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2.1. PEMILIHAN

```
import java.util.Scanner;

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

        System.out.println("Program Menghitung Nilai Akhir");
        System.out.println("==========================");

        System.out.print("Masukkan Nilai Tugas: ");
        int tugas = sc.nextInt();
        System.out.print("Masukkan Nilai Kuis: ");
        int kuis = sc.nextInt();
        System.out.print("Masukkan Nilai UTS: ");
        int uts = sc.nextInt();
        System.out.print("Masukkan Nilai UAS: ");
        int uas = sc.nextInt();

        System.out.println("==========================");
        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 {
    double nilaiAkhir = (0.2 * tugas) + (0.2 * kuis) + (0.3 * uts) + (0.3 * uas);

    String nilaiHuruf;
    String kualifikasi;

    if (nilaiAkhir > 80 && nilaiAkhir <= 100) {
        nilaiHuruf = "A";
        kualifikasi = "Sangat Baik";
    } else if (nilaiAkhir > 73 && nilaiAkhir <= 80) {
        nilaiHuruf = "B+";
        kualifikasi = "Lebih dari Baik";
    } else if (nilaiAkhir > 65 && nilaiAkhir <= 73) {
        nilaiHuruf = "B";
        kualifikasi = "Baik";
    } else if (nilaiAkhir > 60 && nilaiAkhir <= 65) {
        nilaiHuruf = "C+";
        kualifikasi = "Lebih dari Cukup";
    } else if (nilaiAkhir > 50 && nilaiAkhir <= 60) {
        nilaiHuruf = "C";
        kualifikasi = "Cukup";
    } else if (nilaiAkhir > 39 && nilaiAkhir <= 50) {
        nilaiHuruf = "D";
        kualifikasi = "Kurang";
    } else {
        nilaiHuruf = "E";
        kualifikasi = "Gagal";
```

```
        }

        System.out.println("nilai akhir : " + nilaiAkhir);
        System.out.println("Nilai Huruf : " + nilaiHuruf);
        System.out.println("========================");
        System.out.println("========================");

        if (nilaiHuruf.equals("D") || nilaiHuruf.equals("E")) {
            System.out.println("MAAF ANDA TIDAK LULUS");
        } else {
            System.out.println("SELAMAT ANDA LULUS");
        }
    }
  }
}
```

```
PS D:\pasd16\psad16> javac pemilihan.java
PS D:\pasd16\psad16> java pemilihan.java
Program Menghitung Nilai Akhir
========================
Masukkan Nilai Tugas: 90
Masukkan Nilai Kuis: 89
Masukkan Nilai UTS: 76
Masukkan Nilai UAS: 89
========================
========================
nilai akhir : 85.3
Nilai Huruf : A
========================
========================
SELAMAT ANDA LULUS
PS D:\pasd16\psad16>
```

2.2. PERULANGAN

```
import java.util.Scanner;

public class perulangan {
    public static void main(String[] args) {
```

```
Scanner sc = new Scanner(System.in);

System.out.println("=== PROGRAM PERULANGAN (DERET NIM) ===");
System.out.print("Masukkan NIM Anda: ");

String nim = sc.nextLine().trim();

if (nim.length() < 2) {
    System.out.println("ERROR: NIM harus minimal 2 digit!");
    return;
}

String duaDigit = nim.substring(nim.length() - 2);
int n = Integer.parseInt(duaDigit);

System.out.println(">> 2 Digit Terakhir: " + n);

if (n < 10) {
    n += 10;
    System.out.println(">> Karena n < 10, n diubah menjadi: " + n);
} else {
    System.out.println(">> Nilai n tetap: " + n);
}

System.out.println("----------------------------------------");
System.out.print("OUTPUT DERET : ");

for (int i = 1; i <= n; i++) {

    if (i == 10 || i == 15) {
```

```
            continue;
        }

        if (i % 3 == 0) {
            System.out.print("# ");
        }
        else if (i % 2 == 0) {
            System.out.print(i + " ");
        }
        else {
            System.out.print("* ");
        }
    }

    System.out.println("\n----------------------------------------");
  }
}
```

```
PS D:\pasd16\psad16> javac perulangan.java
PS D:\pasd16\psad16> java perulangan.java
=== PROGRAM PERULANGAN (DERET NIM) ===
Masukkan NIM Anda: 254107020021
>> 2 Digit Terakhir: 21
>> Nilai n tetap: 21
----------------------------------------
OUTPUT DERET : * 2 # 4 * # * 8 # * # * 14 16 * # * 20 #
----------------------------------------
PS D:\pasd16\psad16>
```

2.3. ARRAY

```
import java.util.Scanner;
import java.util.ArrayList;

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

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

System.out.print("Masukkan jumlah mata kuliah: ");
int n = sc.nextInt();
sc.nextLine();

ArrayList<String> matkul = new ArrayList<>();
ArrayList<Integer> sks = new ArrayList<>();
ArrayList<Double> nilaiAngka = new ArrayList<>();
ArrayList<String> nilaiHuruf = new ArrayList<>();
ArrayList<Double> bobotNilai = new ArrayList<>();


System.out.println("\n--- Masukkan Data Mata Kuliah ---");
for (int i = 0; i < n; i++) {
    System.out.println("Mata Kuliah ke-" + (i+1) + ":");
    System.out.print("Nama mata kuliah: ");
    matkul.add(sc.nextLine());
    System.out.print("SKS: ");
    sks.add(sc.nextInt());
    System.out.print("Nilai angka: ");
    nilaiAngka.add(sc.nextDouble());
    sc.nextLine(); // consume newline
}

double totalBobotSKS = 0;
int totalSKS = 0;
```

```
for (int i = 0; i < matkul.size(); i++) {
    double nilai = nilaiAngka.get(i);
    if (nilai > 80 && nilai <= 100) {
        nilaiHuruf.add("A");
        bobotNilai.add(4.00);
    } else if (nilai > 73 && nilai <= 80) {
        nilaiHuruf.add("B+");
        bobotNilai.add(3.50);
    } else if (nilai > 65 && nilai <= 73) {
        nilaiHuruf.add("B");
        bobotNilai.add(3.00);
    } else if (nilai > 60 && nilai <= 65) {
        nilaiHuruf.add("C+");
        bobotNilai.add(2.50);
    } else if (nilai > 50 && nilai <= 60) {
        nilaiHuruf.add("C");
        bobotNilai.add(2.00);
    } else if (nilai > 39 && nilai <= 50) {
        nilaiHuruf.add("D");
        bobotNilai.add(1.00);
    } else {
        nilaiHuruf.add("E");
        bobotNilai.add(0.00);
    }

    totalBobotSKS += (bobotNilai.get(i) * sks.get(i));
    totalSKS += sks.get(i);
}
```

```
        double ipSemester = totalBobotSKS / totalSKS;

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

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

        for (int i = 0; i < matkul.size(); i++) {
            System.out.printf("%-40s %-12.2f %-12s %-12.2f\n",
                matkul.get(i), nilaiAngka.get(i), nilaiHuruf.get(i), bobotNilai.get(i));
        }

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

```
==================================
Hasil Konversi Nilai
==================================
Mata Kuliah                              Nilai Angka  Nilai Huruf  Bobot Nilai
pancasila                                90,00        A            4,00
Dasar Pemrograman                        63,00        C+           2,50
Praktikum Dasar Pemrograman              73,00        B            3,00
Matematika Dasar                         65,00        C+           2,50
Bahasa Inggris                           80,00        B+           3,50
Konsep Teknologi Informasi               92,00        A            4,00
Keselamatan dan Kesehatan Kerja          78,00        B+           3,50
Critical Thinking dan Problem Solving    80,00        B+           3,50
==================================
IP Semester : 3,25
==================================
PS D:\pasd16\psad16>
```

2.4. FUNGSI

```
public class fungsi {

    static int[][] stockBunga = {
            { 10, 5, 15, 7 }, // RoyalGarden 1
            { 6, 11, 9, 12 }, // RoyalGarden 2
            { 2, 10, 10, 5 }, // RoyalGarden 3
            { 5, 7, 12, 9 } // RoyalGarden 4
    };

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

    public static void main(String[] args) {
        System.out.println("=============================================");
        System.out.println("    DATA STOK BUNGA ROYAL GARDEN");
        System.out.println("=============================================");
        tampilkanStock();

        System.out.println("\n=============================================");
        System.out.println("    PENDAPATAN & STATUS SETIAP CABANG");
        System.out.println("=============================================");
        cekPendapatanDanStatus();
    }

    static void tampilkanStock() {
        String[] namaBunga = { "Aglonema", "Keladi", "Alocasia", "Mawar" };

        System.out.printf("%-15s", "Cabang");
```

```
    for (String nama : namaBunga) {
        System.out.printf("%-12s", nama);
    }
    System.out.println();

    for (int i = 0; i < stockBunga.length; i++) {
        System.out.printf("%-15s", "RoyalGarden " + (i + 1));
        for (int j = 0; j < stockBunga[i].length; j++) {
            System.out.printf("%-12d", stockBunga[i][j]);
        }
        System.out.println();
    }
}

static void cekPendapatanDanStatus() {
    for (int i = 0; i < stockBunga.length; i++) {
        int totalPendapatan = 0;

        for (int j = 0; j < stockBunga[i].length; j++) {
            totalPendapatan += (stockBunga[i][j] * hargaBunga[j]);
        }

        System.out.print("RoyalGarden " + (i + 1) + " : Rp " + totalPendapatan);

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

```
    }
}
```

```
PS D:\pasd16\psad16> java fungsi.java
   DATA STOK BUNGA ROYAL GARDEN
==========================================
Cabang          Aglonema    Keladi      Alocasia    Mawar
RoyalGarden 1   10          5           15          7
RoyalGarden 2   6           11          9           12
RoyalGarden 3   2           10          10          5
RoyalGarden 4   5           7           12          9

==========================================
   PENDAPATAN & STATUS SETIAP CABANG
==========================================
RoyalGarden 1 : Rp 1970000 -> Status: Sangat Baik
RoyalGarden 2 : Rp 1660000 -> Status: Sangat Baik
RoyalGarden 3 : Rp 1300000 -> Status: Perlu Evaluasi
RoyalGarden 4 : Rp 1535000 -> Status: Sangat Baik
PS D:\pasd16\psad16>
```

3.1. PLAT

```
import java.util.Scanner;


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


        char[] KODE = { 'A', 'B', 'D', 'E', 'F', 'G', 'H', 'L', 'N', 'T' };


        char[][] KOTA = {
                { 'B', 'A', 'N', 'T', 'E', 'N' },
                { 'J', 'A', 'K', 'A', 'R', 'T', 'A' },
                { 'B', 'A', 'N', 'D', 'U', 'N', 'G' },
                { 'C', 'I', 'R', 'E', 'B', 'O', 'N' },
                { 'B', 'O', 'G', 'O', 'R' },
                { 'P', 'E', 'K', 'A', 'L', 'O', 'N', 'G', 'A', 'N' },
                { 'S', 'E', 'M', 'A', 'R', 'A', 'N', 'G' },
                { 'S', 'U', 'R', 'A', 'B', 'A', 'Y', 'A' },
```

```
            { 'M', 'A', 'L', 'A', 'N', 'G' },
            { 'T', 'E', 'G', 'A', 'L' }
        };

         System.out.println("=== PROGRAM CEK KOTA BERDASARKAN PLAT NOMOR ===");
        System.out.print("Masukkan Kode Plat Nomor (Huruf Kapital): ");
        char inputKode = sc.next().charAt(0);

        int indexFound = -1;

        for (int i = 0; i < KODE.length; i++) {
            if (KODE[i] == inputKode) {
                indexFound = i;
                break;
            }
        }

        if (indexFound != -1) {
            System.out.print("Kota: ");
            for (int j = 0; j < KOTA[indexFound].length; j++) {
                System.out.print(KOTA[indexFound][j]);
            }
            System.out.println(); // Enter
        } else {
            System.out.println("Kode plat tidak ditemukan di data.");
        }
    }
}
```

```
PS D:\pasd16\psad16> javac plat.java
PS D:\pasd16\psad16> java plat.java
=== PROGRAM CEK KOTA BERDASARKAN PLAT NOMOR ===
Masukkan Kode Plat Nomor (Huruf Kapital): A
Kota: BANTEN
PS D:\pasd16\psad16>
```

3.2. JADWAL KULIAH

```
import java.util.Scanner;


public class jadwal {


    static int n;
    static String[] namaMatkul;
    static int[] sks;
    static int[] semester;
    static String[] hariKuliah;


    static Scanner sc = new Scanner(System.in);


    public static void main(String[] args) {
        System.out.println("====================================");
        System.out.println("   PROGRAM PENJADWALAN KULIAH");
        System.out.println("====================================");


        System.out.print("Masukkan jumlah mata kuliah: ");
        n = sc.nextInt();
        sc.nextLine();


        namaMatkul = new String[n];
        sks = new int[n];
        semester = new int[n];
        hariKuliah = new String[n];
```

```
inputData();

while (true) {
    System.out.println("\n---------------------------------");
    System.out.println("    MENU JADWAL KULIAH");
    System.out.println("---------------------------------");
    System.out.println("1. Tampilkan Seluruh Jadwal");
    System.out.println("2. Tampilkan Jadwal Berdasarkan HARI");
    System.out.println("3. Tampilkan Jadwal Berdasarkan SEMESTER");
    System.out.println("4. Cari Mata Kuliah (Berdasarkan Nama)");
    System.out.println("5. Keluar");
    System.out.print("Pilih menu (1-5): ");

    int pilihan = sc.nextInt();
    sc.nextLine();

    switch (pilihan) {
        case 1:
            tampilkanSeluruhJadwal();
            break;
        case 2:
            System.out.print("Masukkan Hari (Senin/Selasa/dst): ");
            String hariCari = sc.nextLine();
            tampilkanJadwalPerHari(hariCari);
            break;
        case 3:
            System.out.print("Masukkan Semester: ");
            int semCari = sc.nextInt();
            tampilkanJadwalPerSemester(semCari);
```

```
                break;
            case 4:
                System.out.print("Masukkan Nama Matkul dicari: ");
                String namaCari = sc.nextLine();
                cariMatkul(namaCari);
                break;
            case 5:
                System.out.println("Program selesai. Terima kasih!");
                return;
            default:
                System.out.println("Pilihan tidak valid!");
        }
    }
}

static void inputData() {
    System.out.println("\n--- Input Data Mata Kuliah ---");
    for (int i = 0; i < n; i++) {
        System.out.println("Data ke-" + (i + 1));

        System.out.print("Nama Matkul : ");
        namaMatkul[i] = sc.nextLine();

        System.out.print("SKS         : ");
        sks[i] = sc.nextInt();

        System.out.print("Semester    : ");
        semester[i] = sc.nextInt();
        sc.nextLine();
```

```
            System.out.print("Hari Kuliah : ");
            hariKuliah[i] = sc.nextLine();
            System.out.println();
        }
    }

    static void tampilkanSeluruhJadwal() {
        System.out.println("\n--- SELURUH JADWAL KULIAH ---");
          System.out.printf("%-30s %-5s %-10s %-10s\n", "Mata Kuliah", "SKS", "Semester",
"Hari");
        System.out.println("-----------------------------------------------------------");

        for (int i = 0; i < n; i++) {
            System.out.printf("%-30s %-5d %-10d %-10s\n",
                    namaMatkul[i], sks[i], semester[i], hariKuliah[i]);
        }
    }

    static void tampilkanJadwalPerHari(String hari) {
        System.out.println("\n--- JADWAL HARI: " + hari.toUpperCase() + " ---");
        System.out.printf("%-30s %-5s %-10s\n", "Mata Kuliah", "SKS", "Semester");

        boolean ditemukan = false;
        for (int i = 0; i < n; i++) {
            if (hariKuliah[i].equalsIgnoreCase(hari)) {
                System.out.printf("%-30s %-5d %-10d\n",
                        namaMatkul[i], sks[i], semester[i]);
                ditemukan = true;
            }
        }
        if (!ditemukan)
```

```
        System.out.println("Tidak ada jadwal di hari tersebut.");
    }

    static void tampilkanJadwalPerSemester(int sem) {
        System.out.println("\n--- JADWAL SEMESTER: " + sem + " ---");
        System.out.printf("%-30s %-5s %-10s\n", "Mata Kuliah", "SKS", "Hari");

        boolean ditemukan = false;
        for (int i = 0; i < n; i++) {
            if (semester[i] == sem) {
                System.out.printf("%-30s %-5d %-10s\n",
                        namaMatkul[i], sks[i], hariKuliah[i]);
                ditemukan = true;
            }
        }
        if (!ditemukan)
            System.out.println("Tidak ada mata kuliah di semester " + sem);
    }

    static void cariMatkul(String nama) {
        System.out.println("\n--- PENCARIAN MATKUL: " + nama + " ---");

        boolean ditemukan = false;
        for (int i = 0; i < n; i++) {
            if (namaMatkul[i].equalsIgnoreCase(nama)) {
                System.out.println("Ditemukan Data:");
                System.out.println("Nama    : " + namaMatkul[i]);
                System.out.println("SKS     : " + sks[i]);
                System.out.println("Semester: " + semester[i]);
                System.out.println("Hari    : " + hariKuliah[i]);
```

```
            System.out.println("-------------------------");
            ditemukan = true;
        }
    }
    if (!ditemukan)
        System.out.println("Mata kuliah tidak ditemukan.");
  }
}
```

```
PS D:\pasd16\psad16> java jadwal.java
---------------------------------
   MENU JADWAL KULIAH
---------------------------------
1. Tampilkan Seluruh Jadwal
2. Tampilkan Jadwal Berdasarkan HARI
3. Tampilkan Jadwal Berdasarkan SEMESTER
4. Cari Mata Kuliah (Berdasarkan Nama)
5. Keluar
Pilih menu (1-5): 1

--- SELURUH JADWAL KULIAH ---
Mata Kuliah                   SKS   Semester   Hari
-----------------------------------------------------------
Pancasila                     2     1          senin
Agama                         2     1          selasa
Basis Data                    2     1          Rabu

---------------------------------
   MENU JADWAL KULIAH
---------------------------------
1. Tampilkan Seluruh Jadwal
2. Tampilkan Jadwal Berdasarkan HARI
3. Tampilkan Jadwal Berdasarkan SEMESTER
4. Cari Mata Kuliah (Berdasarkan Nama)
5. Keluar
Pilih menu (1-5):
```