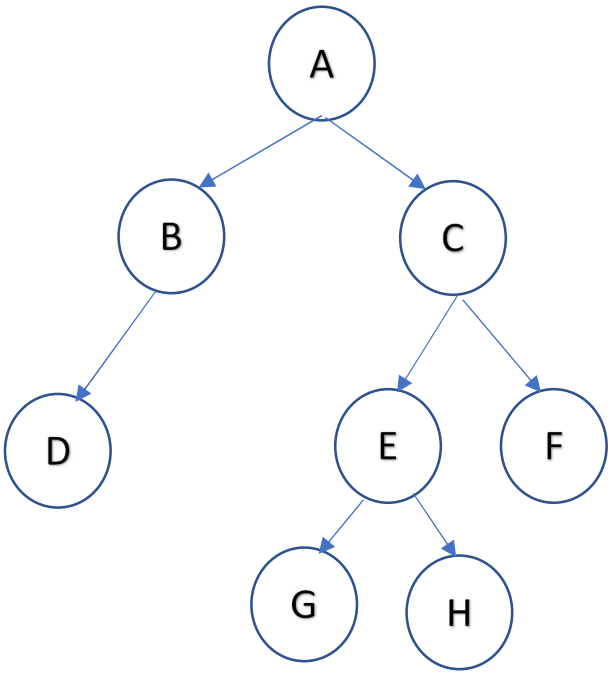
a) Write a program in C to construct a binary tree given its inorder and preorder traversals. For example, if Inorder is D, B, A, G, E, H, C, F and preorder is A, B, D, C, E, G, H, F
Then, the tree should uniquely be:



b) Construct of Binary Search Tree taking a random integer in the range of 1-10K. Search for 1000 keys and compute average numbers of comparisons that were required. Then, change the order of insertion of the same set of integers and see if the average number of comparisons for searching changes. Explain your answer. Check if the complexity is in fact log(n) or n.