

Data Structures

Homework 4

Mostafa S. Ibrahim

Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher

PhD from Simon Fraser University - Canada

Bachelor / Msc from Cairo University - Egypt

Ex-(Software Engineer / ICPC World Finalist)

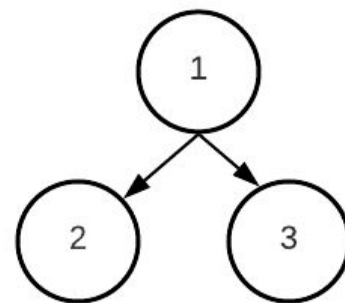


Problem #1: Tree from preorder & inorder

- We discussed in the lecture how to generate this tree
- Your turn implement the following constructor
- `BinaryTree(deque<int> &preorder, deque<int> &inorder)`
- Write your own code to **generate** these dequeues
- Double check generated tree has the given preorder/inorder
- Do different testings

Problem #2: Generate a full binary tree

- Given a preorder of a full binary tree and a flag if the node is leaf or not, we can build a binary tree
- `BinaryTree(queue<pair<int, int>> &preorder_queue)`
 - queue of: pair of (value, is_leaf)
- The deque for this full tree:
 - (1, 0), (2, 1), (3, 1)
 - (3, 1) = node value 3 - is leaf = true
- Write a code to generate this deque



“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”