The Quest for Harmony: 5-Day Challenge with Project Descriptions

Welcome to the epic 5-day quest. Each day, you'll master crucial techniques in Binary Trees (BT), Binary Search Trees (BST), and Balanced Binary Search Trees (BBST). Below are detailed project descriptions for each set of methods to empower your journey.

Day 3: Complexity and Efficiency

Binary Trees (BT)

- **Diagonal Traversal**: Traverse tree nodes diagonally.
- **Mirror Tree**: Convert tree into its mirror.
- **Maximum Path Sum**: Find maximum sum of paths from root to leaves.
- **Nodes at Distance K from Root**: Find all nodes at a given distance from root.

Binary Search Trees (BST)

- **BST from Preorder**: Construct BST using preorder traversal.
- **Delete Node in BST**: Delete a node and maintain BST properties.
- **BST Iterator**: Implement iterator over BST nodes.
- **Closest Node to Target**: Find node closest to a given target value.

Balanced Binary Search Trees (BBST)

- **AVL Tree Rotation Count**: Count rotations required for AVL balancing.
- **AVL Tree Rebalance**: Perform AVL rebalancing operations.
- **AVL Tree Merge**: Merge two AVL trees into one balanced tree.
- **Count Range Nodes in AVL Tree**: Count nodes within a given numeric range.