Jobsheet 1 Praktikum Algoritma dan Struktur Data

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1. Praktikum Pemilihan:
   - Kode Program:

```
package Jobsheet1;

import java.util.Scanner;

public class praktikumPemilihan05 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        double tugas, kuis, uts, uas;
        double nilaiAkhir;
        String nilaiHuruf;
        String keterangan;

        System.out.println("Program Menghitung Nilai Akhir");
        System.out.println("======================");
        System.out.print("Masukkan nilai tugas: ");
        tugas = sc.nextDouble();
        System.out.print("Masukkan nilai kuis: ");
        kuis = sc.nextDouble();
        System.out.print("Masukkan nilai UTS: ");
        uts = sc.nextDouble();
        System.out.print("Masukkan nilai UAS: ");
        uas = sc.nextDouble();
        System.out.println("======================");

        if (tugas < 0 || tugas > 100 || kuis < 0 || kuis > 100 ||
                uts < 0 || uts > 100 || uas < 0 || uas > 100) {

            System.out.println("Nilai tidak valid");
            System.out.println("======================");
            System.out.println("======================");
```

```
        } else {
            nilaiAkhir = (0.2 * tugas) + (0.2 * kuis) + (0.3 * uts) + (0.4 *
uas);

            if (nilaiAkhir >= 80) {
                nilaiHuruf = "A";
            } else if (nilaiAkhir >= 75) {
                nilaiHuruf = "B+";
            } else if (nilaiAkhir >= 70) {
                nilaiHuruf = "B";
            } else if (nilaiAkhir >= 65) {
                nilaiHuruf = "C+";
            } else if (nilaiAkhir >= 60) {
                nilaiHuruf = "C";
            } else if (nilaiAkhir >= 50) {
                nilaiHuruf = "D";
            } else {
                nilaiHuruf = "E";
            }

            if (nilaiHuruf.equals("D") || nilaiHuruf.equals("E")) {
                keterangan = "ANDA TIDAK LULUS";
            } else {
                keterangan = "SELAMAT ANDA LULUS";
            }

            System.out.println("Nilai Akhir : " + nilaiAkhir);
            System.out.println("Nilai Huruf : " + nilaiHuruf);
            System.out.println("========================");
            System.out.println("========================");
            System.out.println(keterangan);
        }

        sc.close();
    }
}
```

- Hasil Running:

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  & 'C
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStora
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.praktikumPemilihan05'
Program Menghitung Nilai Akhir
======================
Masukkan nilai tugas: 90
Masukkan nilai kuis: 87
Masukkan nilai UTS: 77
Masukkan nilai UAS: 81
======================
Nilai Akhir : 90.9
Nilai Huruf : A
======================
======================
SELAMAT ANDA LULUS
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  & 'C
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStor
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.praktikumPemilihan05'
Program Menghitung Nilai Akhir
======================
Masukkan nilai tugas: 120
Masukkan nilai kuis: 88
Masukkan nilai UTS: 900
Masukkan nilai UAS: 21
======================
Nilai tidak valid
======================
======================
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  & 'C:\
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStorag
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.praktikumPemilihan05'
Program Menghitung Nilai Akhir
======================
Masukkan nilai tugas: 12
Masukkan nilai kuis: 34
Masukkan nilai UTS: 55
Masukkan nilai UAS: 23
======================
Nilai Akhir : 34.900000000000006
Nilai Huruf : E
======================
======================
ANDA TIDAK LULUS
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```

2. Praktikum Perulangan:
   - Kode Program:

```
package Jobsheet1;

import java.util.Scanner;

public class praktikumPerulangan05 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        String nim;
        int n;

        System.out.print("Masukkan NIM: ");
        nim = sc.nextLine();

        System.out.print("Masukkan 2 digit terakhir NIM: ");
        n = sc.nextInt();

        if (n < 10) {
            n = n + 10;
        }

        for (int i = 1; i <= n; i++) {
            if (i == 10 || i == 15) {
            } else if (i % 3 == 0) {
                System.out.print("# ");
            } else if (i % 2 == 0) {
                System.out.print(i + " ");
            } else {
                System.out.print("* ");
            }
        }
        sc.close();
    }
}
```

   - Hasil Running:

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData> & 'C:\Program Files\Java\jdk-24\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStorage\faaac69d095d9906f99eb8d471411f50\redhat.java\jdt_ws\PraktikAlgoritmaDanStrukturData_4bef7bdf\bin' 'Jobsheet1.praktikumPerulangan05'
Masukkan NIM: 254107020086
Masukkan 2 digit terakhir NIM: 86
* 2 # 4 * # * 8 # * # * 14 16 * # * 20 # 22 * # * 26 # 28 * # * 32 # 34 * # * 38 # 40 * # * 44 # 46 * # * 50 # 52 * # * 56 # 58 * # * 62 # 64 * # * 68 # 70 * # * 74 # 76 * # * 80 # 82 * # * 86
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```

3. Praktikum Array:
   - Kode Program:

```
package Jobsheet1;

import java.util.Scanner;

public class praktikumArray05 {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Masukkan Jumlah Mata Kuliah: ");
        int jumlahMK = input.nextInt();
        input.nextLine();

        String[] mk = new String[jumlahMK];
        int[] sks = new int[jumlahMK];
        double[] nilaiAngka = new double[jumlahMK];
        String[] nilaiHuruf = new String[jumlahMK];
        double[] bobot = new double[jumlahMK];

        double totalNilai = 0;
        int totalSKS = 0;

        System.out.println();
        System.out.println("Program Menghitung IP Semester");
        System.out.println("==============================");

        for (int i = 0; i < jumlahMK; i++) {
            System.out.print("Masukkan Nama Mata Kuliah: ");
            mk[i] = input.nextLine();

            System.out.print("Masukkan SKS Mata Kuliah: ");
            sks[i] = input.nextInt();

            System.out.print("Masukkan Nilai Angka Untuk Mata Kuliah " +
mk[i] + ": ");
            nilaiAngka[i] = input.nextDouble();
            input.nextLine();

            if (nilaiAngka[i] >= 80) {
                nilaiHuruf[i] = "A";
                bobot[i] = 4.0;
            } else if (nilaiAngka[i] >= 75) {
```

```
                nilaiHuruf[i] = "B+";
                bobot[i] = 3.5;
            } else if (nilaiAngka[i] >= 70) {
                nilaiHuruf[i] = "B";
                bobot[i] = 3.0;
            } else if (nilaiAngka[i] >= 65) {
                nilaiHuruf[i] = "C+";
                bobot[i] = 2.5;
            } else if (nilaiAngka[i] >= 60) {
                nilaiHuruf[i] = "C";
                bobot[i] = 2.0;
            } else {
                nilaiHuruf[i] = "D";
                bobot[i] = 1.0;
            }

            totalNilai = totalNilai + (bobot[i] * sks[i]);
            totalSKS = totalSKS + sks[i];
            System.out.println();
        }

        System.out.println("================================");
        System.out.println("Hasil Konversi Nilai");
        System.out.println("================================");

        System.out.printf("%-40s %-12s %-12s %-12s\n",
                "MK", "Nilai Angka", "Nilai Huruf", "Bobot Nilai");

        for (int i = 0; i < jumlahMK; i++) {
            System.out.printf("%-40s %-12.2f %-12s %-12.2f\n",
                    mk[i], nilaiAngka[i], nilaiHuruf[i], bobot[i]);
        }

        double ip = totalNilai / totalSKS;

        System.out.println("================================");
        System.out.printf("IP : %.2f\n", ip);
    }
}
```

- Hasil Running:

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  & 'C:\Program Files\Java\jdk-24\bin\
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStorage\faaac69d095d9906f99eb8d47141
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.praktikumArray05'
Masukkan Jumlah Mata Kuliah: 5

Program Menghitung IP Semester
==============================
Masukkan Nama Mata Kuliah: Pancasila
Masukkan SKS Mata Kuliah: 3
Masukkan Nilai Angka Untuk Mata Kuliah Pancasila: 88

Masukkan Nama Mata Kuliah: K3
Masukkan SKS Mata Kuliah: 2
Masukkan Nilai Angka Untuk Mata Kuliah K3: 90

Masukkan Nama Mata Kuliah: Daspro
Masukkan SKS Mata Kuliah: 4
Masukkan Nilai Angka Untuk Mata Kuliah Daspro: 85

Masukkan Nama Mata Kuliah: Bahasa Inggris
Masukkan SKS Mata Kuliah: 2
Masukkan Nilai Angka Untuk Mata Kuliah Bahasa Inggris: 94

Masukkan Nama Mata Kuliah: Struktur Data
Masukkan SKS Mata Kuliah: 4
Masukkan Nilai Angka Untuk Mata Kuliah Struktur Data: 87

==============================
Hasil Konversi Nilai
==============================
MK                                  Nilai Angka  Nilai Huruf  Bobot Nilai
Pancasila                           88,00        A            4,00
K3                                  90,00        A            4,00
Daspro                              85,00        A            4,00
Bahasa Inggris                      94,00        A            4,00
Struktur Data                       87,00        A            4,00
==============================
IP : 4,00
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```

4. Praktikum Fungsi:
   - Kode Program:

```
package Jobsheet1;

public class praktikumFungsi05 {

    static int[][] stok = {
            { 10, 5, 15, 7 },
            { 6, 11, 9, 12 },
            { 2, 10, 10, 5 },
            { 5, 7, 12, 9 }
    };

    static int[] harga = { 75000, 50000, 60000, 10000 };

    static int hitungPendapatan(int cabang) {
        int total = 0;

        total = total + (stok[cabang][0] * harga[0]);
        total = total + (stok[cabang][1] * harga[1]);
        total = total + (stok[cabang][2] * harga[2]);
        total = total + (stok[cabang][3] * harga[3]);

        return total;
    }

    public static void main(String[] args) {
        for (int i = 0; i < 4; i++) {
            int pendapatan = hitungPendapatan(i);

            System.out.println("RoyalGarden " + (i + 1));
            System.out.println("Pendapatan: Rp" + pendapatan);

            if (pendapatan > 1500000) {
                System.out.println("Status: Sangat Baik");
            } else {
                System.out.println("Status: Perlu Evaluasi");
            }

            System.out.println();
        }
    }
}
```

- Hasil Running:

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  & 'C
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStor
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.praktikumFungsi05'
RoyalGarden 1
Pendapatan: Rp1970000
Status: Sangat Baik

RoyalGarden 2
Pendapatan: Rp1660000
Status: Sangat Baik

RoyalGarden 3
Pendapatan: Rp1300000
Status: Perlu Evaluasi

RoyalGarden 4
Pendapatan: Rp1535000
Status: Sangat Baik

PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```

5. Tugas 1:
   - Kode Program:

```
package Jobsheet1;

import java.util.Scanner;

public class tugas105 {
    public static void main(String[] args) {
        char[] KODE = { 'A', 'B', 'D', 'E', 'F', 'G', 'H', 'L', 'N', 'T' };
        String[][] KOTA = {
                { "Banten" },
                { "Jakarta" },
                { "Bandung" },
                { "Cirebon" },
                { "Bogor" },
                { "Pekalongan" },
                { "Semarang" },
                { "Surabaya" },
                { "Malang" },
                { "Tegal" }
        };

        Scanner sc = new Scanner(System.in);
        System.out.print("Masukkan kode plat: ");
        char input = sc.next().charAt(0);

        boolean ketemu = false;
        for (int i = 0; i < KODE.length; i++) {
            if (KODE[i] == input) {
                System.out.println("Kota: " + KOTA[i][0]);
                ketemu = true;
                break;
            }
        }

        if (!ketemu) {
            System.out.println("Kode tidak ditemukan");
        }
    }
}
```

- Hasil Running:

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  & 'C
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStor
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.tugas105'
Masukkan kode plat: N
Kota: Malang
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>

PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  &
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceSt
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.tugas105'
Masukkan kode plat: n
Kode tidak ditemukan
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>

PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  &
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceSt
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.tugas105'
Masukkan kode plat: X
Kode tidak ditemukan
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```

6. Tugas 2:
   - Kode Program:

```
package Jobsheet1;

import java.util.Scanner;

public class tugas205 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Jumlah jadwal: ");
        int n = sc.nextInt();
        sc.nextLine();

        String[][] jadwal = new String[n][4];

        for (int i = 0; i < n; i++) {
            System.out.println("Jadwal ke-" + (i + 1));
            System.out.print("Mata Kuliah: ");
            jadwal[i][0] = sc.nextLine();
            System.out.print("Ruang: ");
            jadwal[i][1] = sc.nextLine();
            System.out.print("Hari: ");
            jadwal[i][2] = sc.nextLine();
            System.out.print("Jam: ");
            jadwal[i][3] = sc.nextLine();
        }

        System.out.println("=== DATA JADWAL ===");
        for (int i = 0; i < n; i++) {
            System.out.println(
                    jadwal[i][0] + " | " +
                            jadwal[i][1] + " | " +
                            jadwal[i][2] + " | " +
                            jadwal[i][3]);
        }
    }
}
```

- Hasil Running:

```
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>  & 'C:\Program
ionMessages' '-cp' 'C:\Users\Dapaa\AppData\Roaming\Code\User\workspaceStorage\faaac6
aDanStrukturData_4bef7bdf\bin' 'Jobsheet1.tugas205'
Jumlah jadwal: 4
Jadwal ke-1
Mata Kuliah: Daspro
Ruang: RT05
Hari: Senin
Jam: 11.30
Jadwal ke-2
Mata Kuliah: Praktikum Daspro
Ruang: LPR04
Hari: Selasa
Jam: 07.00
Jadwal ke-3
Mata Kuliah: Pancasila
Ruang: RT08
Hari: Kamis
Jam: 10.30
Jadwal ke-4
Mata Kuliah: K3
Ruang: RT08
Hari: Selasa
Jam: 13.50
=== DATA JADWAL ===
Daspro | RT05 | Senin | 11.30
Praktikum Daspro | LPR04 | Selasa | 07.00
Pancasila | RT08 | Kamis | 10.30
K3 | RT08 | Selasa | 13.50
PS D:\Polinema\Semester2\Tugas\PASD\PraktikAlgoritmaDanStrukturData>
```