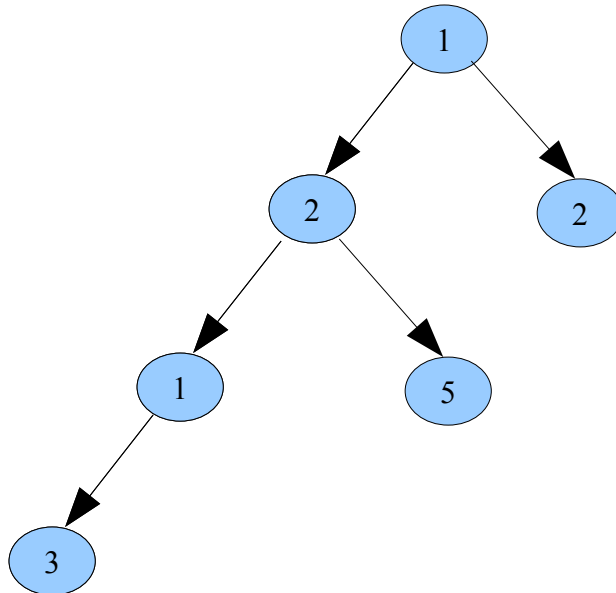Consider binary trees with items of type T attached to nodes (assuming T has a sensible equality operation defined). Let's say that 2 occurrences of item x (of type T) inside the tree overlap, if there is a node with item x inside the tree, and one of the sub-trees starting from this node also contains a node with item x. For example, in the following tree the repeated occurrences of 1 overlap, but the repeated occurrences of 2 do not overlap:

a) Propose a way to represent such binary trees in memory.
b) Define a function, which, for a given tree and an item of type T, decides if this item has overlapping occurrences inside the tree.