

④ Given BT, create linked lists of all nodes at each depth. / modify to print level per line.

BT- ②

List<List<Node>> listPerLevel (Node root) {

 Queue<Node> q = LinkedList<Node>();

 List<List<Node>> lists = new ArrayList<>();

 q.add(root);

 while (!q.isEmpty()) {

 int size = q.size();

 List<Node> level = new LinkedList<>();

 while (size > 0) {

 level.add(

 Node n = q.remove();

 if (n.left != null) {

 q.add(n.left);

 if (n.right != null)

 q.add(n.right);

 level.add(n);

 size--;

 }

 lists.add(level);

}

return lists;

}

Algo:

1. Create queue and add root node to it.

2. Get size of queue. size().

 Create new list l.

 Until size == 0, do

 dequeue $\overset{n}{\cancel{node}}$

 add left and right of n to queue.

 add n to list l.

 size--

3. add l to lists.result.

4. Repeat 2 to 3 until queue is empty.