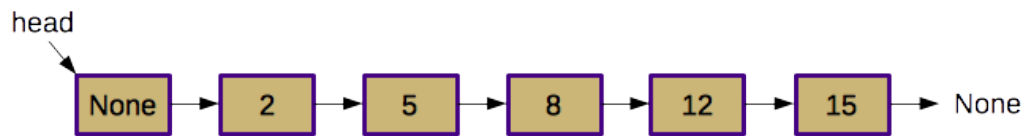


1. Write a code for splay tree insertion (Bottom up) . show the insertion by inserting 20, 10, 30, 40, 45, 56, 70 into an empty splay.
2. Write a code for splay tree deletion (top down) . show the deletion by deleting element 45 from above tree.
3. Below is the linked list representation,



- A. Create a skip list representation of above linked list by writing a code and show the result (ATTACH THE SCREENSHOT OF YOUR RESULT) . Here is the pseudocode for insertion :

```

Check whether the new value is already in the list; abort if found

Flip coins to determine the insertion height.

If necessary, increase sentinel height until it is one greater
than the insertion height.

Initialize cur to be the head of the list.

While you haven't run off the bottom of the list:

    Find the possible insertion point at this level by advancing cur
    until cur.next is None, or the cur.next.value is
    greater than the value to add.

    If insertion should happen at this level:
        Insert a new node after cur.
        Update the below reference of the most recently added node.
        Move cur to the next lower level.
  
```

- You can promote any node of your liking to the next level.
- B. Write a code for searching element in skip list . Use that code for search value 14 and 12. (attach the screenshot of your result search) .
4. Write a code to find the longest common prefix using the trie data structure . Apply that code to find the longest common prefix of
Cancellation, cancel, Canada, canabary , can, cando.

- Lexicographic sorting of a set of keys can be accomplished with a simple **Trie-based algorithm** as follows:
 - Insert all keys into a Trie.
 - Print all keys in the Trie by performing preorder traversal on Trie to get output in lexicographically increasing order.

5. Write a code for lexicographic sorting of keys using trie data structure :

Your code must ask for few words to be entered and result must be showing the lexicographically sorted words.

EXAMPLE : banana, aeroplane, basket, plastic.

Result : aeroplane, banana, basket, plastic.