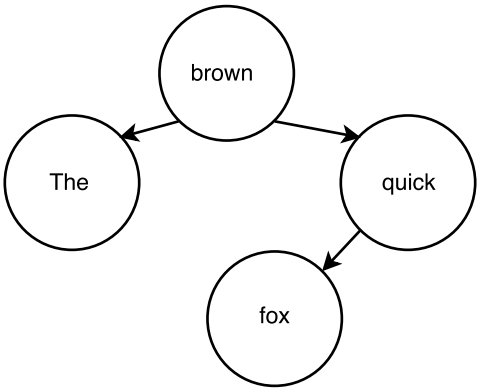
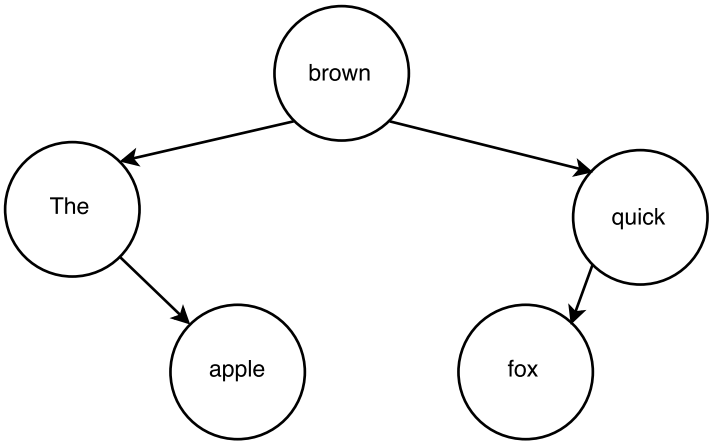
1. Show how the final AVL tree for the "The quick brown fox" changes as you insert "apple, "cat", and "hat" in that order.

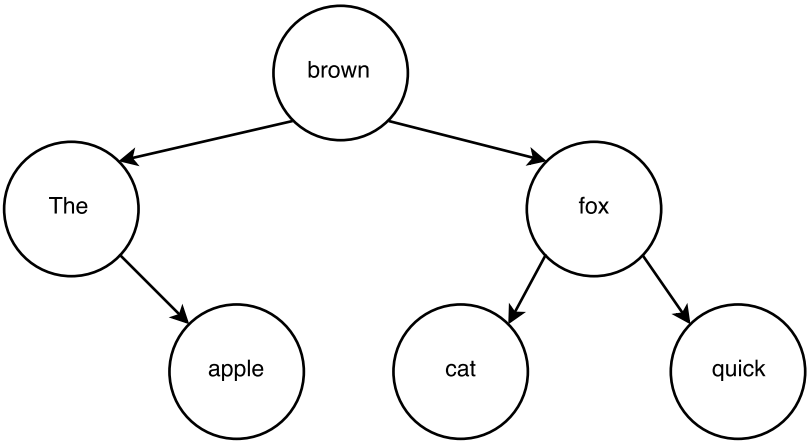
0. Original



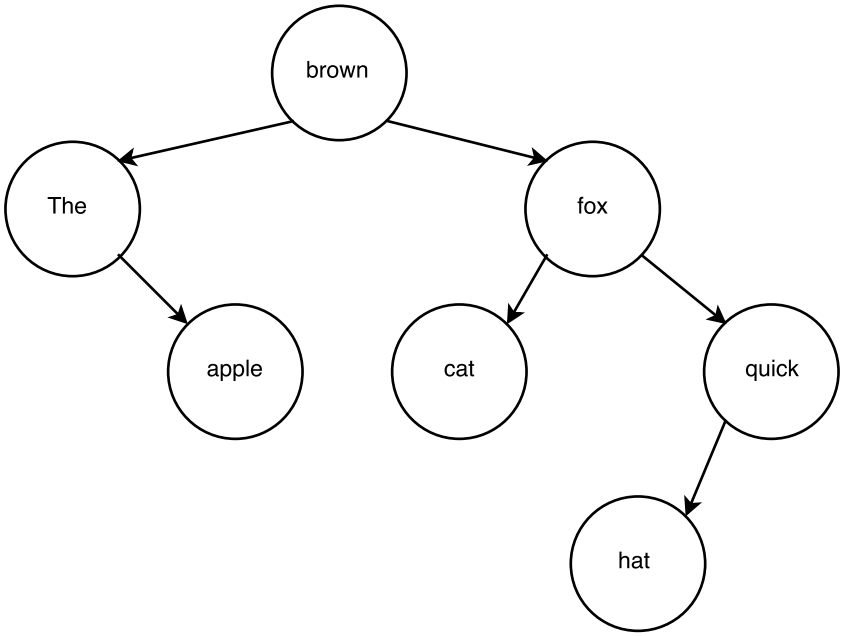
1. Insert apple



2. Insert cat

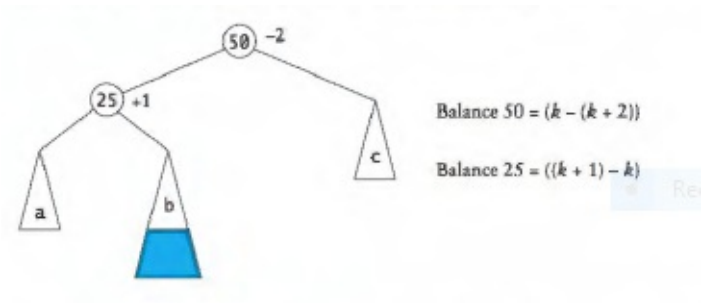


3. Insert hat

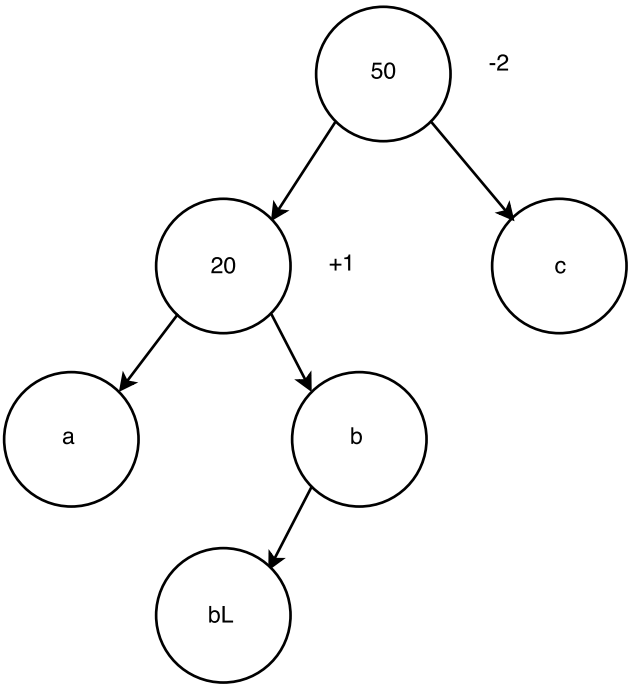


2. Show the effect of just rotating right on the tree in Figure 9.11. Why doesn't this fix the problem?

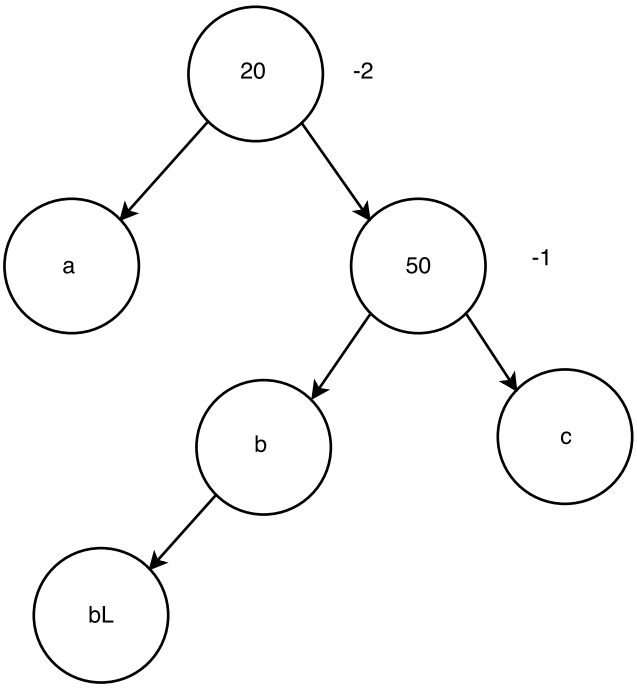
0. Original



1. Expanded



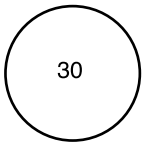
1. Rotated right



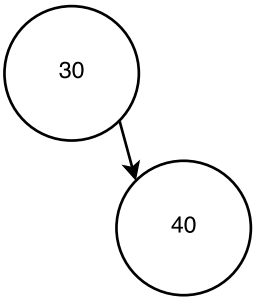
Rotating right failed to balance the tree because the root node remains unbalanced at -2

3. Build an AVL tree that inserts the integers 30,40,15,25,90,80,70,85,15,72 in the given order.

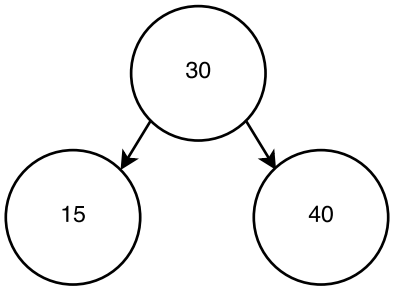
1. Insert 30



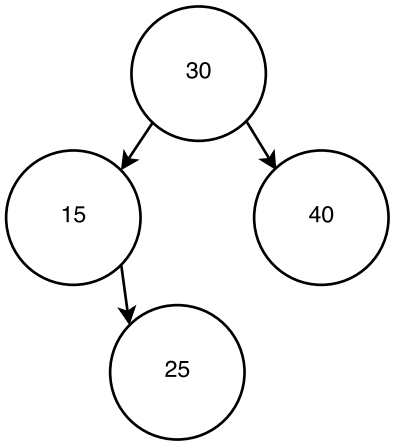
2. Insert 40



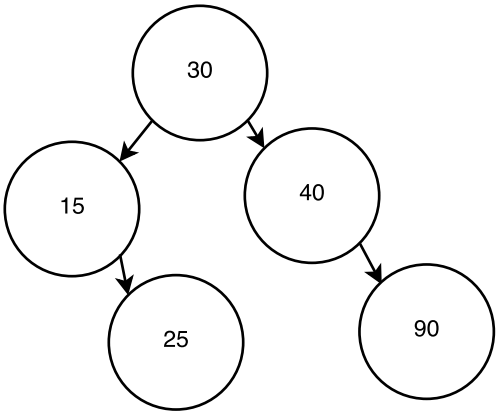
3. Insert 15



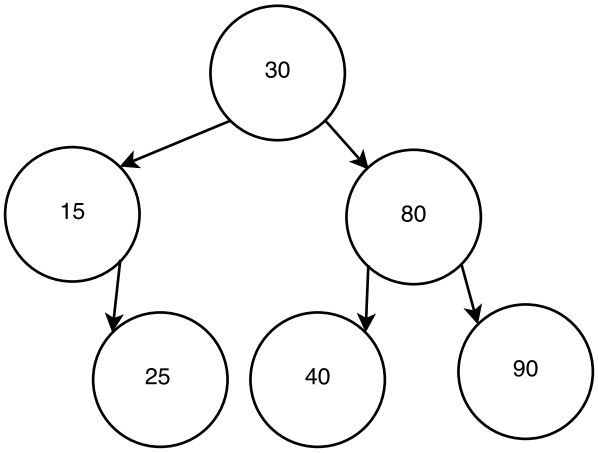
4. Insert 25



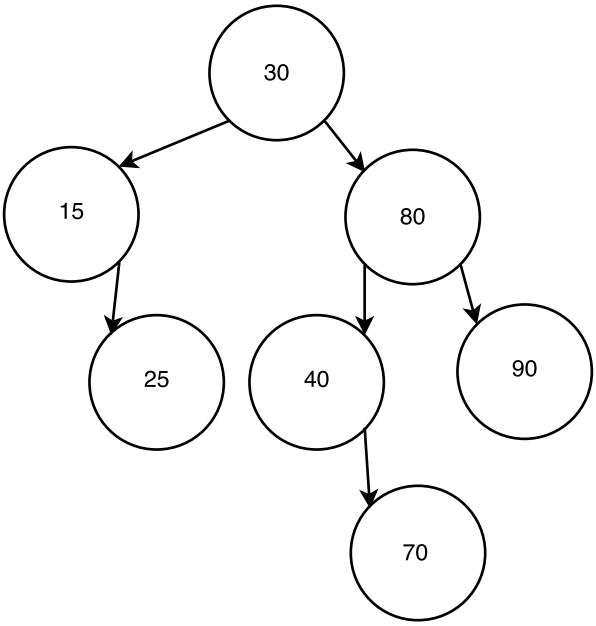
5. Insert 90



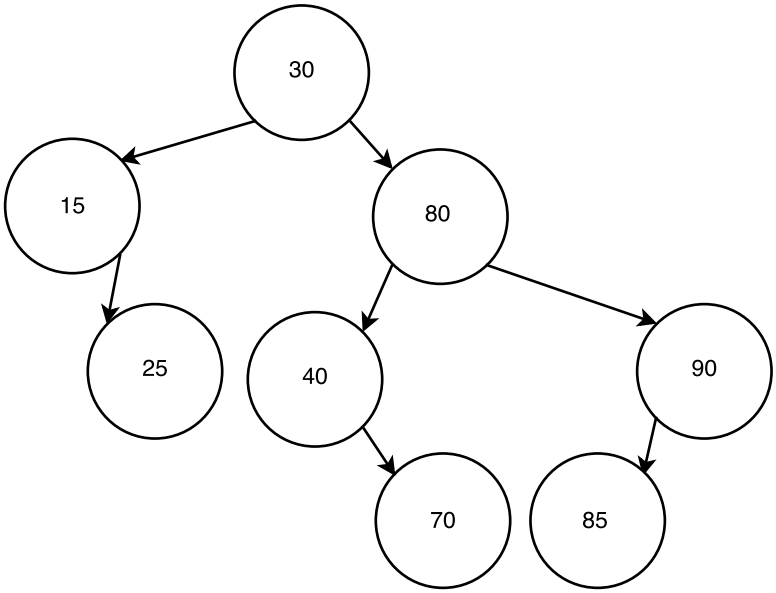
6. Insert 80



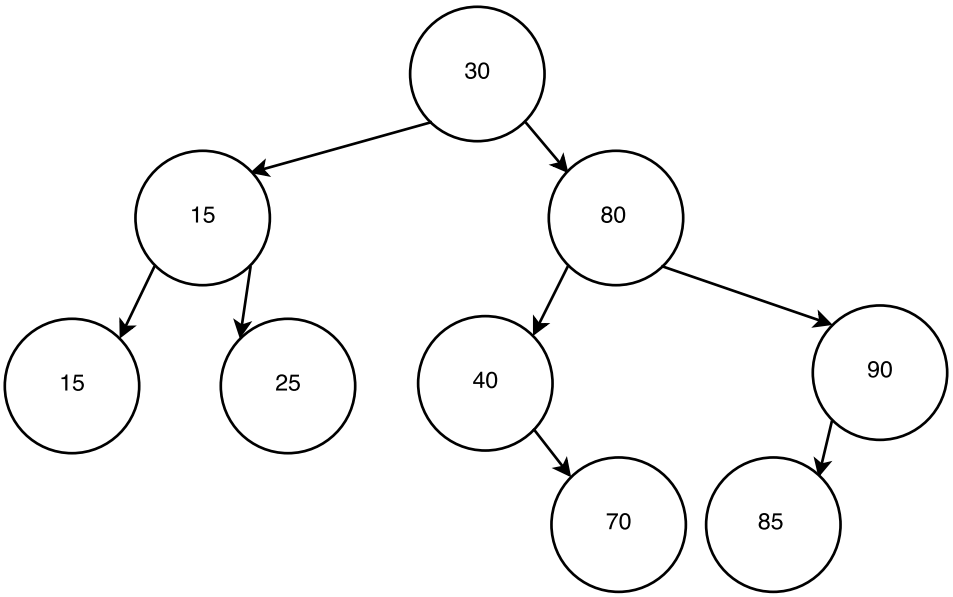
7. Insert 70



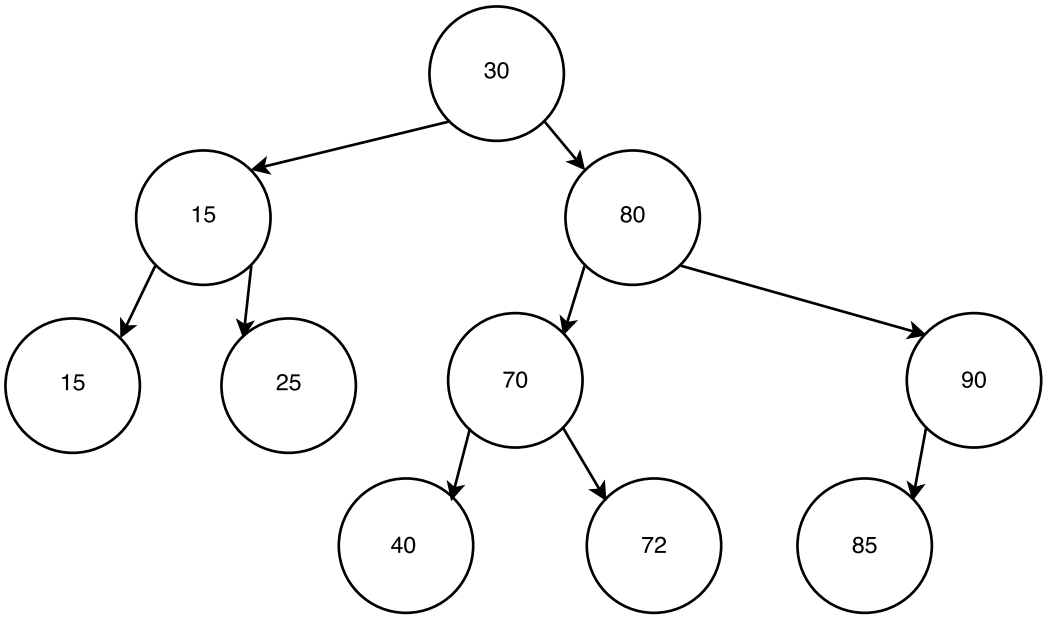
8. Insert 85



9. Insert 15



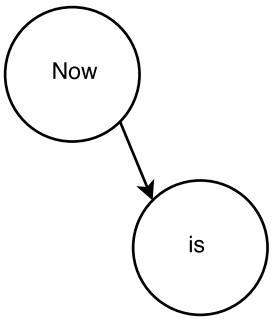
10. Insert 72



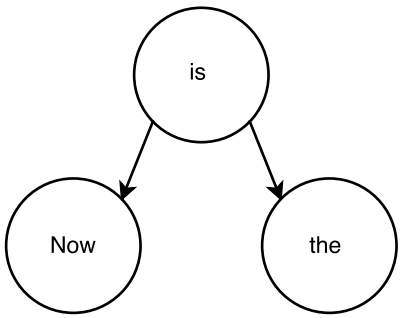
4. Build the AVL tree from the sentence "Now is the time for all good men to come to the aid of the party".

1. Insert Now

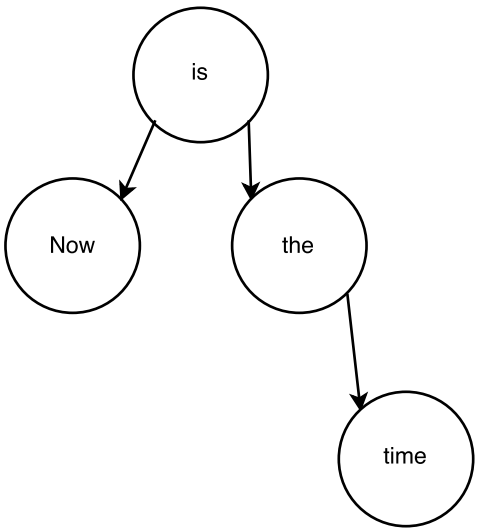
2. Insert is



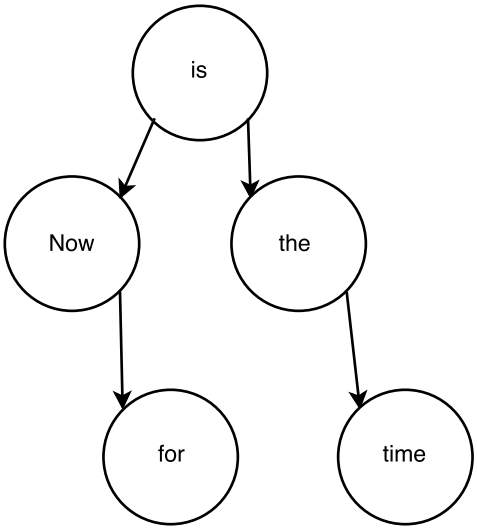
3. Insert the



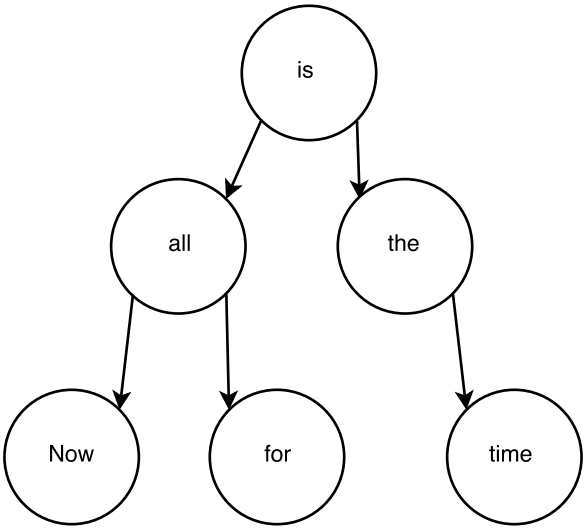
4. Insert time



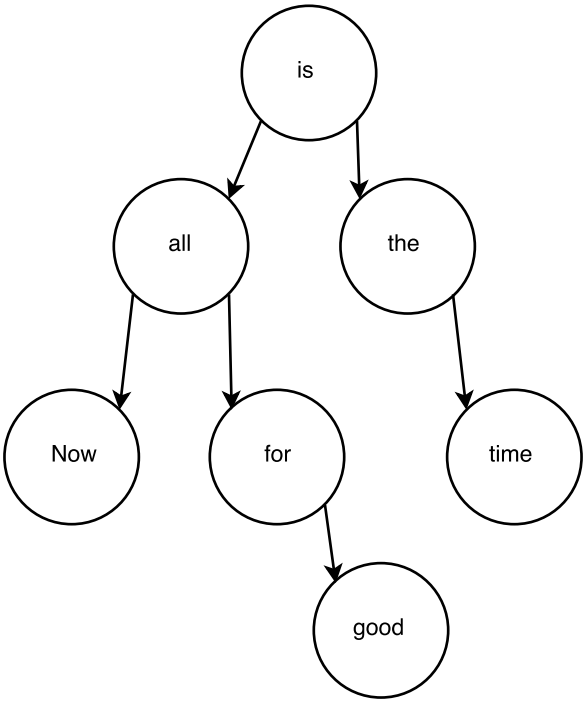
5. Insert for



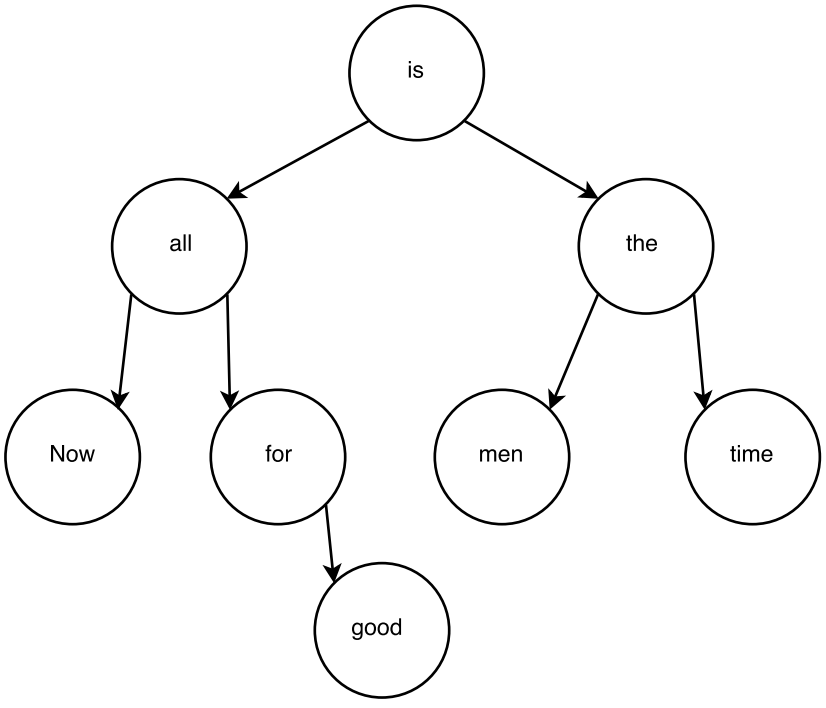
6. Insert all



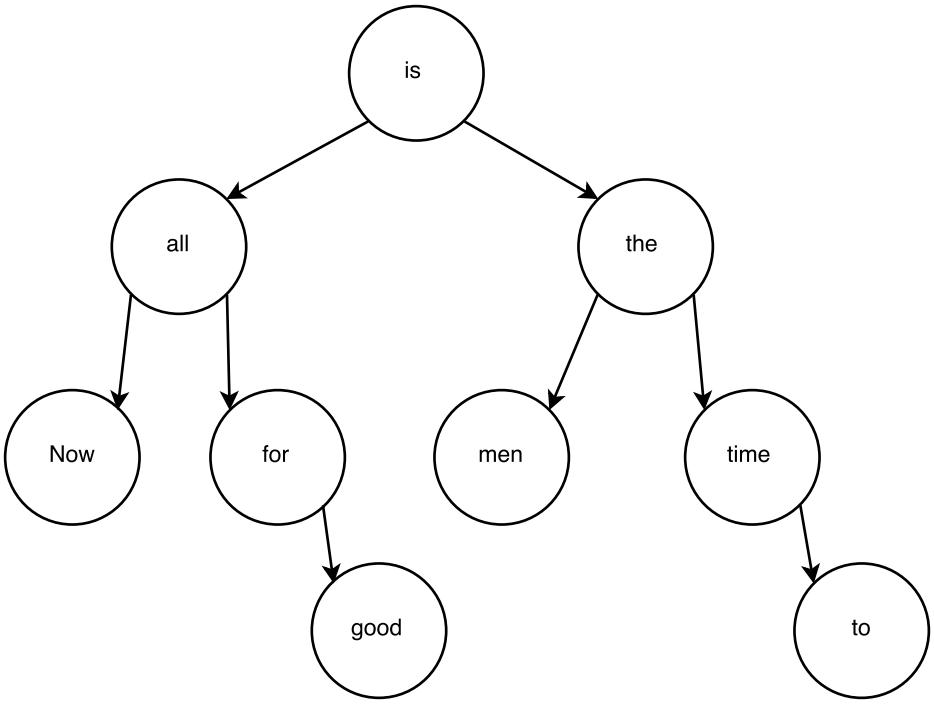
7. Insert good



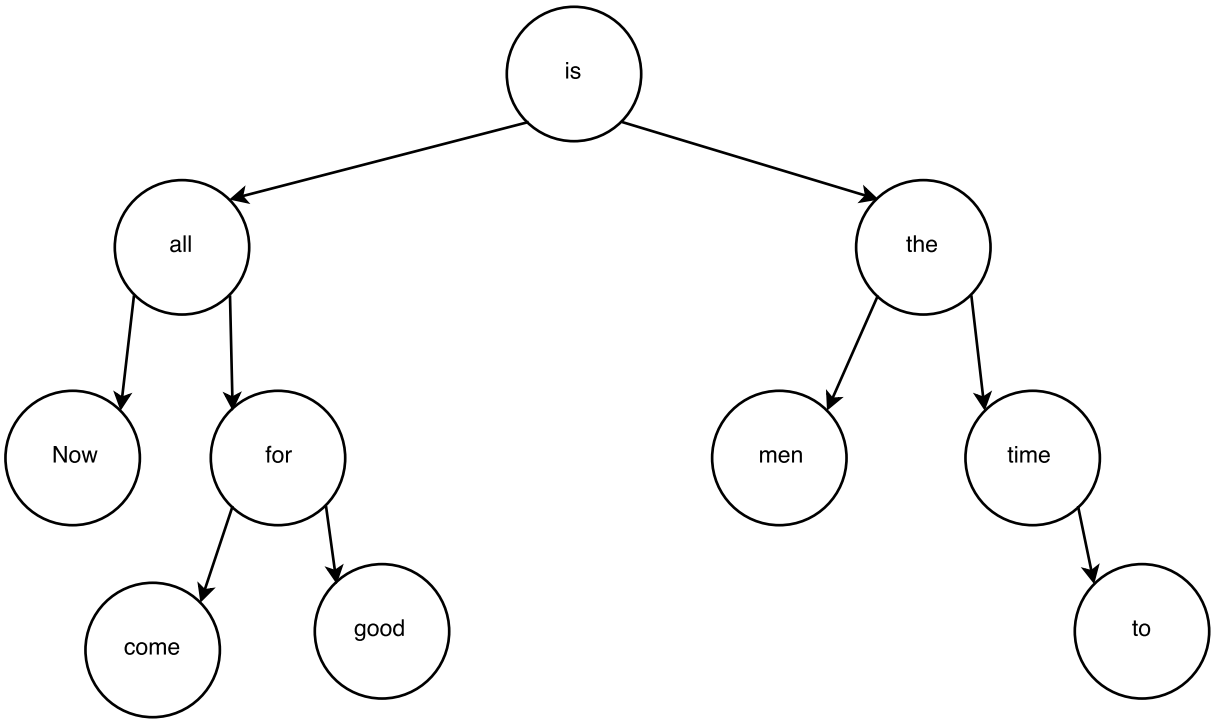
8. Insert men



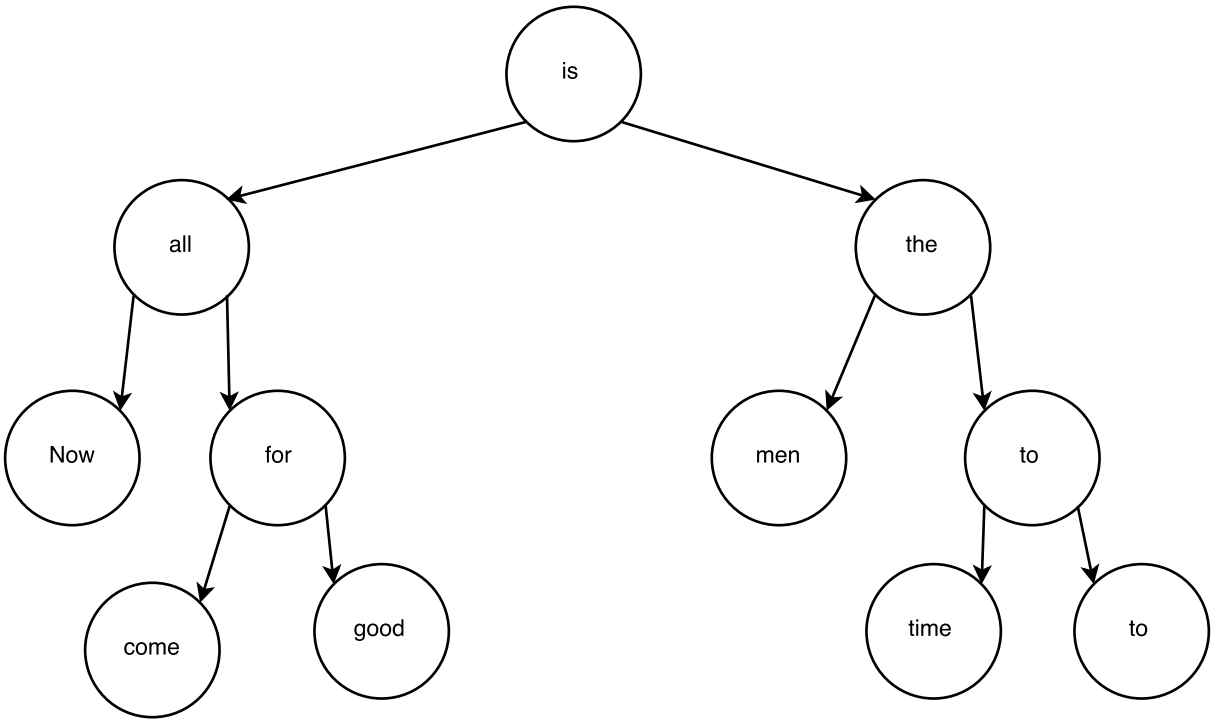
9. Insert to



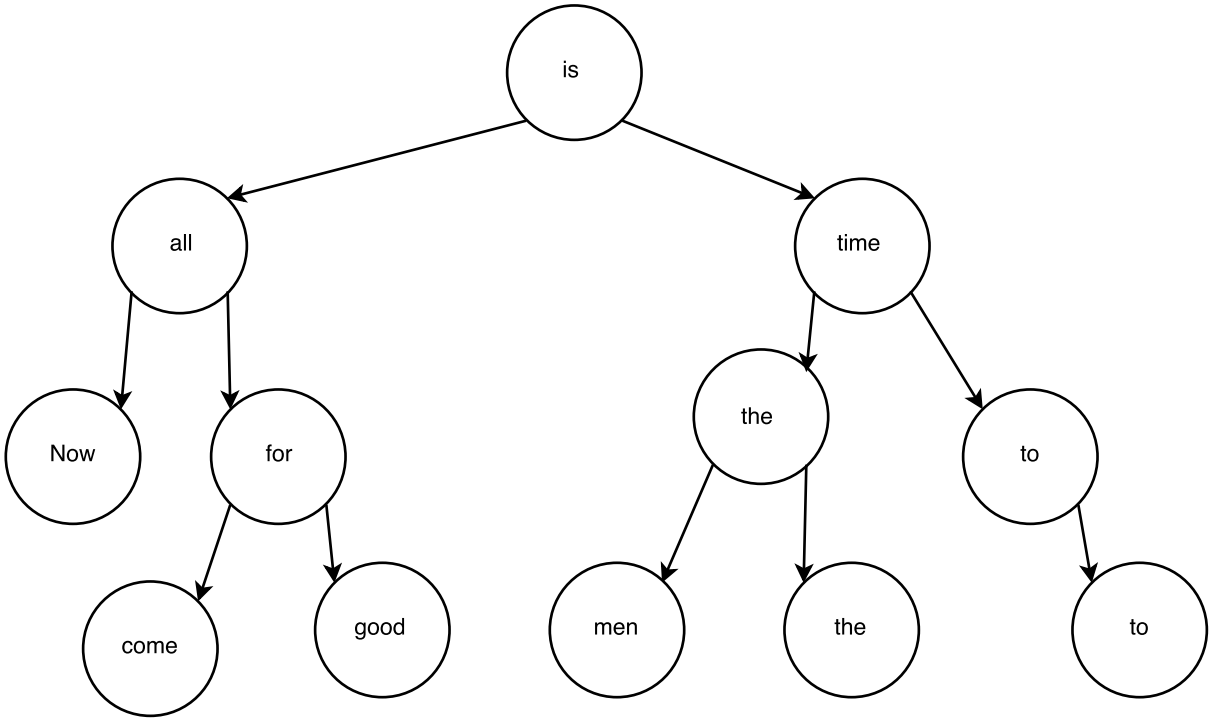
10. Insert come



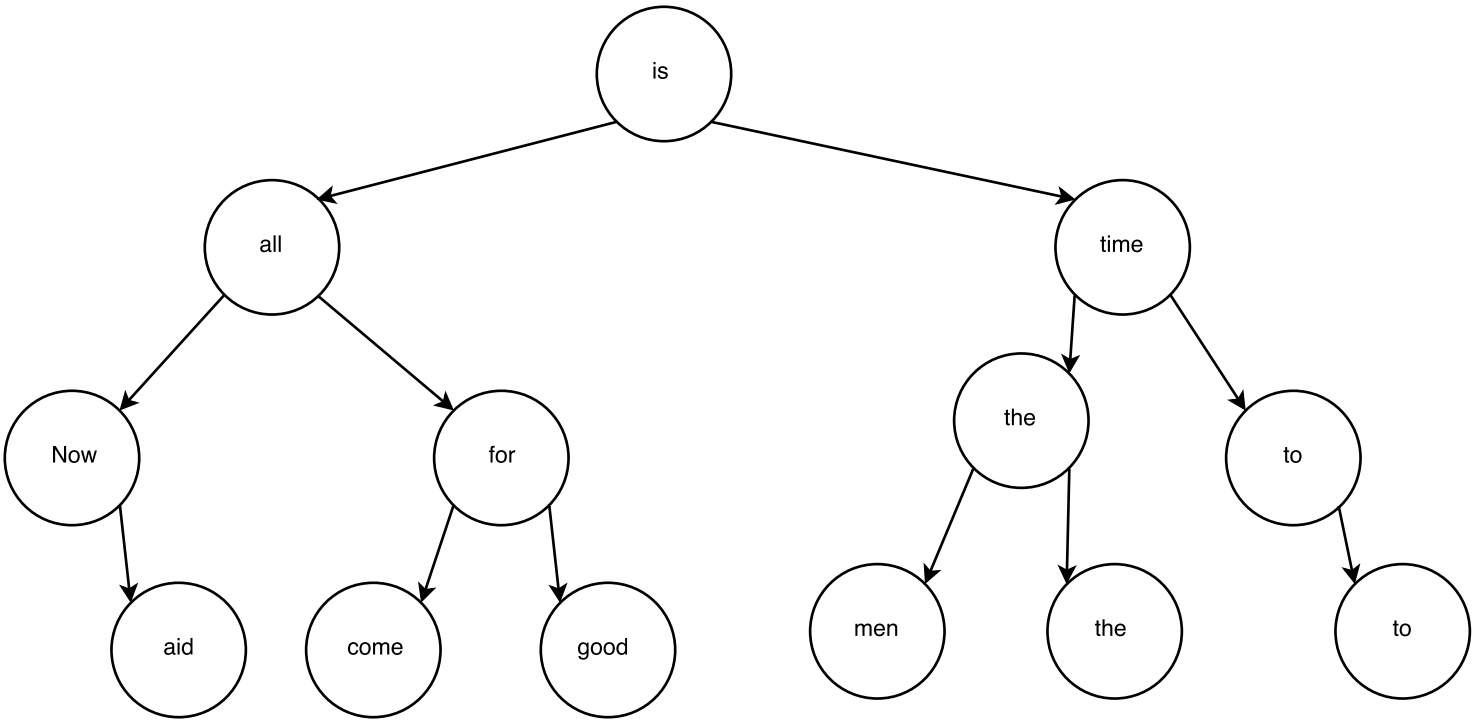
11. Insert to



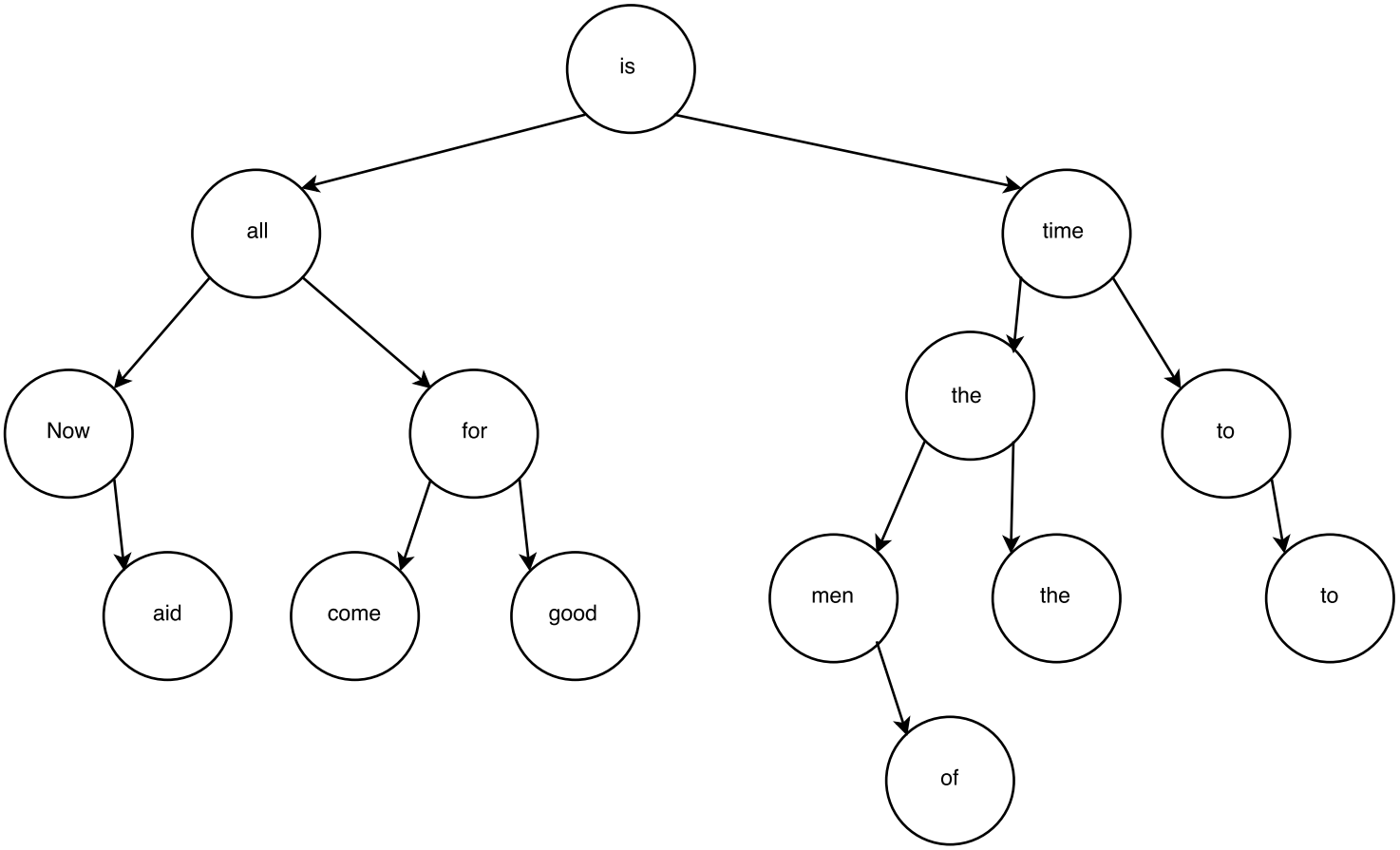
12. Insert the



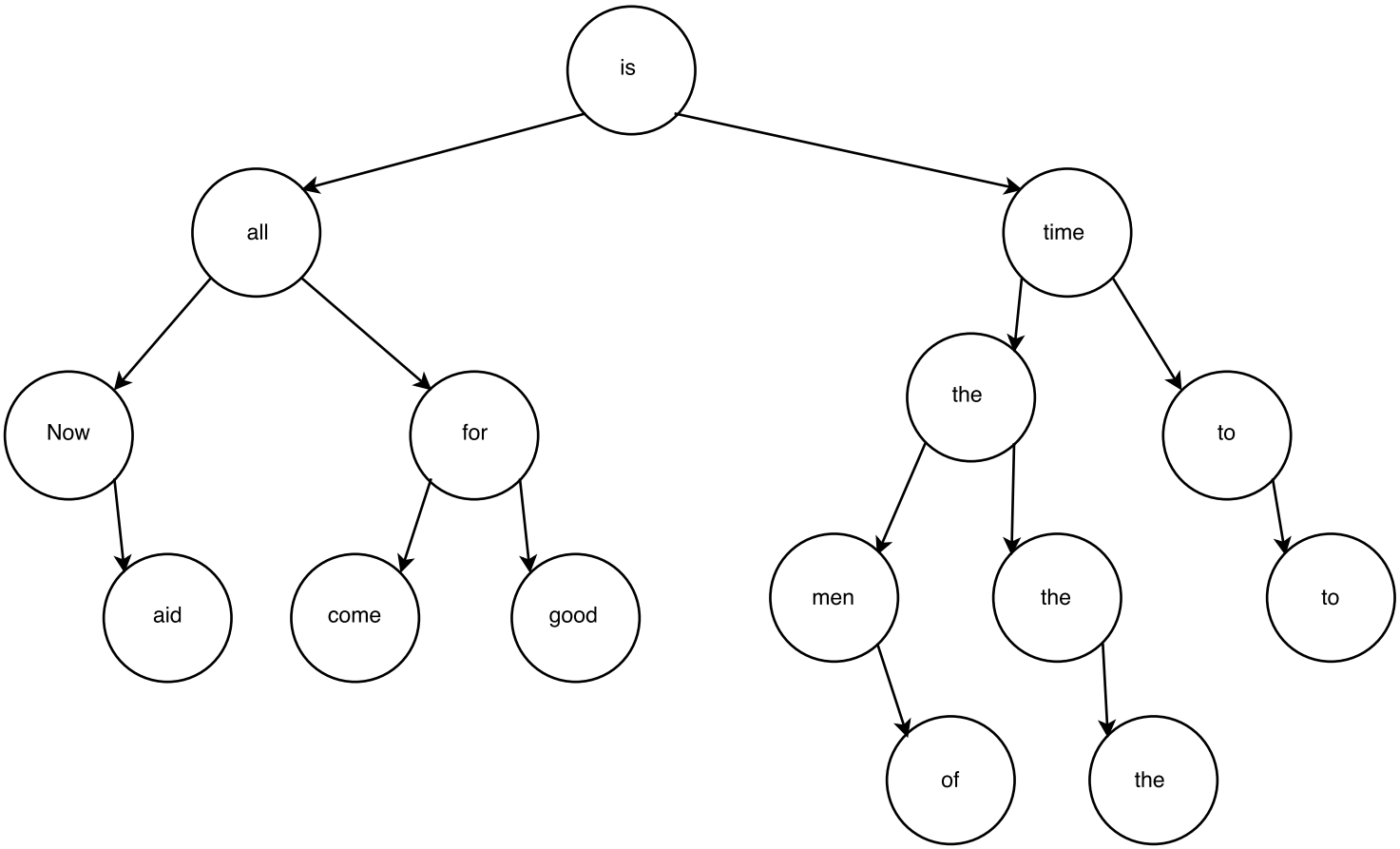
13. Insert aid



14. Insert of



15. Insert the



16. Insert party