**PEMROGRAMAN BERORIENTASI OBYEK**

**(RELASI ANTAR KELAS)**



**Disusun oleh:**

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**D3 Rekayasa Perangkat Lunak Aplikasi**

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**2024**

Soal 1:

Kelas Mahasiswa:

public class Mahasiswa {

    private String nim;

    private String nama;

    // constructor

    public Mahasiswa(String nim, String nama) {

        this.nim = nim;

        this.nama = nama;

    }

    // getter

    public String getNim() {

        return nim;

    }

    public String getNama() {

        return nama;

    }

}

Kelas Jurusan:

import java.util.ArrayList;

public class Jurusan {

    private String kode;

    private String nama;

    private ArrayList<Mahasiswa> listMahasiswa;

    // constructor

    public Jurusan(String kode, String nama) {

        this.kode = kode;

        this.nama = nama;

        listMahasiswa = new ArrayList<>();

    }

    public void addMahasiswa(Mahasiswa m) {

        listMahasiswa.add(m);

    }

    // setter and getter

    public String getKode() {

        return kode;

    }

    public String getNama() {

        return nama;

    }

    public ArrayList<Mahasiswa> getMahasiswa() {

        return listMahasiswa;

    }

}

Kelas Main:

import java.util.ArrayList;

public class MainMahasiswa {

    public static void main(String[] args) {

        Jurusan j1 = new Jurusan("D3IF", "Diploma 3 Rekayasa Perangkat Lunak Aplikasi");

        Mahasiswa m1 = new Mahasiswa("6701", "Rendi");

        Mahasiswa m2 = new Mahasiswa("6702", "Chaca");

        Mahasiswa m3 = new Mahasiswa("6703", "Agus");

        j1.addMahasiswa(m1);

        j1.addMahasiswa(m2);

        j1.addMahasiswa(m3);

        Jurusan j2 = new Jurusan("D3SI", "Diploma 3 Sistem Informasi");

        Mahasiswa m4 = new Mahasiswa("6301", "Ridwan");

        Mahasiswa m5 = new Mahasiswa("6302", "Siska");

        Mahasiswa m6 = new Mahasiswa("6303", "Zayn");

        Mahasiswa m7 = new Mahasiswa("6304", "Rahmat");

        j2.addMahasiswa(m4);

        j2.addMahasiswa(m5);

        j2.addMahasiswa(m6);

        j2.addMahasiswa(m7);

        ArrayList<Mahasiswa> list1 = j1.getMahasiswa();

        ArrayList<Mahasiswa> list2 = j2.getMahasiswa();

        displayMahasiswa(j1, list1);

        displayMahasiswa(j2, list2);

    }

    private static void displayMahasiswa(Jurusan j, ArrayList<Mahasiswa> list) {

        System.out.println("\nKode: " + j.getKode() + "\nNama: " + j.getNama() + "\nDaftar mahasiswa: " + "\n" );

        for (Mahasiswa m : list) {

            System.out.println("- " + m.getNim() + " - " + m.getNama());

        }

    }

}

A computer screen shot of a black screen

Description automatically generated

Soal 2:

Kelas Nurse:

public class Nurse {

    private String name;

    private int id;

    public Nurse(String name, int id) {

        this.name = name;

        this.id = id;

    }

    public String getName() {

        return name;

    }

    public void setName(String name) {

        this.name = name;

    }

    public int getId() {

        return id;

    }

    public void setId(int id) {

        this.id = id;

    }

}

Kelas Hospital:

public class Hospital {

    private String name;

    private int id;

    private Nurse[] nurses;

    public Hospital(String name, int id, Nurse[] nurses) {

        this.name = name;

        this.id = id;

        this.nurses = nurses;

    }

    public String getName() {

        return name;

    }

    public void setName(String name) {

        this.name = name;

    }

    public int getId() {

        return id;

    }

    public void setId(int id) {

        this.id = id;

    }

    public Nurse[] getNurses() {

        return nurses;

    }

    public void setNurses(Nurse nurse) {

        int size = nurses.length;

        this.nurses[size] =  nurse;

    }

}

Kelas Main:

public class MainHospital {

    public static void main(String[] args) {

        Nurse n1 = new Nurse("Budi", 2);

        Hospital h1 = new Hospital("Health Hospital", 1001, new Nurse[]{new Nurse("Bakrie", 0), n1});

        Nurse[] list1 = h1.getNurses();

        Nurse n2 = new Nurse("Andi", 20);

        Hospital h2 = new Hospital("Brave Hospital", 1002, new Nurse[]{new Nurse("Yakup", 20), n2});

        Nurse[] list2 = h2.getNurses();

        displayNurses(h1, list1);

        displayNurses(h2, list2);

    }

    private static void displayNurses(Hospital h, Nurse[] list) {

        System.out.println("\nNama RS: " + h.getName() + "\nKode RS: " + h.getId() + "\n");

        for (Nurse n : list) {

            if (n != null) {

                System.out.println("Nama perawat: " + n.getName());

                System.out.println("Kode perawat: " + n.getId());

                System.out.println();

            }

        }

    }

}

A screenshot of a computer program

Description automatically generated