Convert Sorted Linked List to Binary Search Tree

LeetCode

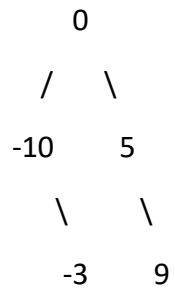
Given the head of a singly linked list where elements are sorted in **ascending order**, convert *it to a*

height-balanced *binary search tree*.

Example:

The Sorted Linked List: -10 → -3 → 0 → 5 → 9

Output:



Approach 1: Function to start the process of converting a sorted linked list to a balanced binary search tree

- **Function Purpose**:
    - The **sortedListToBST** function converts a sorted linked list into a balanced binary search tree.
- **Explanation**:
    - It uses a recursive approach to divide the linked list and build the tree.
    - The **solve** function is called recursively to find the middle of the linked list and create a new node for the middle value.
    - The process is repeated for the left and right halves of the linked list, creating the left and right subtrees.
    - The function returns the root of the binary search tree.
- **Time Complexity**:
    - **O(N), where N is the number of elements in the linked list, as each element is processed once.**
- **Space Complexity**:
    - **Overall space complexity is O(N) due to the memory used by the binary search tree.**