Name : Azaria Cindy Sahasika
Number Id : 2341760169 / 07
Class : 1G – Business Information System
Lesson : Algorithm and Data Structure
Material : Jobsheet 1

JOBSHEET I
KONSEP DASAR PEMROGRAMAN

1. Tujuan Praktikum

Setelah melakukan materi praktikum ini, mahasiswa mampu:

1. Mengimplementasikan pemilihan, perulangan, array, dan fungsi dalam kode program Java

2. Praktikum

2.1 Pemilihan

Waktu percobaan : 50 menit

Materi pada praktikum ini telah dijelaskan pada matakuliah Dasar Pemrograman, Sehingga didalam praktikum ini, tidak akan dilakukan langkah-langkah percobaan. Jawablah pertanyaan-pertanyaan yang ada berikut ini :

2.2.1 Praktikum Pemilihan

Pertanyaan

1. Buatlah program untuk menghitung nilai akhir dari mahasiswa dengan ketentuan 20% nilai tugas, 20% dari nilai kuis, 30% nilai UTS, dan 40% nilai UAS. Setiap nilai yang dimasukkan mempunyai batas nilai 0 - 100. Ketika pengguna memasukkan diluar rentang tersebut maka akan keluar output “nilai tidak valid”. Ketika nilai akhir sudah didapatkan selanjutnya lakukan konversi nilai dengan ketentuan sebagai berikut:

Nilai Angka	Nilai Mutu		
	Nilai Huruf	Nilai Setara	Kualifikasi
80<N≤ 100	A	4	Sangat Baik
73 <N≤ 80	B+	3,5	Lebih dari Baik
65 <N≤ 73	B	3	Baik
60<N≤ 65	C+	2,5	Lebih dari Cukup
50 <N≤ 60	C	2	Cukup
39 <N≤ 50	D	1	Kurang
N≤ 39	E	0	Gagal

Jika Nilai Huruf yang didapatkan adalah A,B+,B+C+,C maka LULUS, jika nilai huruf D dan E maka TIDAK LULUS.

- Input dari program berupa komponen nilai tugas,kuis, UTS, UAS
- Otuput dari program “nilai tidak valid” jika nilai yang dimasukkan diluar ketentuan
- Output dari program berupa hasil nilai akhir, nilai huruf, dan keterangan LULUS/TIDAK LULUS

Contoh hasil Running program

```
Program Menghitung Nilai Akhir
======================
Masukkan Nilai Tugas: 85
Masukkan Nilai Kuis: 90
Masukkan Nilai UTS: 120
Masukkan Nilai UAS: 70
======================
======================
nilai tidak valid
======================
======================
Mamluatuls-MacBook-Air:Praktikum
```

```
Program Menghitung Nilai Akhir
======================
Masukkan Nilai Tugas: 90
Masukkan Nilai Kuis: 40
Masukkan Nilai UTS: 75
Masukkan Nilai UAS: 85
======================
======================
nilai akhir : 74.0
Nilai Huruf :B+
======================
======================
SELAMAT ANDA LULUS
```

OUTPUT:

```
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java selection07
Enter the assignment score: 20
Enter the quiz score: 30
Enter the midterm exam score: 60
Enter the final exam score: 50
========================

Student's Grade Analysis
Final Grade: 48.0
Grade Conversion: D (Less)
========================
Sorry, you didn't pass.
```

ANSWER:

```java
import java.util.Scanner;
public class selection07 {

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

        System.out.print("Enter the assignment score: ");
        int assignmentScore = scanner.nextInt();

        System.out.print("Enter the quiz score: ");
        int quizScore = scanner.nextInt();

        System.out.print("Enter the midterm exam score: ");
        int midtermScore = scanner.nextInt();

        System.out.print("Enter the final exam score: ");
        int finalScore = scanner.nextInt();

        // Check the validity of the scores
        if (isValidScore(assignmentScore) && isValidScore(quizScore) && isValidScore(midtermScore) && isValidScore(finalScore)) {
            // Calculate the final score
            double finalGrade = calculateFinalGrade(assignmentScore, quizScore, midtermScore, finalScore);

            // Convert the grade and determine PASS/NOT PASS
            String gradeConversion = convertGrade(finalGrade);
            String passStatus = determinePassStatus(finalGrade);

            // Output the result
            System.out.println("========================");
            System.out.println("\nStudent's Grade Analysis");
            System.out.println("Final Grade: " + finalGrade);
            System.out.println("Grade Conversion: " + gradeConversion);
            System.out.println("========================");
            System.out.println(passStatus);
        } else {
            System.out.println("Invalid scores. Ensure that scores are within the range of 0-100.");
        }

        scanner.close();
    }

    // Function to check the validity of scores (0-100)
    public static boolean isValidScore(int score) {
        return score >= 0 && score <= 100;
    }
```

```java
    // Function to calculate the final grade
    public static double calculateFinalGrade(int assignment, int quiz, int midterm, int finalExam) {
        return 0.2 * assignment + 0.2 * quiz + 0.3 * midterm + 0.4 * finalExam;
    }

    // Function to convert the grade
    public static String convertGrade(double finalGrade) {
        if (finalGrade > 80 && finalGrade <= 100) {
            return "A (Excellent!)";
        } else if (finalGrade > 73 && finalGrade <= 80) {
            return "B+ (Very Good!)";
        } else if (finalGrade > 65 && finalGrade <= 73) {
            return "B (Good)";
        } else if (finalGrade > 60 && finalGrade <= 65) {
            return "C+ (More than Enough)";
        } else if (finalGrade > 50 && finalGrade <= 60) {
            return "C (Fair)";
        } else if (finalGrade > 39 && finalGrade <= 50) {
            return "D (Less)";
        } else if (finalGrade <= 39) {
            return "E (Fail!)";
        } else {
            return "Grade not included in the given qualification.";
        }
    }

    // Function to determine PASS/NOT PASS status
    public static String determinePassStatus(double finalGrade) {
        // Define the passing threshold (adjust as needed)
        double passingThreshold = 51;

        if (finalGrade >= passingThreshold) {
            return "Congratulations you passed!";
        } else {
            return "Sorry, you didn't pass.";
        }
    }
}
```

2.2 Perulangan

Waktu percobaan : 50 menit

Materi pada praktikum ini telah dijelaskan pada matakuliah Dasar Pemrograman. Sehingga didalam praktikum ini, tidak akan dilakukan langkah-langkah percobaan. Jawablah pertanyaan-pertanyaan yang ada berikut ini :

2.3.1 Praktikum Perulangan

Pertanyaan

1. Buatlah program yang dapat menampilkan deretan bilangan dari angka 1 sampai n kecuali angka 6 dan 10, angka ganjil dicetak dengan asterik "*", angka genap dicetak sesuai bilangan aslinya, dengan n = 2 digit terakhir NIM anda.

   *bila n<10 maka tambahkan 10 (n+=10)

   Contoh:

   Input NIM: 2341720102 maka n=12

   OUTPUT : * 2 * 4 * * 8 * * 12

   Contoh 2:

   Input NIM: 2341720113 maka n=13

   OUTPUT : * 2 * 4 * * 8 * * 12

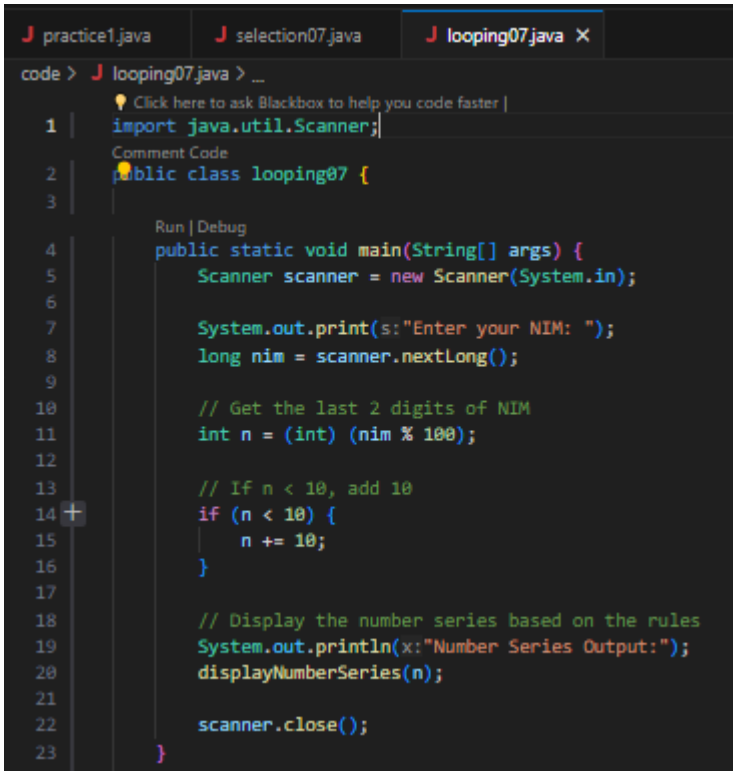
   Contoh hasil running program

```
Masukkan Nim :2341720102
======================
n : 12
 * 2 * 4 * * 8 * * 12
```

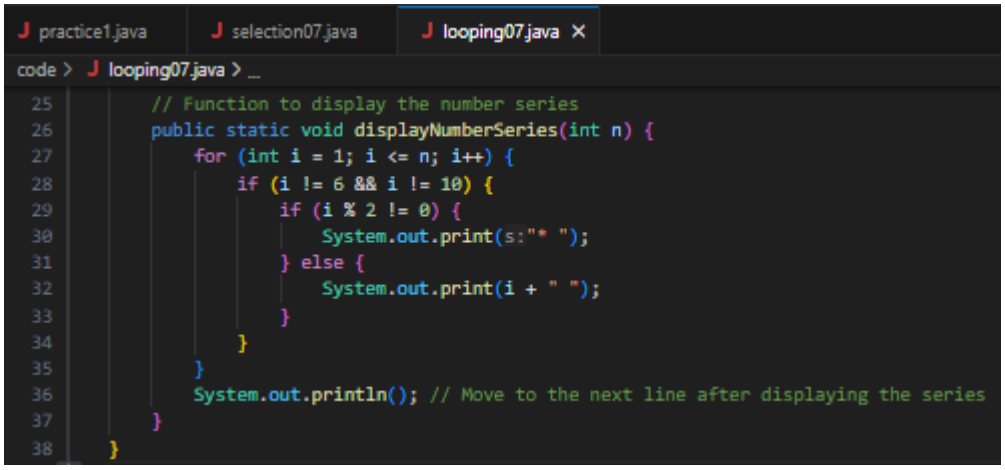
OUTPUT:

```
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java looping07
Enter your NIM: 2341760169
Number Series Output:
* 2 * 4 * * 8 * * 12 * 14 * 16 * 18 * 20 * 22 * 24 * 26 * 28 * 30 * 32 * 34 * 36 * 38 * 40 * 42 * 44 * 46 * 48 * 50 * 52 * 54 * 56 * 58 * 60 * 62 * 64 * 66 * 68 *
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java looping07
Enter your NIM: 2341720102
Number Series Output:
* 2 * 4 * * 8 * * 12
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java looping07
Enter your NIM: 2341720113
Number Series Output:
* 2 * 4 * * 8 * * 12 *
```

ANSWER:



```java
import java.util.Scanner;
public class looping07 {

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

        System.out.print("Enter your NIM: ");
        long nim = scanner.nextLong();

        // Get the last 2 digits of NIM
        int n = (int) (nim % 100);

        // If n < 10, add 10
        if (n < 10) {
            n += 10;
        }

        // Display the number series based on the rules
        System.out.println("Number Series Output:");
        displayNumberSeries(n);

        scanner.close();
    }
```



```java
    // Function to display the number series
    public static void displayNumberSeries(int n) {
        for (int i = 1; i <= n; i++) {
            if (i != 6 && i != 10) {
                if (i % 2 != 0) {
                    System.out.print("* ");
                } else {
                    System.out.print(i + " ");
                }
            }
        }
        System.out.println(); // Move to the next line after displaying the series
    }
}
```

2.3 Array

Waktu percobaan : 50 menit

Materi pada praktikum ini telah dijelaskan pada matakuliah Dasar Pemrograman, sehingga didalam praktikum ini, tidak akan dilakukan langkah-langkah percobaan. Jawablah pertanyaan-pertanyaan yang ada berikut ini :

2.4.1 Praktikum Array

Pertanyaan

1. Buatlah program untuk menghitung IP Semester dari matakuliah yang Anda tempuh semester lalu. Formula untuk menghitung IP semester sebagai berikut :

$$IP\ Semester = \frac{\sum_i (Nilai\ Setara_i * bobot\ SKS_i)}{\sum SKS}$$

Nilai setara didapatkan dari tabel konversi berikut ini :

Nilai Angka	Nilai Mutu		
	Nilai Huruf	Nilai Setara	Kualifikasi
80<N≤ 100	A	4	Sangat Baik
73 <N≤ 80	B+	3,5	Lebih dari Baik
65 <N≤ 73	B	3	Baik
60<N≤ 65	C+	2,5	Lebih dari Cukup
50 <N≤ 60	C	2	Cukup
39 <N≤ 50	D	1	Kurang
N≤ 39	E	0	Gagal

Input dari program berupa nama matakuliah, bobot SKS, serta nilai huruf dari matakuliah tersebut.

Contoh Hasil Running Program

```
======================
Program Menghitung IP Semester
======================
masukkan nilai Angka untuk MK Pancasila: 75
masukkan nilai Angka untuk MK Konsep Teknologi Informasi: 85
masukkan nilai Angka untuk MK Critical Thinking dan Problem Solving: 70
masukkan nilai Angka untuk MK Matermatika Dasar: 85
masukkan nilai Angka untuk MK Bahasa Inggris: 85
masukkan nilai Angka untuk MK Dasar Pemrograman: 62
masukkan nilai Angka untuk MK Praktikum Dasar Pemrograman: 62
masukkan nilai Angka untuk MK Keselamatan dan Kesehatan Kerja: 85
======================
hasil Konversi Nilai
======================
MK                                  Nilai Angka      Nilai Huruf    Bobot Nilai
Pancasila                           75.00              B+            3.50
Konsep Teknologi Informasi          85.00               A            4.00
Critical Thinking dan Problem Solving    70.00          B            3.00
Matermatika Dasar                   85.00               A            4.00
Bahasa Inggris                      85.00               A            4.00
Dasar Pemrograman                   62.00              C+            2.50
Praktikum Dasar Pemrograman         62.00              C+            2.50
Keselamatan dan Kesehatan Kerja     85.00               A            4.00
======================
IP :  3.42
```

OUTPUT:

```
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java array07
========================
Semester IP calculation program
========================
Enter numerical grade for course Pancasila:
75
Enter numerical grade for course Concept of Information Technology:
85
Enter numerical grade for course Critical Thinking and Problem Solving:
70
Enter numerical grade for course Basic Mathematics:
85
Enter numerical grade for course English:
85
Enter numerical grade for course Basic Programming:
62
Enter numerical grade for course Programming Lab:
62
Enter numerical grade for course Occupational Health and Safety:
85
========================
Grade Conversion Results
========================
Course                              Numerical Grade     Letter Grade    Grade Weight
Pancasila                           75.00               B+              3.50
Concept of Information Technology   85.00               A               4.00
Critical Thinking and Problem Solving 70.00             B               3.00
Basic Mathematics                   85.00               A               4.00
English                             85.00               A               4.00
Basic Programming                   62.00               C+              2.50
Programming Lab                     62.00               C+              2.50
Occupational Health and Safety      85.00               A               4.00
GPA: 3.50
```

ANSWER:

practice1.java | selection07.java | looping07.java | array07.java | function07.java

code > array07.java > ...

Click here to ask Blackbox to help you code faster |

```java
import java.util.Scanner;

Comment Code
public class array07 {

    Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Define the number of courses
        int numberOfCourses = 8;
        String[] courseNames = new String[numberOfCourses];
        double[] numericalGrades = new double[numberOfCourses];
        int[] sksValues = {2, 3, 3, 4, 2, 3, 1, 2}; // Credits for each course
        double[] gradeWeights = new double[numberOfCourses];

        // Input course names and grades
        courseNames[0] = "Pancasila";
        courseNames[1] = "Concept of Information Technology";
        courseNames[2] = "Critical Thinking and Problem Solving";
        courseNames[3] = "Basic Mathematics";
        courseNames[4] = "English";
        courseNames[5] = "Basic Programming";
        courseNames[6] = "Programming Lab";
        courseNames[7] = "Occupational Health and Safety";

        System.out.println(x:"========================");
        System.out.println(x:"Semester IP calculation program");
        System.out.println(x:"========================");

        for (int i = 0; i < numberOfCourses; i++) {
            System.out.println("Enter numerical grade for course " + courseNames[i] + ": ");
            numericalGrades[i] = scanner.nextDouble();
            gradeWeights[i] = convertGradeToWeight(convertNumericalGradeToLetter(numericalGrades[i]));
        }

        double totalGrade = 0;
        int totalCredits = 0;
```

practice1.java | selection07.java | looping07.java | array07.java | function07.java

code > array07.java > ...

```java
        System.out.println(x:"========================");
        System.out.println(x:"Grade Conversion Results");
        System.out.println(x:"========================");
        System.out.printf(format:"%-40s%-20s%-15s%-15s%n", ...args:"Course", "Numerical Grade", "Letter Grade", "Grade Weight");

        for (int i = 0; i < numberOfCourses; i++) {
            totalGrade += gradeWeights[i] * sksValues[i];
            totalCredits += sksValues[i];
            System.out.printf(format:"%-40s%-20.2f%-15s%-15.2f%n", courseNames[i], numericalGrades[i],
                              convertNumericalGradeToLetter(numericalGrades[i]), gradeWeights[i]);
        }

        double gpa = totalGrade / totalCredits;
        System.out.printf(format:"GPA: %.2f\n", gpa);

        scanner.close();
    }

    private static String convertNumericalGradeToLetter(double numericalGrade) {
        if (numericalGrade > 80 && numericalGrade <= 100) return "A";
        else if (numericalGrade > 73 && numericalGrade <= 80) return "B+";
        else if (numericalGrade > 65 && numericalGrade <= 73) return "B";
        else if (numericalGrade > 60 && numericalGrade <= 65) return "C+";
        else if (numericalGrade > 50 && numericalGrade <= 60) return "C";
        else if (numericalGrade > 39 && numericalGrade <= 50) return "D";
        else return "E";
    }

    private static double convertGradeToWeight(String letterGrade) {
        switch (letterGrade) {
            case "A":
                return 4.0;
            case "B+":
                return 3.5;
            case "B":
                return 3.0;
            case "C+":
                return 2.5;
            case "C":
                return 2.0;
            case "D":
                return 1.0;
            default:
                return 0.0;
        }
    }
}
```

2.4 Fungsi

Waktu percobaan : 50 menit

Materi pada praktikum ini telah dijelaskan pada matakuliah Dasar Pemrograman, sehingga didalam praktikum ini, tidak akan dilakukan langkah-langkah percobaan. Jawablah pertanyaan-pertanyaan yang ada berikut ini :

2.5.1 Praktikum Fungsi

Pertanyaan

RoyalGarden adalah toko bunga yang memiliki banyak cabang. Setiap hari Stock Bunga dan bunga-bunga yang dijual selalu dicatat dengan rincian seperti berikut ini:

Baris = Cabang Toko, Kolom = Stock bunga pada hari x

	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

Rincian Harga Aglonema =75.000 , Keladi = 50.000, Alocasia =60.000, Mawar =10.000.

1. Buatlah fungsi untuk menampilkan pendapatan setiap cabang jika semua bunga habis terjual.
2. Buatlah fungsi untuk mengetahui jumlah Stock setiap jenis bunga pada cabang royalgarden
3. Jika terdapat informasi tambahan berupa pengurangan stock karena bunga tersebut mati. Dengan rincian Aglonema -1, Keladi -2, Alocasia -0, Mawar -5.

OUTPUT:

```
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java function07
Income and stock for each branch after the reduction:
Branch RoyalGarden 1 - Income: 1970000
Flower stock at Branch RoyalGarden 1:
Aglonema: 9
Keladi: 3
Alocasia: 15
Mawar: 2

Branch RoyalGarden 2 - Income: 1660000
Flower stock at Branch RoyalGarden 2:
Aglonema: 5
Keladi: 9
Alocasia: 9
Mawar: 7

Branch RoyalGarden 3 - Income: 1300000
Flower stock at Branch RoyalGarden 3:
Aglonema: 1
Keladi: 8
Alocasia: 10
Mawar: 0

Branch RoyalGarden 4 - Income: 1535000
Flower stock at Branch RoyalGarden 4:
Aglonema: 4
Keladi: 5
Alocasia: 12
Mawar: 4
```

ANSWER:

practice1.java | selection07.java | looping07.java | array07.java | function07.java

code > function07.java > function07 > displayIncomeAndStockForEachBranch()

Click here to ask Blackbox to help you code faster | Comment Code |

```java
public class function07 {

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

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

    Run | Debug
    public static void main(String[] args) {
        displayIncomeAndStockForEachBranch();
    }

    private static void displayIncomeAndStockForEachBranch() {
        System.out.println(x:"Income and stock for each branch after the reduction:");

        // Reduction details due to flower death
        int[] deathReduction = {-1, -2, 0, -5};

        for (int i = 0; i < flowerStock.length; i++) {
            int branchIncome = calculateBranchIncome(i);
            System.out.println("Branch RoyalGarden " + (i + 1) + " - Income: " + branchIncome);

            // Reduce stock based on death information
            for (int j = 0; j < flowerStock[i].length; j++) {
                flowerStock[i][j] += deathReduction[j];
            }

            displayFlowerStock(i);
        }
    }

    private static int calculateBranchIncome(int branchIndex) {
        int branchIncome = 0;
        for (int j = 0; j < flowerStock[branchIndex].length; j++) {
            branchIncome += flowerStock[branchIndex][j] * flowerPrices[j];
        }
        return branchIncome;
    }
```

practice1.java | selection07.java | looping07.java | array07.java | function07.java

code > function07.java > ...

```java
    private static void displayFlowerStock(int branchIndex) {
        System.out.println("Flower stock at Branch RoyalGarden " + (branchIndex + 1) + ":");

        for (int j = 0; j < flowerStock[branchIndex].length; j++) {
            String flowerType = getFlowerType(j);
            System.out.println(flowerType + ": " + flowerStock[branchIndex][j]);
        }

        System.out.println(); // Blank line as a separator
    }

    private static String getFlowerType(int index) {
        switch (index) {
            case 0:
                return "Aglonema";
            case 1:
                return "Keladi";
            case 2:
                return "Alocasia";
            case 3:
                return "Mawar";
            default:
                return "";
        }
    }
}
```

3. Tugas

Waktu pengerjaan : 100 menit

1. Susun program untuk membuat dua buah array berikut isinya sebagai berikut. Array pertama adalah array satu dimensi char KODE[10], berisi kode plat mobil. Array kedua, array dua dimensi char KOTA[10][12] berisi nama kota yang berpasangan dengan kode plat mobil. Ilustrasi tampilan array tersebut adalah sebagai berikut :

A	B	A	N	T	E	N					
B	J	A	K	A	R	T	A				
D	B	A	N	D	U	N	G				
E	C	I	R	E	B	O	N				
F	B	O	G	O	R						
G	P	E	K	A	L	O	N	G	A	N	
H	S	E	M	A	R	A	N	G			
L	S	U	R	A	B	A	Y	A			
N	M	A	L	A	N	G					
T	T	E	G	A	L						

Ketika pengguna memberikan input kode plat nomor maka program akan mengeluarkan nama kota dari kode plat nomor tersebut.

ANSWER:

practice106.java | selection06.java | looping06.java | array06.java | function06.java | assignment106.java

code > assignment106.java > ...

```java
import java.util.Scanner;

public class assignment106 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Array for license plate codes
        String[] CODES = {"A", "B", "D", "E", "F", "G", "H", "L", "N", "T"};
        // Array for city names corresponding to the license plate codes
        String[][] CITIES = {
            {"Banten"},
            {"Jakarta"},
            {"Bandung"},
            {"Cirebon"},
            {"Bogor"},
            {"Pekalongan"},
            {"Semarang"},
            {"Surabaya"},
            {"Malang"},
            {"Tegal"}
        };

        // Ask for input from the user
        System.out.println(x:"Enter the license plate code:");
        String codeInput = scanner.nextLine();

        // Find and display the city name
        for (int i = 0; i < CODES.length; i++) {
            if (CODES[i].equalsIgnoreCase(codeInput)) {
                System.out.println("City for license plate code " + codeInput + " is:");
                for (int j = 0; j < CITIES[i].length; j++) {
                    System.out.println(CITIES[i][j]);
                }
                break; // Exit the loop after finding the code
            }
        }

        scanner.close();
    }
}
```

OUTPUT:

```
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java assignment106
Enter the license plate code:
N
City for license plate code N is:
Malang
```

2. Buat program untuk menghitung rumus kecepatan, jarak, dan waktu

   Berikut adalah persamaan untuk menghitung rumus tersebut :

   Rumus Kecepatan

   $$v = \frac{s}{t}$$

   Rumus Jarak

   $$s = v.t$$

   Rumus Waktu

   $$t = \frac{s}{v}$$

   Keterangan:

   $v = kecepatan$

   $s = jarak$

   $t = waktu$

   Program yang dibuat memiliki fungsi sebagai berikut:

   a. Menu (Untuk memilih rumus yang akan dihitung (kecepatan/jarak/waktu)
   b. Menghitung hasil perhitungan Kecepatan
   c. Menghitung hasil perhitungan Jarak
   d. Menghitung hasil perhitungan Waktu

   Panggil fungsi-fungsi tersebut pada fungsi main!

ANSWER:

code > assignment206.java > ...

```java
Click here to ask Blackbox to help you code faster |
import java.util.Scanner;

Comment Code
public class assignment206 {

    Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        boolean exit = false;

        while (!exit) {
            System.out.println(x:"Choose the formula to calculate:");
            System.out.println(x:"1. Speed");
            System.out.println(x:"2. Distance");
            System.out.println(x:"3. Time");
            System.out.println(x:"4. Exit");
            System.out.print(s:"Enter your choice (1/2/3/4): ");

            int choice = scanner.nextInt();

            switch (choice) {
                case 1:
                    calculateSpeed(scanner);
                    break;
                case 2:
                    calculateDistance(scanner);
                    break;
                case 3:
                    calculateTime(scanner);
                    break;
                case 4:
                    exit = true;
                    System.out.println(x:"Exiting the program.");
                    break;
                default:
                    System.out.println(x:"Invalid choice. Please try again.");
            }
        }

        scanner.close();
    }
```

code > assignment206.java > ...

```java
    private static void calculateSpeed(Scanner scanner) {
        System.out.print(s:"Enter distance (in meters): ");
        double distance = scanner.nextDouble();
        System.out.print(s:"Enter time (in seconds): ");
        double time = scanner.nextDouble();
        double speed = distance / time;
        System.out.printf(format:"Speed: %.2f m/s\n", speed);
    }

    private static void calculateDistance(Scanner scanner) {
        System.out.print(s:"Enter speed (in m/s): ");
        double speed = scanner.nextDouble();
        System.out.print(s:"Enter time (in seconds): ");
        double time = scanner.nextDouble();
        double distance = speed * time;
        System.out.printf(format:"Distance: %.2f meters\n", distance);
    }

    private static void calculateTime(Scanner scanner) {
        System.out.print(s:"Enter distance (in meters): ");
        double distance = scanner.nextDouble();
        System.out.print(s:"Enter speed (in m/s): ");
        double speed = scanner.nextDouble();
        double time = distance / speed;
        System.out.printf(format:"Time: %.2f seconds\n", time);
    }
}
```

OUTPUT:

```
PS D:\cooleyah\smstr2\algorithm and data structure\assignment\jobsheet1\code> java assignment206
Choose the formula to calculate:
1. Speed
2. Distance
3. Time
4. Exit
Enter your choice (1/2/3/4): 1
Enter distance (in meters): 2
Enter time (in seconds): 50
Speed: 0.04 m/s
Choose the formula to calculate:
1. Speed
2. Distance
3. Time
4. Exit
Enter your choice (1/2/3/4): 2
Enter speed (in m/s): 3
Enter time (in seconds): 40
Distance: 120.00 meters
Choose the formula to calculate:
1. Speed
2. Distance
3. Time
4. Exit
Enter your choice (1/2/3/4): 3
Enter distance (in meters): 4
Enter speed (in m/s): 30
Time: 0.13 seconds
Choose the formula to calculate:
1. Speed
2. Distance
3. Time
4. Exit
Enter your choice (1/2/3/4): 4
Exiting the program.
```