

DSA ASSIGNMENT - 10

21BCE7371

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INPUT

```
import java.util.*;

class DFSTraversal {
    private LinkedList<Integer> adj[];
    private boolean visited[];

    DFSTraversal(int V)
    {
        adj = new LinkedList[V];
        visited = new boolean[V];

        for (int i = 0; i < V; i++)
            adj[i] = new LinkedList<Integer>();
    }

    void insertEdge(int src, int dest) {
        adj[src].add(dest);
    }

    void DFS(int vertex) {
        visited[vertex] = true;
        System.out.print(vertex + " ");

        Iterator<Integer> it = adj[vertex].listIterator();
        while (it.hasNext()) {
            int n = it.next();
            if (!visited[n])
                DFS(n);
        }
    }

    public static void main(String args[]) {
        DFSTraversal graph = new DFSTraversal(8);

        graph.insertEdge(0, 1);
        graph.insertEdge(0, 2);
        graph.insertEdge(0, 3);
    }
}
```

```
graph.insertEdge(1, 3);
graph.insertEdge(2, 4);
graph.insertEdge(3, 5);
graph.insertEdge(3, 6);
graph.insertEdge(4, 7);
graph.insertEdge(4, 5);
graph.insertEdge(5, 2);

System.out.println("Depth First Traversal for the graph is:");
graph.DFS(0);
}
}
```

OUTPUT

```
PS C:\Users\krish\Documents\java> & 'C:\Program Files\Java\jdk-18.0.
sh\AppData\Roaming\Code\User\workspaceStorage\2c70a5e9ead433afa7c9efe
Depth First Traversal for the graph is:
0 1 3 5 2 4 7 6
PS C:\Users\krish\Documents\java>
```