

Data Structures and Algorithms

CSE2001

Lab - 6 - Assignment - 1

Yashwanth Reddy

19BCE7362

Date- 16thJuly2021

Problem : Depth First Search

```
import java.util.*;
class Graph {
    private LinkedList<Integer> adjLists[];
    private boolean visited[];

    Graph(int vertices) {
        adjLists = new LinkedList[vertices];
        visited = new boolean[vertices];

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

    void addEdge(int src, int dest) {
        adjLists[src].add(dest);
    }

    void DFS(int vertex) {
        visited[vertex] = true;
```

```

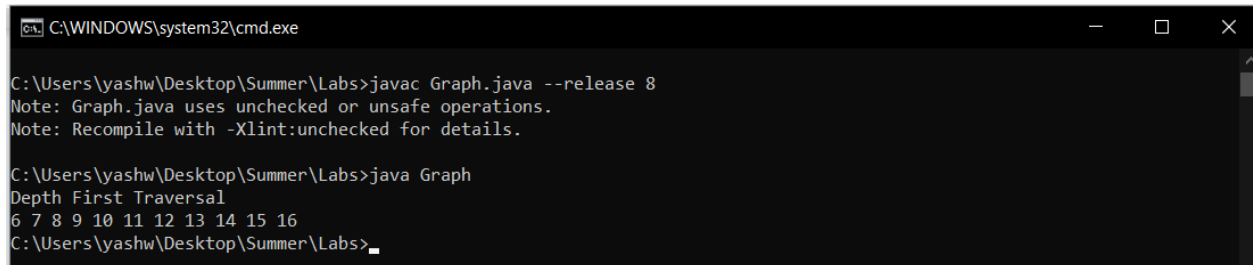
        System.out.print(vertex + " ");
        Iterator<Integer> ite = adjLists[vertex].listIterator();
        while (ite.hasNext()) {
            int adj = ite.next();
            if (!visited[adj])
                DFS(adj);
        }
    }
}

public static void main(String args[]) {
    Graph g = new Graph(17);

    g.addEdge(0, 1);
    g.addEdge(1, 2);
    g.addEdge(2, 3);
    g.addEdge(3, 4);
    g.addEdge(4, 5);
    g.addEdge(5, 6);
    g.addEdge(6, 7);
    g.addEdge(7, 8);
    g.addEdge(8, 9);
    g.addEdge(9, 10);
    g.addEdge(10, 11);
    g.addEdge(11, 12);
    g.addEdge(12, 13);
    g.addEdge(13, 14);
    g.addEdge(14, 15);
    g.addEdge(15, 16);
    System.out.println("Depth First Traversal");
    g.DFS(6);
}
}

```

Output



```
C:\WINDOWS\system32\cmd.exe

C:\Users\yashw\Desktop\Summer\Labs>javac Graph.java --release 8
Note: Graph.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.

C:\Users\yashw\Desktop\Summer\Labs>java Graph
Depth First Traversal
6 7 8 9 10 11 12 13 14 15 16
C:\Users\yashw\Desktop\Summer\Labs>
```