

COMP ENG 2SI4

Lab 3 Notes

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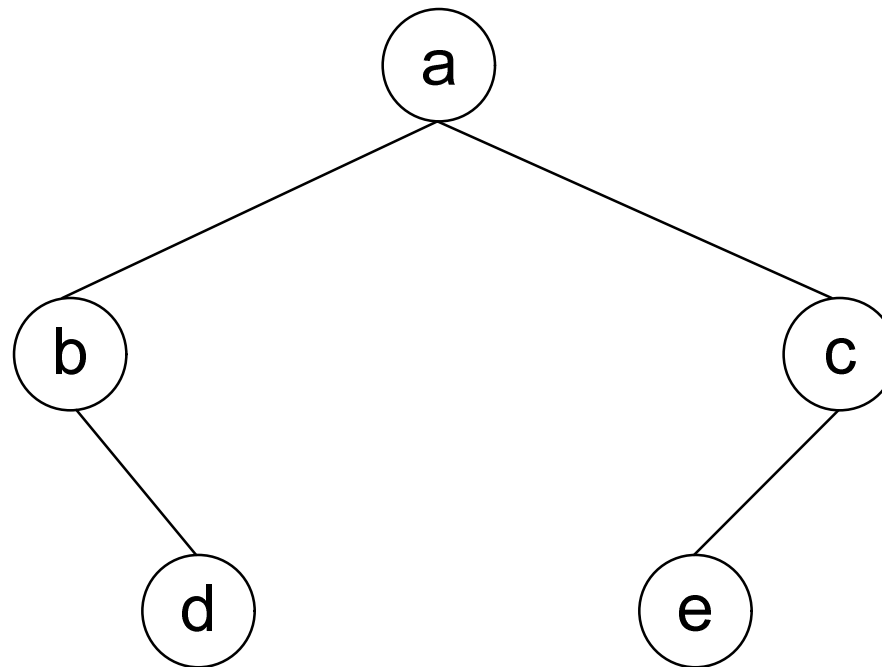
Method printNonRec()

- This method has to print the nodes by performing an inorder traversal
- The method has to be nonrecursive
- The nonrecursive implementation can be done using a stack

Print in Inorder Traversal

1. Start with an empty stack. Next **push(root)**
2. After pushing a node go to its left child (this will be the current node)
3. If current node not null, push it on the stack and go to step 2
4. If current node is null and the stack is not empty
 1. Pop the node on top of the stack
 2. Print the value in the node
 3. Go to the right child (this will be the current node).
Then go to step 3.
5. Stop when the current node is null and the stack is empty.

Example: push(a), push(b), pop(), print b, push(d), pop(), print d, pop(), print a, push(c), push(e), pop(), print e, pop(), print c, STOP



Method printLevelOrder()

- This method has to print the nodes in level order by using a queue
 1. Start with an empty queue.
 2. Next **enqueue(root)**.
 3. While the queue is not empty do:
 1. dequeue()
 2. Print the value in the node
 3. Enqueue the left child (if not empty) then the right child (if not empty)
 4. Stop when the queue is empty.

Example: enqueue(a), dequeue(), print a, enqueue(b), enqueue(c), dequeue(), print b, enqueue(d), dequeue(), print c, enqueue(e), dequeue(), print d, dequeue(), print e, STOP

