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1. Buatlah sistem untuk menentukan nilai mahasiswa dengan input NIM, Nilai UTS, Nilai UAS, Total Nilai, Nilai Akhir ($A/B+/B/C+/C/D/E$), Keterangan Lulus (Lulus atau Tidak Lulus) dengan menggunakan array.

Jawab:

Hasil kode program:

```
import java.util.Scanner;

public class sistemKelulusan {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.printf("Masukkan jumlah mahasiswa: ");
        int jumlah = input.nextInt();
        long[] nim = new long[jumlah];
        double[] nilaiUTS = new double[jumlah];
        double[] nilaiUAS = new double[jumlah];
        double[] total = new double[jumlah];
        String[] grade = new String[jumlah];
        String[] ket = new String[jumlah];

        for (int i = 0; i < jumlah; i++) {
            // input data sesuai jumlah mahasiswa
            System.err.println("Data ke-" + (i + 1));
            System.out.print("Masukan NIM: ");
            nim[i] = input.nextLong();

            // batasi minimal dan maksimal nilai uts dan uas
            System.out.print("Masukan Nilai UTS: ");
            nilaiUTS[i] = Math.min(100, Math.max(0, input.nextDouble()));

            System.out.print("Masukan Nilai UAS: ");
            nilaiUAS[i] = Math.min(100, Math.max(0, input.nextDouble()));

            // logika perhitungan nilai dan batas minimal serta maksimal
            double totalNilai = ((nilaiUTS[i] + nilaiUAS[i]) / 2);
            if (totalNilai >= 100) {
                total[i] = 100;
            } else if (totalNilai <= 0) {
                total[i] = 0;
            } else {
                total[i] = totalNilai;
            }

            if (total[i] >= 90) {
```

```

        grade[i] = "A";
    } else if (total[i] >= 80) {
        grade[i] = "B+";
    } else if (total[i] >= 70) {
        grade[i] = "B";
    } else if (total[i] >= 60) {
        grade[i] = "C+";
    } else if (total[i] >= 50) {
        grade[i] = "C";
    } else if (total[i] >= 40) {
        grade[i] = "D";
    } else if (total[i] >= 30) {
        grade[i] = "E";
    } else if (total[i] < 29) {
        grade[i] = "F";
    }
}

// logika keterangan lulus atau tidak menggunakan regex
if (grade[i].matches("[ABC].*")) {
    ket[i] = "Lulus";
} else {
    ket[i] = "Tidak Lulus";
}
}

// print output ke terimal
System.out.println("=====");
=====);
System.out.printf("%-12s %-12s %-12s %-8s %-8s %-8s\n",
    "NIM", "Nilai UTS", "Nilai UAS", "Total", "Grade", "Keterangan");
System.out.println("=====");
=====);

for (int i = 0; i < jumlah; i++) {
    System.out.printf("%-12d %-12.0f %-12.0f %-8.2f %-8s %-8s\n", nim[i],
        nilaiUTS[i], nilaiUAS[i], total[i],
        grade[i], ket[i]);
}
System.out.println("=====");
=====);

input.close();

}

}

```

Hasil:

Masukkan jumlah mahasiswa: 3

Data ke-1

Masukan NIM: 333222001

Masukan Nilai UTS: 70

Masukan Nilai UAS: 60

Data ke-2

Masukan NIM: 333222002

Masukan Nilai UTS: 110

Masukan Nilai UAS: 50

Data ke-3

Masukan NIM: 333222003

Masukan Nilai UTS: -10

Masukan Nilai UAS: 40

=====					
NIM	Nilai UTS	Nilai UAS	Total	Grade	Keterangan
=====					
333222001	70	60	65,00	C+	Lulus
333222002	110	50	75,00	B	Lulus
333222003	0	40	20,00	F	Tidak Lulus
=====					