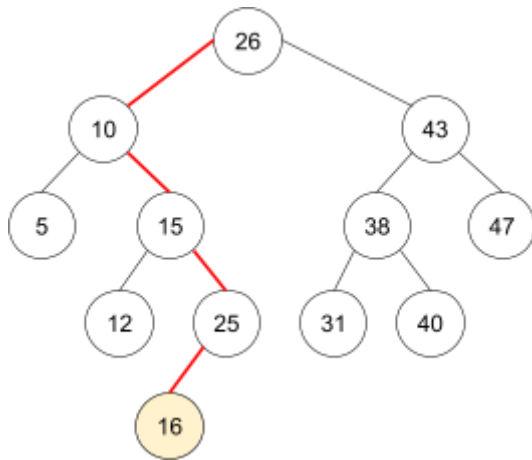


Problem 1



Inserting 16: -

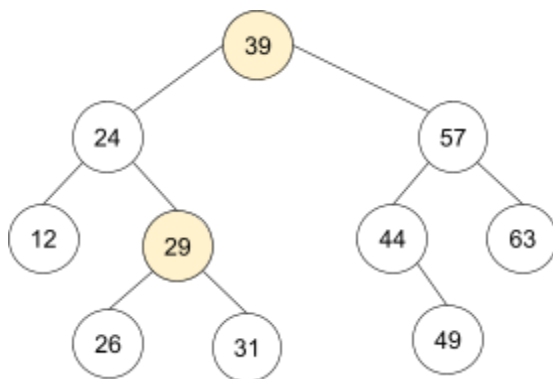
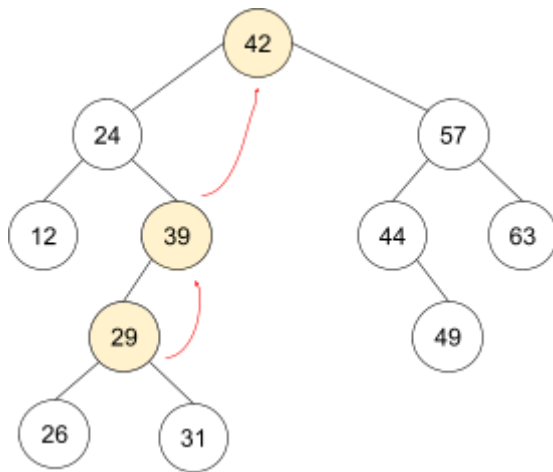
- 1) Compare 26 with 16. $26 > 16$, 16 goes to left subtree
- 2) Left subtree has 10. $10 < 16$, 16 goes to the right subtree
- 3) Right subtree has 15. $15 < 16$, 16 goes to the right subtree
- 4) Right subtree has 25. $25 > 16$, 16 goes to left subtree
- 5) Left subtree is null, so 16 is inserted

Problem 2

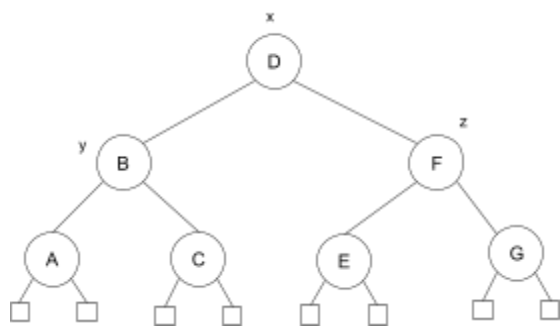
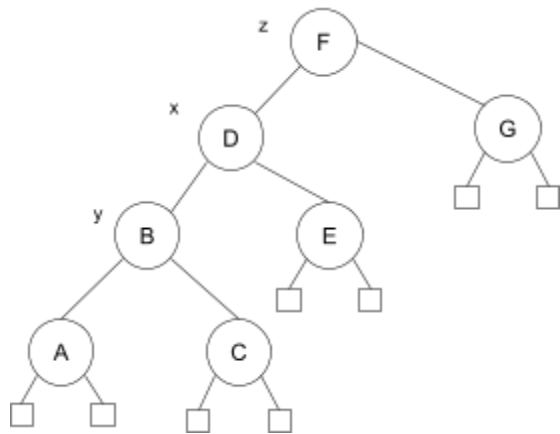
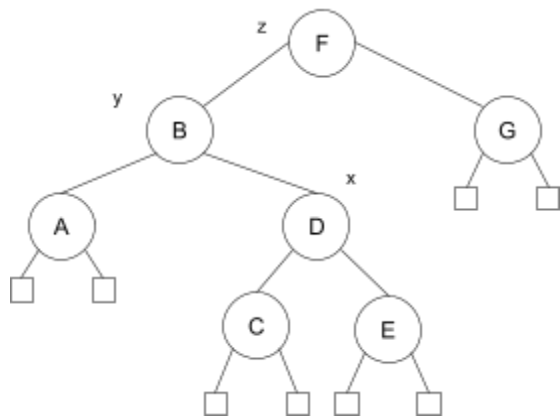
12, 24, 26, 29, 31, 39, 42, 44, 49, 57, 63

Node to be deleted: 42

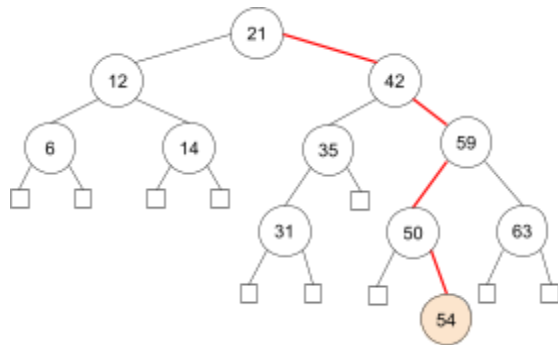
Predecessor: 39



Problem 3



Problem 4



Inserting 54: -

- 1) Compare 21 with 54. $21 < 54$, 54 goes to right subtree
- 2) Right subtree has 42. $42 < 54$, 54 goes to right subtree
- 3) Right subtree has 59. $59 > 54$, 54 goes to left subtree
- 4) Left subtree has 50. $50 < 54$, 54 goes to right subtree
- 5) Right subtree is null, 54 is inserted

