Praktikum1

```java
package src.course.jobsheet1.praktikum;

import java.util.*;

/**
 * Pemilihan
 */
public class Pemilihan {

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

        System.out.print("Masukan Nilai Tugas : "); // 20%
        float tugas = sc.nextFloat();

        System.out.print("Masukan Nilai Kuis : "); // 20%
        float kuis = sc.nextFloat();

        System.out.print("Masukan Nilai UTS : "); // 30%
        float uts = sc.nextFloat();

        System.out.print("Masukan Nilai UAS : "); // 40%
        float uas = sc.nextFloat();

        float nilaiAkhir = 0;
        String nilaiHuruf = "";

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

            System.out.println("Nilai tidak valid");
            sc.close();
        }

        nilaiAkhir = ((tugas * 20) / 100) + ((kuis * 20) / 100) + ((uts * 30) / 100) + ((uas * 40)
        / 100);

        nilaiAkhir = nilaiAkhir > 100 ? Math.min(nilaiAkhir, 100) : nilaiAkhir;

        if (nilaiAkhir <= 100 && nilaiAkhir > 80) {
            nilaiHuruf = "A";
        } else if (nilaiAkhir <= 80 && nilaiAkhir > 73) {
            nilaiHuruf = "B+";
        } else if (nilaiAkhir <= 73 && nilaiAkhir > 65) {
            nilaiHuruf = "B";
        } else if (nilaiAkhir <= 65 && nilaiAkhir > 60) {
            nilaiHuruf = "C+";
        } else if (nilaiAkhir <= 60 && nilaiAkhir > 50) {
            nilaiHuruf = "C";
        } else if (nilaiAkhir <= 50 && nilaiAkhir > 39) {
            nilaiHuruf = "D";
        } else if (nilaiAkhir <= 39) {
            nilaiHuruf = "E";
        }

        boolean isPassed = true;

        if (!nilaiHuruf.equals("A")
                && !nilaiHuruf.equals("B+")
                && !nilaiHuruf.equals("B")
                && !nilaiHuruf.equals("C+")
                && !nilaiHuruf.equals("C")) {
            isPassed = false;
        }

        System.out.printf("Nilai Akhir : %.2f\n", nilaiAkhir);
        System.out.printf("Nilai Huruf : %s\n", nilaiHuruf);
        System.out.println(isPassed ? "ANDA LULUS" : "ANDA TIDAK LULUS");
    }
}
```

Praktikum 2

```java
package src.course.jobsheet1.praktikum;

/*
 * cetak angka 1 - n dengan catatan:
 * kecuali 6 dan 10
 * angka ganjil dicetak dengan "*"
 * n = 2 digit terakhir nim
 * jika n < 10 maka n + 10
 *
 * nim = 2341760190
 */

public class Perulangan {
    public static void main(String[] args) {
        String nim = "2341760190";

        // get last digit
        String temp = "";
        int lastDigitNim = 0;

        for (int i = 0; i < nim.length(); i++) {
            temp += nim.charAt(nim.length() - 2);
            temp += nim.charAt(nim.length() - 1);
            break;
        }

        lastDigitNim = Integer.parseInt(temp);

        // check if last digit nim les than 10
        if (lastDigitNim < 10) {
            lastDigitNim += 10;
        }

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

            if (i == 6 || i == 10) {
                continue;
            } else if (i % 2 != 0) {
                System.out.print("* ");
            } else {
                System.out.print(i + " ");
            }
        }
    }
}
```

Praktikum 3

```java
package src.course.jobsheet1.praktikum;

import java.util.*;

public class PrakArray {

    static String matkul[] = {
        "Matdas", "Agama", "PAMB", "KTI", "BIN", "BIG", "CTPS", "Daspro", "P.Daspro"
    };

    static int SKS[] = { 2, 2, 2, 2, 2, 2, 2, 2, 3 };
    static String nilaiHuruf[] = new String[matkul.length];
    static double bobotNilai[] = new double[matkul.length], nilai;

    public static void CalculateNilai(double nilaiMK[]) {

        for (int i = 0; i < nilaiMK.length; i++) {
            if (nilaiMK[i] <= 100 && nilaiMK[i] > 80) {
                nilaiHuruf[i] = "A";
                bobotNilai[i] = 4;

            } else if (nilaiMK[i] <= 80 && nilaiMK[i] > 73) {
                nilaiHuruf[i] = "B+";
                bobotNilai[i] = 3.5;

            } else if (nilaiMK[i] <= 73 && nilaiMK[i] > 65) {
                nilaiHuruf[i] = "B";
                bobotNilai[i] = 3;

            } else if (nilaiMK[i] <= 65 && nilaiMK[i] > 60) {
                nilaiHuruf[i] = "C+";
                bobotNilai[i] = 2.5;

            } else if (nilaiMK[i] <= 60 && nilaiMK[i] > 50) {
                nilaiHuruf[i] = "C";
                bobotNilai[i] = 2;

            } else if (nilaiMK[i] <= 50 && nilaiMK[i] > 39) {
                nilaiHuruf[i] = "D";
                bobotNilai[i] = 1;

            } else if (nilaiMK[i] <= 39) {
                nilaiHuruf[i] = "E";
                bobotNilai[i] = 0;
            }
        }
    }

    public static double CalculateIP(double bobotNilai[]) {
        int totalSKS = 0;

        // sum SKS
        for (int i = 0; i < SKS.length; i++) {
            totalSKS += SKS[i];
        }

        double temp[] = new double[SKS.length];
        // multiply each of bobot nilai with sks
        for (int i = 0; i < SKS.length; i++) {

            // store to temp
            temp[i] = bobotNilai[i] * SKS[i];
        }

        double IP = 0;

        // sum temp
        for (int i = 0; i < temp.length; i++) {
            IP += temp[i];
        }

        return IP / totalSKS;
    }

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

        double nilaiMatkul[] = new double[matkul.length];

        // loop for taking input
        for (int i = 0; i < matkul.length; i++) {
            System.out.print("Nilai Matkul " + matkul[i] + " : ");
            nilaiMatkul[i] = sc.nextDouble();
        }

        CalculateNilai(nilaiMatkul);
        double IP = CalculateIP(bobotNilai);

        System.out.println();
        System.out.println("MATKU       NILAI ANGKA    NILAI HURUF    BOBOT NILAI");
        for (int i = 0; i < matkul.length; i++) {
            // Adjust column widths and align columns
            System.out.printf("%-12s%-15s%-15s%-10s\n",
                    matkul[i], nilaiMatkul[i], nilaiHuruf[i], bobotNilai[i]);
        }

        System.out.println("IP = " + IP);

        sc.close();
    }
}
```

Praktikum 4

```java
package src.course.jobsheet1.praktikum;

public class Fungsi {

    static String branchsName[] = { "Royal Garden 1", "Royal Garden 2", "Royal Garden 3",
    "Royal Garden 4" };
    static String flowersName[] = { "Aglonema", "Keladi", "Alocasia", "Mawar" };
    static int flowersPrice[] = { 75_000, 50_000, 60_000, 10_000 };
    static String getBranchName = "";

    // each of inner array represents cabang toko
    // ex: 1st index is Royal Garden 1
    static int flowersStock[][] = {
            { 10, 5, 15, 7 },
            { 6, 11, 9, 12 },
            { 2, 10, 10, 5 },
            { 5, 7, 12, 9 }
    };

    static int[] calculateIncomeOfEachBranch() {
        int incomeOfEachBranch[] = new int[branchsName.length];

        /*
         * logic :
         * buat fungsi untuk menampilkan pendapatan tiap cabang jika semua bunga habis
         * terjual
         *
         * multiply stock bunga with harga bunga
         *
         */

        // multiply stock bunga with harga bunga
        for (int i = 0; i < flowersStock.length; i++) {
            for (int j = 0; j < flowersStock[i].length; j++) {
                incomeOfEachBranch[i] = flowersPrice[i] * flowersStock[i][j];
            }
        }

        return incomeOfEachBranch;
    }

    public static String[][] getFlowerStocks(String branchName, String[][] deadFlower) {
        String[][] res = new String[flowersStock.length][2];

        getBranchName = branchName;
        // get branchs name index
        int branchIndex = -1;

        for (int i = 0; i < branchsName.length; i++) {
            if (branchsName[i].equals(branchName)) {
                branchIndex = i;
                break;
            }
        }

        // calcualte if there are dead flowers
        for (int i = 0; i < flowersStock.length; i++) {
            flowersStock[branchIndex][i] -= Integer.parseInt(deadFlower[i][1]);
        }

        // get branch stock and flower
        for (int i = 0; i < flowersStock.length; i++) {
            res[i][0] = flowersName[i];
            res[i][1] = Integer.toString(flowersStock[branchIndex][i]);
        }
        return res;
    }

    public static void main(String[] args) {
        // stock reduced because flowers dies
        String deadFlower[][] = { { "Aglonema", "1" }, { "Keladi", "2" }, { "Alocasia", "0" },
            { "Mawar", "5" } };

        int incomeOfEachBranch[] = calculateIncomeOfEachBranch();
        String[][] getFlowersStock = getFlowerStocks(branchsName[3], deadFlower); // get Royal Garden 4

        // soal 1
        for (int i = 0; i < incomeOfEachBranch.length; i++) {
            System.out.printf("%s Rp.%d\n", branchsName[i], incomeOfEachBranch[i]);
        }

        System.out.println();

        // soal 2
        System.out.println(getBranchName);
        for (int i = 0; i < branchsName.length; i++) {
            System.out.printf("Flower %s, Stock %s\n",
                    getFlowersStock[i][0],
                    getFlowersStock[i][1]);
        }
    }
}
```

Tugas
1

```java
package src.course.jobsheet1.tugas;

import java.util.*;

public class Tugas1 {
    public static void main(String[] args) {

        String plateCode[] = { "A", "B", "D", "E", "F", "G", "H", "L", "N", "T" };
        String cityName[][] = {
                { "BANTEN" },
                { "JAKARTA" },
                { "BANDUNG" },
                { "CIREBON" },
                { "BOGOR" },
                { "PEKALONGAN" },
                { "SEMARANG" },
                { "SURABYA" },
                { "MALANG" },
                { "TEGAL" } };

        Scanner sc = new Scanner(System.in);

        System.out.print("Input plate : ");
        String input = sc.nextLine();

        // get first digit of input
        String firstDigit = String.valueOf(input.charAt(0));

        // get arr index
        int arrIndex = -1;
        for (int i = 0; i < plateCode.length; i++) {

            if (plateCode[i].equals(firstDigit.toUpperCase())) {
                arrIndex = i;
                break;
            }
        }

        String city = "";

        // print if input equals to city name
        for (int i = 0; i < cityName.length;) {
            city += cityName[arrIndex][0];
            break;
        }

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

Tugas 2

```java
package src.course.jobsheet1.tugas;

import java.util.*;

public class Tugas2 {

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

        System.out.println("1. Speed");
        System.out.println("2. Time");
        System.out.println("3. Distance");
        System.out.println("0. Exit");

        System.out.print("Choose formula : ");
        String input = sc.nextLine();

        float distance, time, velocity;

        if (input.equalsIgnoreCase("0")) {
            System.out.println("Good Bye");
            return;
        }

        if (input.equalsIgnoreCase("1")) {

            System.out.print("Enter distance : ");
            distance = sc.nextFloat();

            System.out.print("Enter time : ");
            time = sc.nextFloat();

            float res = Speed(distance, time);
            System.out.printf("Speed => distance %f / time %f = %f\n", distance, time, res);
            return;
        }

        if (input.equalsIgnoreCase("2")) {

            System.out.print("Enter distance : ");
            distance = sc.nextFloat();

            System.out.print("Enter velocity : ");
            velocity = sc.nextFloat();

            float res = Time(distance, velocity);
            System.out.printf("Time => distance %f / velocity %f = %f\n", distance, velocity, res);
            return;
        }

        if (input.equalsIgnoreCase("3")) {

            System.out.print("Enter velocity : ");
            velocity = sc.nextFloat();

            System.out.print("Enter time : ");
            time = sc.nextFloat();

            float res = Distance(velocity, time);
            System.out.printf("Speed => velocity %f / time %f = %f\n", velocity, time, res);
            return;
        }

        if (Integer.parseInt(input) > 3) {
            System.out.println("Invalid input");
            return;
        }
    }

    /*
     * s = displacement
     * t = time
     * v = velocity
     *
     */

    static float Speed(float s, float t) {
        return s / t;
    }

    static float Time(float s, float v) {
        return s / v;
    }

    static float Distance(float v, float t) {
        return v * t;
    }
}
```