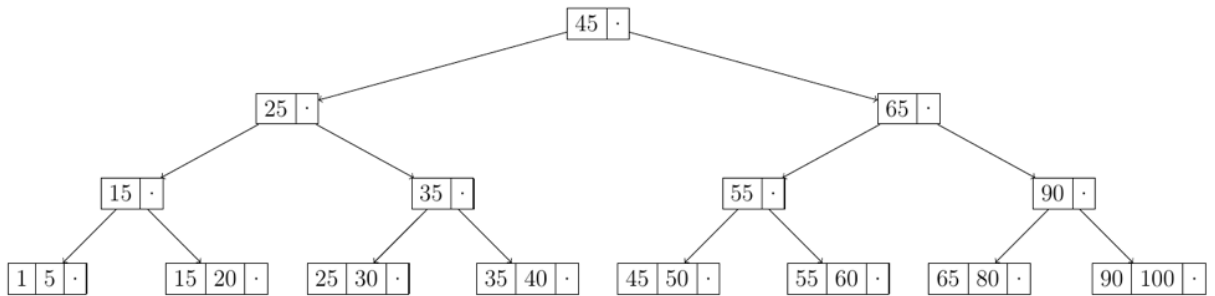
Inserting (35); split leaf; transfer leaf to next sibling

2.

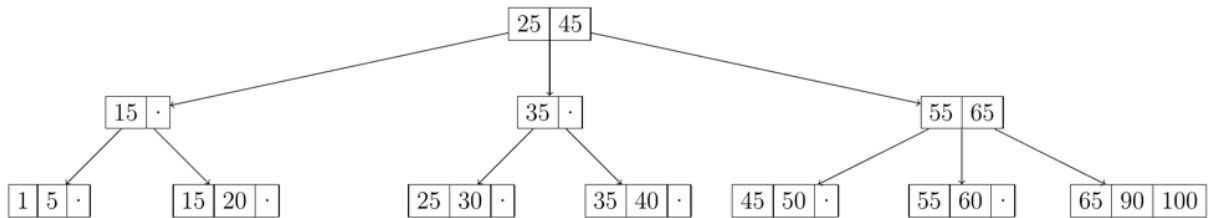
Problem 3



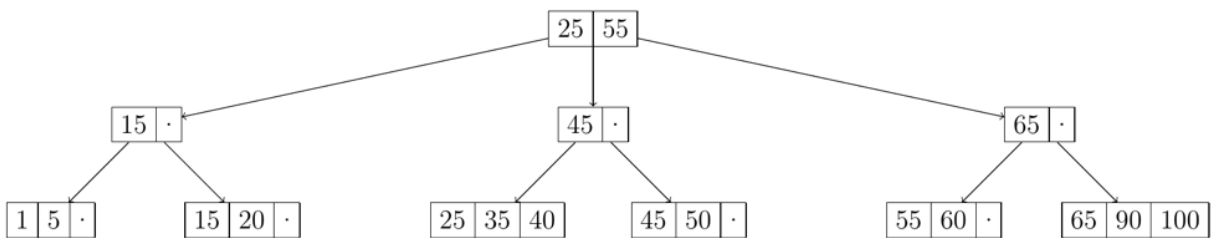
Deleting (75)



Deleting (70): borrow datum from next sibling



Deleting (80): merge leaf with next sibling; merge parent with sibling; merge parent with sibling; delete root



Deleting (30): merge leaf with next sibling; borrow leaf from next sibling