Task 1:

Create  a custom node , add elements to it and traverse it..

import java.util.ArrayList;

import java.util.List;

class Node {

// Each node holds a value and a list of children nodes

double value;

List<Node> children;

// Constructor to create a node with a given value

public Node(double value) {

this.value = value;

this.children = new ArrayList<>();

}

// Add a child to the current node

public void addChild(Node child) {

this.children.add(child);

}

}

public class Main {

// DFS Traversal method

public static void dfsTraverse(Node node) {

// Visit the current node

System.out.print(node.value + " ");

// Recursively visit all children of the current node

for (Node child : node.children) {

dfsTraverse(child);

}

}

public static void main(String[] args) {

// Create nodes

Node root = new Node(9.37);

Node child1 = new Node(9.40);

Node child2 = new Node(9.45);

// Add children to the root node

root.addChild(child1);

root.addChild(child2);

// Optionally, add subchildren to the child nodes

child1.addChild(new Node(9.41));

child2.addChild(new Node(9.46));

// Perform DFS Traversal

System.out.println("DFS Traversal:");

dfsTraverse(root);

}

}