Algorithm Print the Vertical Order Traversal of a Tree

Require: A non empty tree

Ensure: In case of equal x and y, the node which comes first in the level order traversal would be printed first

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1: function VERTICAL_ORDER_TRAVERSAL(root)
   ▷ Horiz_Map is a map with key as the horizontal distance. (can be negative)
   ▷ The value is the vector of elements which are at the same horizontal level.
   ▷ The elements in the vector are ordered according to their appearance in Level Order Traversal
2:     horiz_dist ← 0
3:     queue.push(root, horiz_dist)
4:     while Queue is not empty, do
5:         (current_node, horiz_dist) ← queue.front
6:         queue.pop
7:         horiz_map[horiz_dist].push_back(current_node.data)
8:         if Left Child Exists then
9:             queue.push(current_node.left, horiz_dist − 1)
10:        if Right Child Exists then
11:            queue.push(current_node.right, horiz_dist + 1)
12:    for Sorted Keys in horiz_map do
13:        for all ordered elements in horiz_map[key] do
14:            Print(element)
```