Instructions:

* There is only 1 section consisting of 3 questions
* All the instructions of Paper 1 apply here as well

Section 1

Q.1. You are given a binary search tree. You have to print the left-view and right-view of that binary tree. “Left view” means the nodes which will be visible if the tree is viewed from its left side.

For e.g.



Left view of above tree: 12 10 25

Input format:

First you will be given ‘n’ denoting the no of nodes in the tree followed by their values(All distinct).

e.g.

9

12 10 30 25 40 45 41 49 8

Output:

12 10 8 45 41

O(no\_of\_nodes) time

O(no\_of\_nodes) space

Q.2. You have to input a binary search tree in the same manner as done above and print all paths from root till the leaves. Consider same time complexity as above and no restriction on space complexity.

Input

5

12 10 30 25 40

Output:

12 10

12 30 25

12 30 40

Q.3. There are ‘n’ numbers which may be very large (consisting of upto 10000 digits). What is the maximum number that can be created on concatenating all these numbers. Print that maximum number. You can concatenate in any order but can’t change the numbers i.e. position of digits within each number can’t be changed.

Input format:

A value ‘n’ followed by n numbers

Input:

3

76 450 9

976450

Output:

9564767109987

Input:

4

56 9 4767 109987

Output:

9564767109987

O(1) space complexity and time should be below exponential.