

23 Lecture - CS301

Important Subjective

- 1. What is single right rotation in AVL tree?**
A: Single right rotation is a type of operation used to balance an AVL tree in which a node is rotated from its left subtree to its right subtree.
- 2. How does single right rotation work?**
A: Single right rotation works by moving a node from its left subtree to its right subtree, making the right child of the node the new root, and moving the original right child to the left child of the new root.
- 3. When is single right rotation needed?**
A: Single right rotation is needed when the balance factor of a node in the AVL tree is greater than 1 and the left subtree of the node is deeper than its right subtree.
- 4. What is the time complexity of single right rotation?**
A: The time complexity of single right rotation in AVL tree is $O(1)$.
- 5. Can a node have both left and right rotations?**
A: Yes, a node can have both left and right rotations in AVL tree if required to balance the tree.
- 6. Does single right rotation change the order of the nodes in AVL tree?**
A: No, single right rotation does not change the order of the nodes in AVL tree, it only balances the tree.
- 7. How is the height of the AVL tree affected by single right rotation?**
A: The height of the AVL tree is reduced by one level after performing single right rotation.
- 8. What is the difference between single left and single right rotation in AVL tree?**
A: Single left rotation is the mirror image of single right rotation, as it rotates a node from its right subtree to its left subtree to balance the tree.
- 9. Can single right rotation be performed on a leaf node?**
A: No, single right rotation cannot be performed on a leaf node as it requires a node with at least one child.
- 10. What are the advantages of using AVL tree over other types of binary trees?**
A: AVL tree ensures that the height of the tree is always balanced, which results in faster search, insertion, and deletion operations.