

28 Lecture - CS301

Important Subjective

- 1. What is a threaded binary tree?**
A threaded binary tree is a binary tree in which each node that does not have a right child has a threaded pointer to its successor in the inorder traversal.
- 2. What is an inorder traversal?**
Inorder traversal is a way of visiting all the nodes in a binary tree. In this traversal, we first visit the left subtree of the root, then the root node itself, and finally, the right subtree of the root.
- 3. What is a threaded inorder traversal?**
A threaded inorder traversal is a way of traversing a threaded binary tree. In this traversal, we use the threaded pointers to traverse the tree instead of recursion or a stack.
- 4. How do we traverse a threaded binary tree using threaded inorder traversal?**
We start from the leftmost node of the tree and use the threaded pointer to visit the next node in the inorder sequence. We continue doing this until we reach the rightmost node of the tree.
- 5. What is the advantage of using threaded binary trees?**
Using threaded binary trees reduces the amount of memory required to store a binary tree. It also speeds up the traversal of the tree, as we no longer need to use recursion or a stack to visit all the nodes.
- 6. What is a single-threaded binary tree?**
A single-threaded binary tree is a binary tree in which each node that does not have a right child has a threaded pointer to its successor in the inorder traversal, but nodes with right children do not have threaded pointers.
- 7. What is a double-threaded binary tree?**
A double-threaded binary tree is a binary tree in which each node has both a left and right threaded pointer.
- 8. How do we create a threaded binary tree?**
We create a threaded binary tree by adding threaded pointers to a standard binary tree. We can do this either during the tree creation process or after the tree has been created.
- 9. What are the types of threaded binary trees?**
The types of threaded binary trees are single-threaded binary trees and double-threaded binary trees.
- 10. What is the difference between a threaded binary tree and a standard binary tree?**
A threaded binary tree has additional pointers (threaded pointers) that allow us to traverse the tree using the inorder sequence without recursion or a stack. A standard binary tree does not have these additional pointers.