**1:PS01Q1**

Design & Approach:

1. Read the list of inputlines into a list from inputPS01Q1.txt
2. For each line in the inputlines read, we will execute the minimumSumTreeFromLeafNodes method to find the tree with minimum sum of values from the given inorder traversal list.
3. In the minimumSumTreeFromLeafNodes function, we would find the minimum element in the current inorder list.
4. Multiply the minimum element with it’s next immediate minimum element which is adjacent to the first minimum element.
5. Add the product to some result variable.
6. Remove the minimum element from the inorder list.
7. Repeat step 3,4,5,6 until the list is empty.

Example:

2 3 5

Result = 0

Iteration-1:

Len is 3, 3>1:

* So we loop in the iteration
* Min element is 2
* Its immediate minimum adjacent neighbour is 3
* Their product is 2\*3 = 6
* We remove 2 from the list
* Result = 0+6+2=8

Iteration-2:

Len is 2, 2>1:

* So we loop in the iteration
* Min element is 3
* Its immediate minimum adjacent neighbour is 5
* Their product is 3\*5 = 15
* Result = 8 + 15+3 = 26

Iteration-3:

Len is 1, 1>1: False

So we stop iterating

Result = 26+5 =31

The final answer of minimum sum of the tree would be 31

**Time complexity:**

**O(n\*\*2).**