Tugas 2

Algoritma dan Struktur Data

Teknik Informatika Kelas C

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1. Kode

twitty.java

```
import java.util.Scanner;

public class twitty {
    public static void main(String[] args) {
        Graph twittyGraph = new Graph();
        Scanner in = new Scanner(System.in);

        int x = in.nextInt();
        in.nextLine();
        int y = in.nextInt();
        in.nextLine();

        for (int i = 0; i < x; i++) {
            String[] insert = new String[4];
            insert = in.nextLine().split(" ");
            twittyGraph.addVertex(insert[0], insert[1], insert[2],
insert[3]);
        }

        for (int i = 0; i < y; i++) {
            String[] insert = new String[2];
            insert = in.nextLine().split(" ");
            twittyGraph.connect(insert[0], insert[1]);
        }

        while (in.hasNextLine()) {
            String input[] = in.nextLine().split(" ");

            if (input[0].equals("connect")) {
                twittyGraph.connect(input[1], input[2]);
                System.out.println("connect " + input[1] + " " +
input[2] + " success");
            }
            if (input[0].equals("insert")) {
                twittyGraph.addVertex(input[1], input[2], input[3],
input[4]);
                System.out.println(input[1] + " inserted");
            }
            if (input[0].equals("mostfollowed")) {
                System.out.println(twittyGraph.getNodeMostFoll().nama);
            }
            if (input[0].equals("minrt")) {
                System.out.println();
            }
```

```
            if (input[0].equals("numgroup")) {
                System.out.println();
            }
            if (input[0].equals("grouptopic")) {
                System.out.println();
            }
        }
    }
}

class Graph {
    vertexList vertexList = new vertexList();

    void addVertex(String nama, String minat1, String minat2, String
minat3) {
        vertexList.add(nama, minat1, minat2, minat3);
    }

    void connect(String asal, String tujuan) {
        NodeVertex tmp1 = vertexList.findByName(asal);
        NodeVertex tmp2 = vertexList.findByName(tujuan);
        tmp1.adj.addLast(tmp2);
        tmp2.follower++;
    }

    int getMaxFollower() {
        NodeVertex tmp = vertexList.head;
        int max = 0;
        while (tmp != null) {
            if (tmp.follower > max) {
                max = tmp.follower;
            }
            tmp = tmp.next;
        }
        return max;
    }

    NodeVertex getNodeMostFoll() {
        int x =getMaxFollower();
        NodeVertex tmp = vertexList.head;
        while (tmp!=null) {
            if (tmp.follower == x) {
                return tmp;
            }
            tmp = tmp.next;
        }
```

```
        return null;
    }

    // int shortestPath(String asal, String tujuan, int counter) {
    //     NodeVertex tmp1 = vertexList.head;
    //     NodeVertex tmp2 = vertexList.head;

    //     int adjCounter;
    //     int pathCounter;

    //     while (tmp1 != vertexList.findByName(asal) && tmp1 != null) {
    //         tmp1 = tmp1.next;
    //     }
    //     while (tmp2 != vertexList.findByName(tujuan) && tmp2 !=null)
{
    //         tmp2 = tmp2.next;
    //     }

    //     Node<NodeVertex> adjtmp1 = tmp1.adj.head;

    //     while(adjtmp1 != null) {
    //         if (adjtmp1.data != tmp2) {
    //             adjtmp1 = adjtmp1.next;
    //             if () {

    //             }
    //         } else {
    //             counter++;
    //             return counter;
    //         }
    //     }
    //     if (tmp1.next==null) {
    //         return -1;
    //     }
    // }
}

class vertexList {
    NodeVertex head;
    int size;

    void add(String nama, String minat1, String minat2, String minat3) {
        NodeVertex p = new NodeVertex(nama, minat1, minat2, minat3);
        if (head == null) {
            head = p;
            return;
```

```
        }
        NodeVertex temp = head;
        while (temp.next != null) {
            temp = temp.next;
        }
        temp.next = p;
        size++;
    }

    NodeVertex findByName(String nama) {
        NodeVertex tmp = head;
        while (tmp.nama != nama && tmp.next != null) {
            tmp = tmp.next;
        }
        return tmp;
    }
}

class NodeVertex {
    String nama;
    String minat[] = new String[3];
    NodeVertex next;
    singly<NodeVertex> adj = new singly<>();
    int follower=0;

    NodeVertex(String nama, String minat1, String minat2, String minat3)
{
        this.nama = nama;
        minat[0]=minat1;
        minat[1]=minat2;
        minat[2]=minat3;
    }
}



class Node<T> {
    T data;
    Node<T> next;
    Node() {}
    Node(T newData) {
        data = newData;
    }
    Node (T newData, Node<T> newNext) {
        next = newNext;
        data = newData;
```

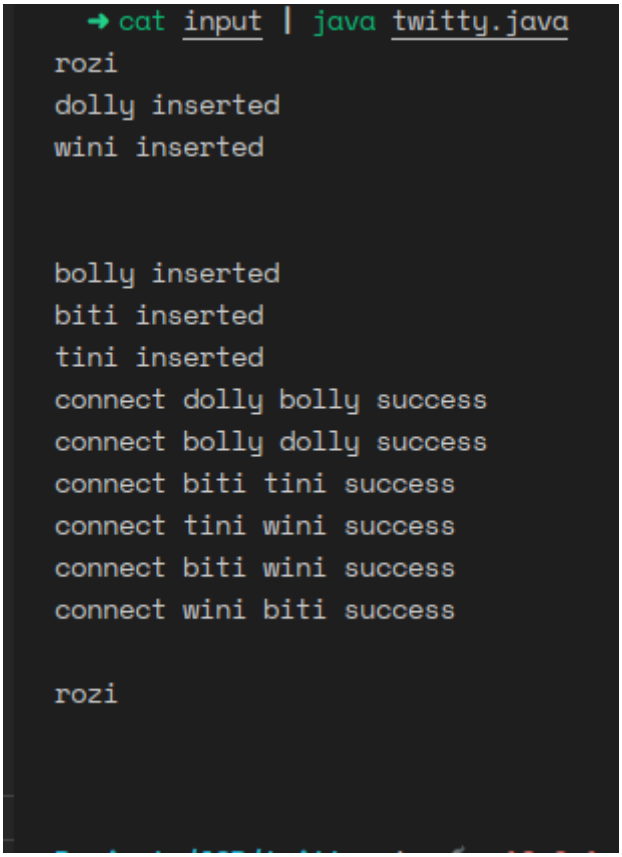
```
    }

}

class singly<T> {
    Node<T> head,tail;
    int size=0;
    singly() {
        head = null;
        tail =null;
    }
    boolean isEmpty() {
        return size == 0 || head == null;
    }
    void addFirst(T x) {
        Node<T> p = new Node<>();
        p.data=x;
        p.next = head;
        head = p;
        size++;
    }
    void addLast(T x) {
        Node<T> p = new Node<>(x);
        if (head == null) {
            head = p;
            return;
        }
        Node<T> temp = head;
        while (temp.next != null) {
            temp = temp.next;
        }
        temp.next = p;
        size++;
    }
    int length() {
        return size;
    }
    void insert(T data, int position) {
        Node<T> node = new Node<>(data);
        if (position > size) {
            addLast(data);
            return;
        }
        else if (position == 1) {
            addFirst(data);
        } else {
```

```
            Node<T> previous = head;
            int count = 1;
            while (count < position-1) {
                previous = previous.next;
                count++;
            }
            Node<T> current = previous.next;
            node.next = current;
            previous.next = node;
        }
        size++;
    }
}
```

Refleksi Diri:

Traversal pada suatu graph cukup sulit, perlu saya teliti lebih banyak lagi.

2. Output



Refleksi Diri: