COSC 2436 lab 6: AVL Tree

1. Introduction

For this lab, you will construct a self-balanced AVL tree from the given input. AVL tree is a form of binary search tree but it will rebalance itself after each insertion. A binary tree said to be balanced if the difference between the heights of left and right subtree of every node in the tree is either -1, 0, or 1.

2. Input and Output

a. Input file
- The first line in the input will contain an integer n, denote the number of nodes to be inserted into the tree.
- Each line of the following n lines will contain a single integer to be inserted into the tree.
- Input will have no empty lines or spaces.
- There will be no duplicate nodes.

b. Output file
- Output the tree in level order, with each node separated by a space
- Note: no space after the last output node

3. Example Output

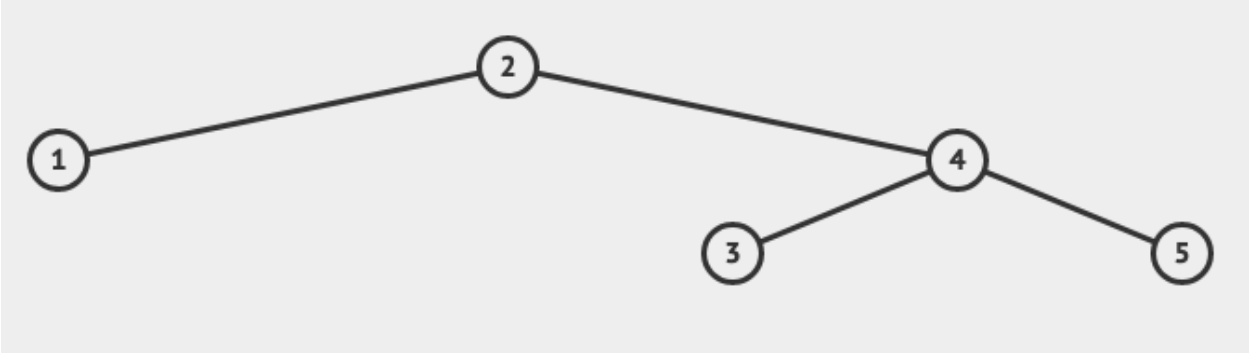
input1.txt

5
1
2
3
4
5

output1.txt

2 1 4 3 5

Visualization:



4. Turn in your lab assignment

Lab 6 needs to be turned in to our Linux server, follow the link here
https://rizk.netlify.app/courses/cosc2430/2_resources/
Make sure to create a folder under your root directory, name it lab6 (name need to be lower case), copy your code and argumentmanager.h to this folder, no testcase or other files needed.
PS: This document may have typos, if you think something illogical, please email TAs for confirmation.