Assignment Question: Construct a class for BinaryTree.Implement various traversals.   Inherit the class ThreadedBinaryTree.

Threaded_Binary_Tree

A threaded binary tree is a binary tree variant that allows fast traversal: given a pointer to a node in a threaded tree, it is possible to cheaply find its in-order successor (and/or predecessor). Binary trees have a lot of wasted space: the leaf nodes each have 2 null pointers We can use these pointers to help us in inorder traversals We have the pointers reference the next node in an inorder traversal; called threads We need to know if a pointer is an actual link or a thread, so we keep a boolean for each pointer

Methods used

The constructor Node() initializes the values of a newly created node.
The insert() function is used to insert a new node by finding the correct position and also checks if the value is already present in the tree.
The inorder() function is used to do the inorder traversal of the tree.
The reverseInorder() function is used to do the inorder traversal of the tree but in the reverse order.
The leftMostChild() function is used to find the left most child.
The rightMostChild() function is used to find the right most child.

Oop concepts used

Inheritance: The class Binarytree inherits the class ThreadedBinaryTree using the keyword 'extends'.

Modularity: Using functions provide modularity to the program.

About output

```
Enter the data for root node:6
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
1
Enter the data for node:3
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
```

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4.Exit
Enter your choice:
1
Enter the data for node:8
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
1
Enter the data for node:1
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
1
Enter the data for node:5
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
1
Enter the data for node:7
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
1
Enter the data for node:11
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
1
Enter the data for node:9
```

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Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
1
Enter the data for node:13
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
2
*******Inorder traversal*******
1 3 5 6 7 8 9 11 13
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
3
*******Reverse inorder traversal*******
13 11 9 8 7 6 5 3 1
Binary Tree Menu
1.Insert
2.Inorder Traversal
3.Reverse Inorder Traversal
4.Exit
Enter your choice:
4
```