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Class : 1G – Business Information System
Lesson : Algorithm and Data Structure
Material : Jobsheet 1
Github Link : https://github.com/azariacindy/algorithm-ds
I

TUGAS JOBSHEET I
KONSEP DASAR PEMROGRAMAN

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 > ...

Click here to ask Blackbox to help you code faster |

```java
import java.util.Scanner;

Comment Code
public class assignment106 {
    Run | Debug
    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:

```java
import java.util.Scanner;

public class assignment206 {

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

        while (!exit) {
            System.out.println("Choose the formula to calculate:");
            System.out.println("1. Speed");
            System.out.println("2. Distance");
            System.out.println("3. Time");
            System.out.println("4. Exit");
            System.out.print("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("Exiting the program.");
                    break;
                default:
                    System.out.println("Invalid choice. Please try again.");
            }
        }

        scanner.close();
    }
```

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

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

    private static void calculateTime(Scanner scanner) {
        System.out.print("Enter distance (in meters): ");
        double distance = scanner.nextDouble();
        System.out.print("Enter speed (in m/s): ");
        double speed = scanner.nextDouble();
        double time = distance / speed;
        System.out.printf("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.
```