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 2: Deepening Understanding

Binary Trees (BT)

- **Left View of Binary Tree**: Print leftmost nodes at each level.
- **Right View of Binary Tree**: Print rightmost nodes at each level.
- **Sum of Left Leaves**: Compute sum of all left leaves.
- **Top View**: Print the top view of the tree.

Binary Search Trees (BST)

- **Validate BST**: Confirm BST properties throughout the tree.
- **BST to Greater Tree**: Convert BST nodes so each node has sum of all greater nodes.
- **Lowest Common Ancestor in BST**: Find lowest common ancestor for two given nodes.
- **Predecessor and Successor**: Find predecessor and successor nodes for a given value.

Balanced Binary Search Trees (BBST)

- **Red-Black Tree Validation**: Check correctness of Red-Black tree properties.
- **Insert into AVL Tree**: Insert nodes while maintaining AVL balance.
- **Height of AVL Tree**: Compute height of AVL-balanced BST.
- **Find Median in AVL Tree**: Calculate the median value in AVL tree.