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KELAS : B  
BAB : 4 - Encapsulation  
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## 1. Data dan Analisis hasil percobaan

### A. Encapsulation 1

1. Lakukan percobaan diatas dan benahi jika menemukan kesalahan!



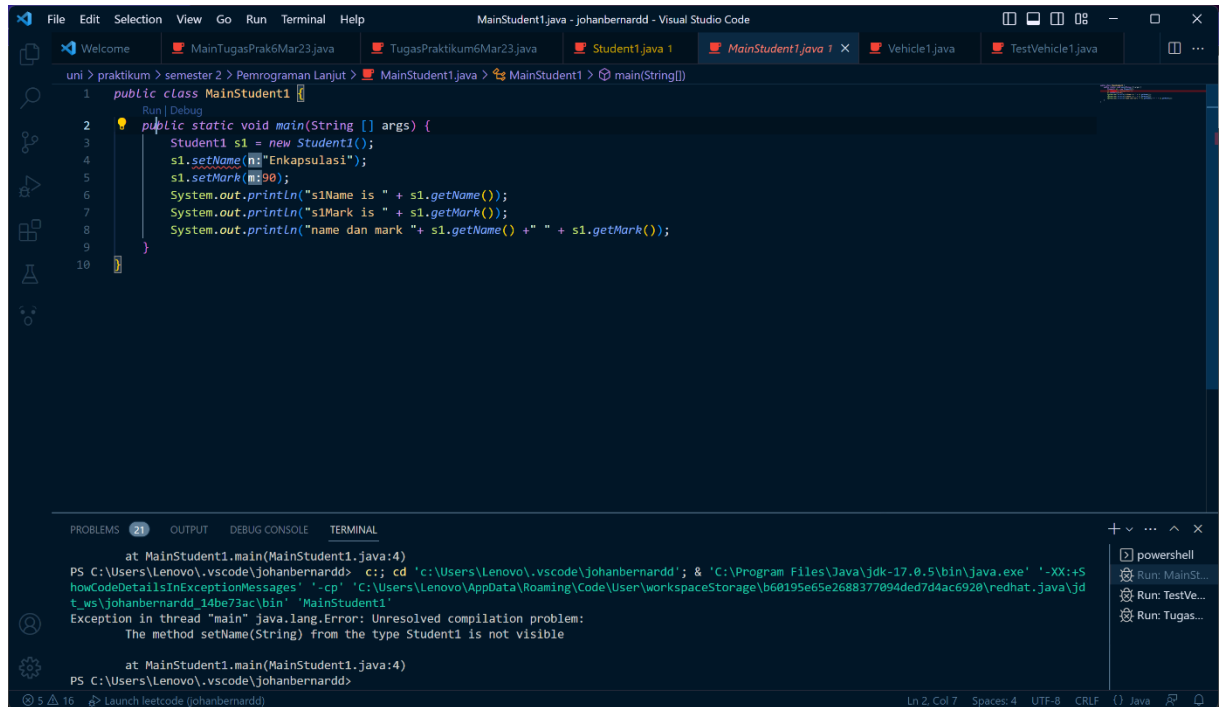
```
1 public class MainStudent1 {
2     public static void main(String [] args) {
3         Student1 s1 = new Student1();
4         s1.setName("Enkapsulasi");
5         s1.setMark(90);
6         System.out.println("s1Name is " + s1.getName());
7         System.out.println("s1Mark is " + s1.getMark());
8         System.out.println("name dan mark " + s1.getName() + " " + s1.getMark());
9     }
10 }
```

2. Jika pada baris 6 s1.setName diubah menjadi s1.getName apa yang terjadi? jelaskan!

- Yang terjadi adalah program akan dijalankan tanpa error karena method getName mengembalikan value dari method itu sendiri yakni value nama. Method getName mengembalikan value nama yang telah diinisialisasikan dari variabel awalnya yang memiliki access modifier private.

3. Setelah diperbaiki, ubahlah hak akses pada baris 4 (pada class Student) menjadi private apa yang terjadi jika class Test dijalankan? Jelaskan!

- Yang terjadi adalah class Test mengalami error dikarenakan access modifier private yang diberikan pada method void setName. Method void setName tersebut tidak dapat dijalankan karena access private yang hanya dapat berfungsi jika dijalankan pada class yang sama.



The screenshot shows a Visual Studio Code editor with a Java file named `MainStudent1.java`. The code defines a `Student1` class with `setName` and `getMark` methods. The `main` method creates a `Student1` object and calls these methods. The terminal output shows an exception: `Exception in thread "main" java.lang.Error: Unresolved compilation problem: The method setName(String) from the type Student1 is not visible`. This error occurs because the `setName` method is not accessible from the `main` method due to encapsulation.

4. Jika kedua kelas diatas terdapat dalam package yang sama apakah konsep enkapsulasi tetap berfungsi? jelaskan!

- Konsep enkapsulasi tetap berfungsi karena method-method yang ada pada class `Student` memiliki access modifier `public` yang dapat diakses oleh class `Test` jika kedua kelas tersebut masih terdapat dalam package yang sama.

## B. Encapsulation 2

1. Method apakah yang menjadi accessor (getter) ?

- Method `getLoad()` dan method `getMaxLoad()`.

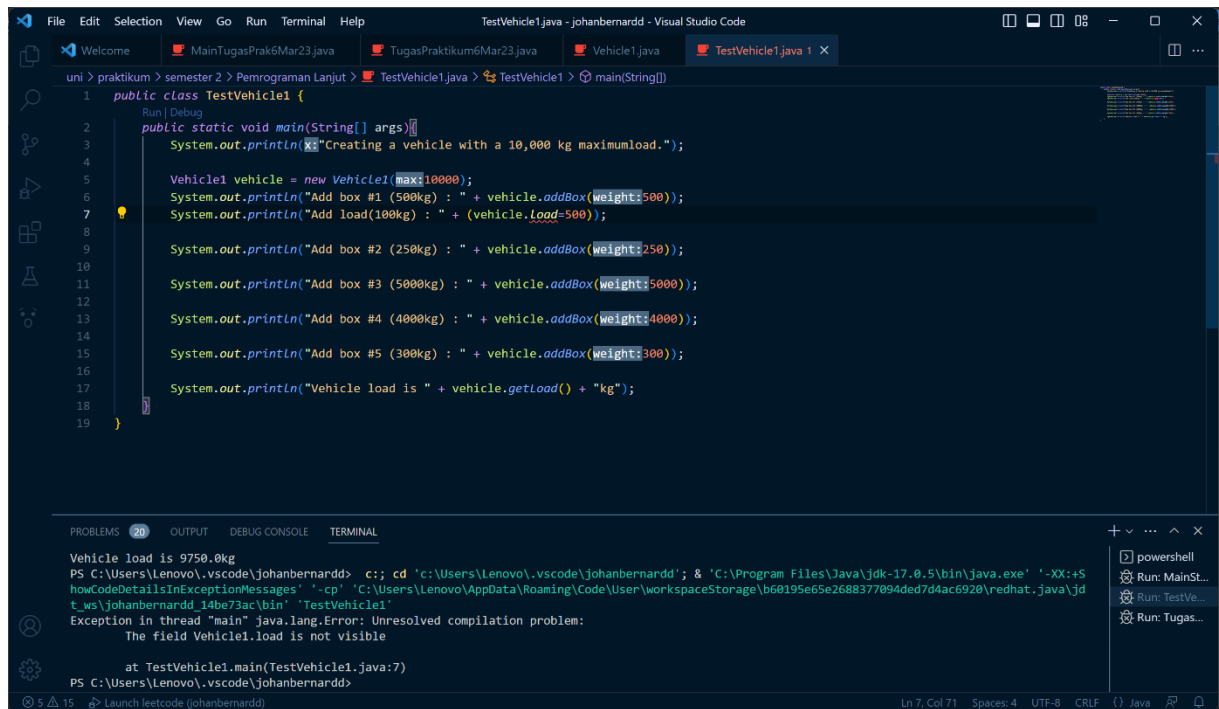
2. Tambahkan source code berikut dibawah baris ke 6 pada class `TestVehicle1`.

`System.out.println("Add load(100kg) : " + (vehicle.load=500));`

Jalankan program, apakah output dari program tersebut?

Kembalikan program seperti semula.

- Output dari programnya adalah "The field `Vehicle1.load` is not visible".



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7         System.out.println("Add load(100kg) : " + (vehicle.load=500));
8
9         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
10
11        System.out.println("Add box #3 (5000kg) : " + vehicle.addBox(weight:5000));
12
13        System.out.println("Add box #4 (4000kg) : " + vehicle.addBox(weight:4000));
14
15        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
16
17        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
18    }
19 }

```

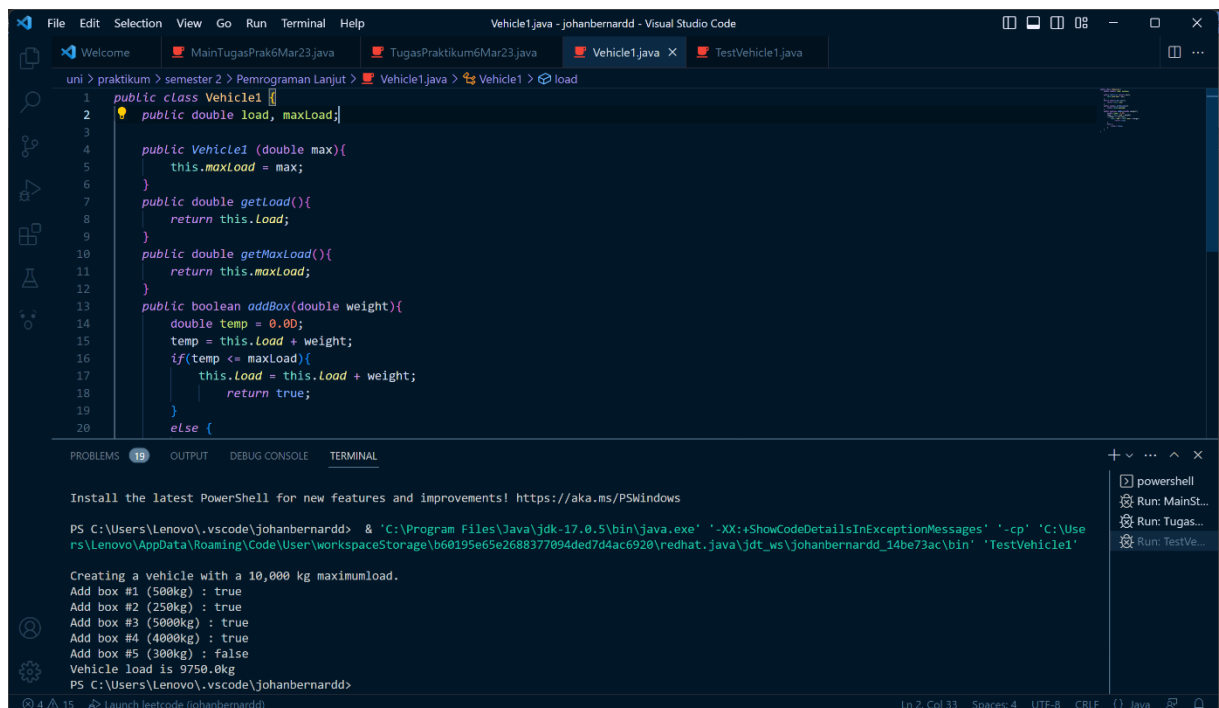
PROBLEMS (20) OUTPUT DEBUG CONSOLE TERMINAL

```

Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c:\cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+$
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
The field Vehicle1.load is not visible
    at TestVehicle1.main(TestVehicle1.java:7)
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

3. Ubahlah tipe data pada atribut load dan maxload pada class Vehicle1 menjadi public.  
Jalankan program, apakah output dari program tersebut?



```

1 public class Vehicle1 {
2     public double load, maxload;
3
4     public Vehicle1 (double max){
5         this.maxLoad = max;
6     }
7     public double getLoad(){
8         return this.load;
9     }
10    public double getMaxLoad(){
11        return this.maxLoad;
12    }
13    public boolean addBox(double weight){
14        double temp = 0.00;
15        temp = this.load + weight;
16        if(temp <= maxLoad){
17            this.load = this.load + weight;
18            return true;
19        }
20        else {

```

PROBLEMS (19) OUTPUT DEBUG CONSOLE TERMINAL

```

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Lenovo\.vscode\johanbernardd> & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Use
rs\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jdt_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add box #2 (250kg) : true
Add box #3 (5000kg) : true
Add box #4 (4000kg) : true
Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

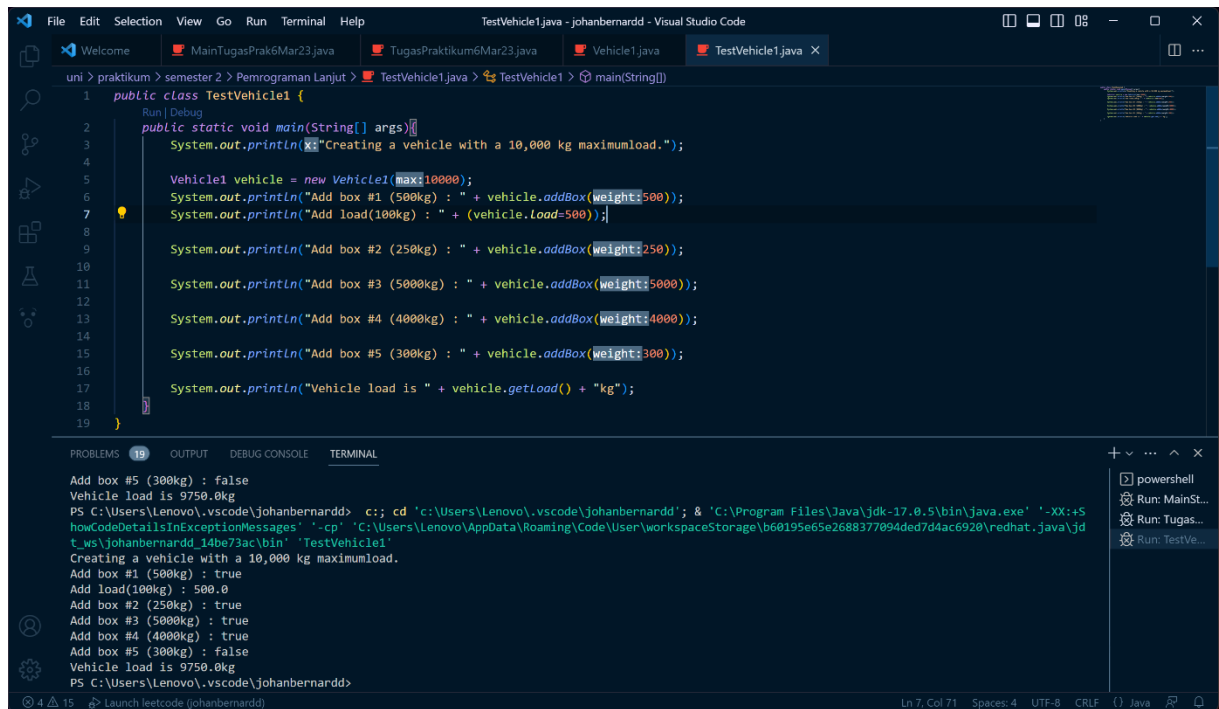
```

a. Tambahkan source code berikut dibawah baris ke 6 pada class TestVehicle1.

```
System.out.println("Add load(100kg) : " + (vehicle.load=500));
```

Jalankan program, apakah output dari program tersebut?

Kembalikan program seperti semula.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7         System.out.println("Add load(100kg) : " + (vehicle.load=500));
8
9         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
10
11        System.out.println("Add box #3 (500kg) : " + vehicle.addBox(weight:500));
12
13        System.out.println("Add box #4 (400kg) : " + vehicle.addBox(weight:400));
14
15        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
16
17        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
18    }
19 }

```

PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c:; cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+s
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add load(100kg) : 500.0
Add box #2 (250kg) : true
Add box #3 (500kg) : true
Add box #4 (400kg) : true
Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

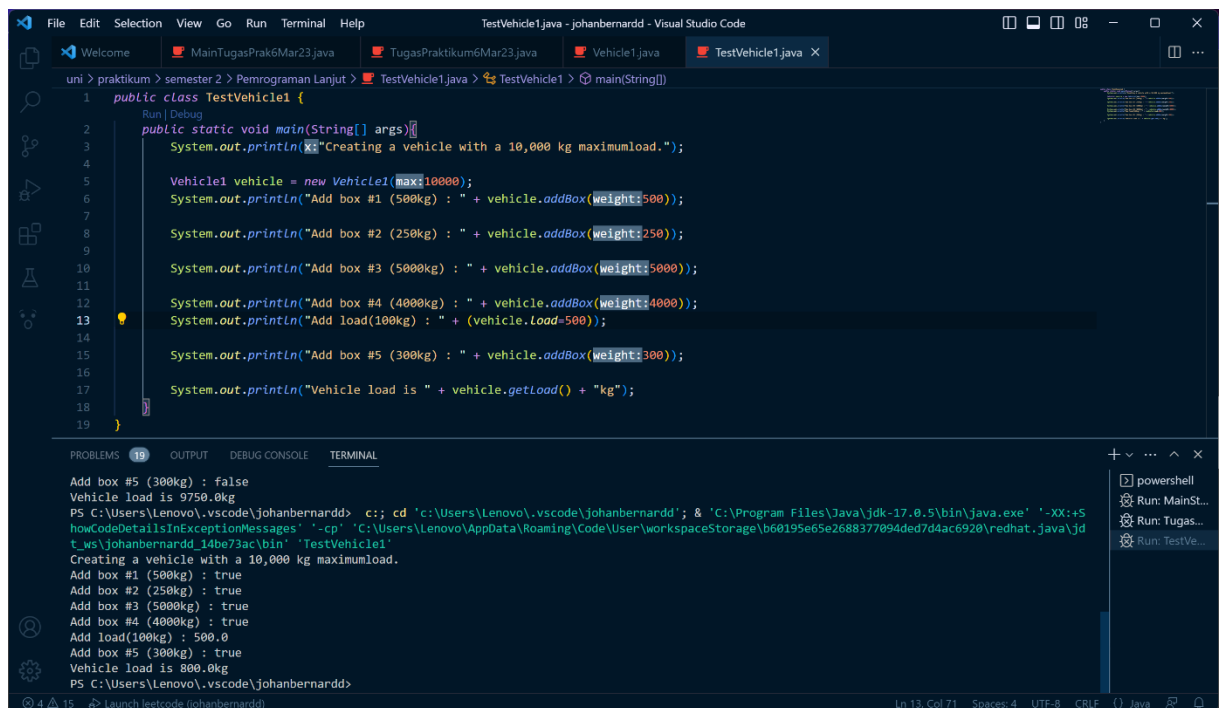
```

b. Tambahkan source code berikut dibawah baris ke 12 pada class TestVehicle1.

System.out.println("Add load(100kg) : " + (vehicle.load=500));

Jalankan program, apakah output dari program tersebut?

Kembalikan program seperti semula.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7
8         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
9
10        System.out.println("Add box #3 (500kg) : " + vehicle.addBox(weight:500));
11
12        System.out.println("Add box #4 (400kg) : " + vehicle.addBox(weight:400));
13        System.out.println("Add load(100kg) : " + (vehicle.load=500));
14
15        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
16
17        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
18    }
19 }

```

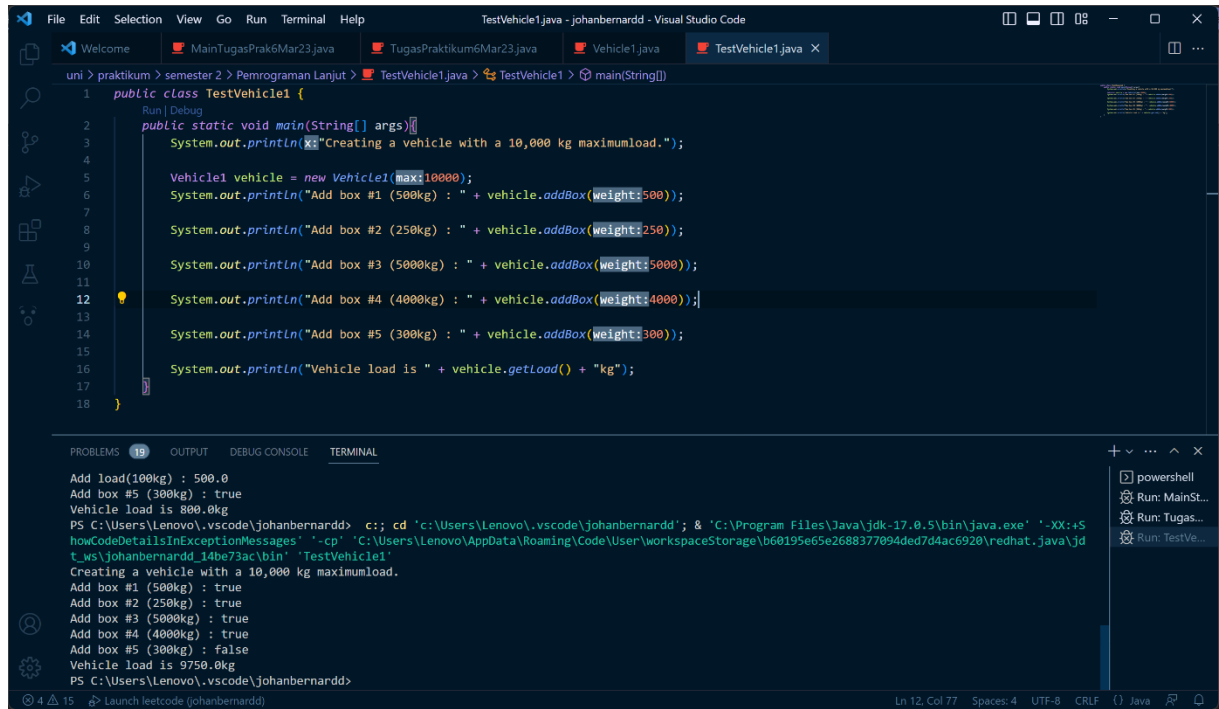
PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c:; cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+s
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add box #2 (250kg) : true
Add box #3 (500kg) : true
Add box #4 (400kg) : true
Add load(100kg) : 500.0
Add box #5 (300kg) : true
Vehicle load is 800.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

4. Ulangi instruksi pada nomer 4 dengan mengubah tipe data pada atribut load dan maxload pada class Vehicle1 menjadi **protected**.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7
8         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
9
10        System.out.println("Add box #3 (5000kg) : " + vehicle.addBox(weight:5000));
11
12        System.out.println("Add box #4 (4000kg) : " + vehicle.addBox(weight:4000));
13
14        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
15
16        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
17    }
18 }

```

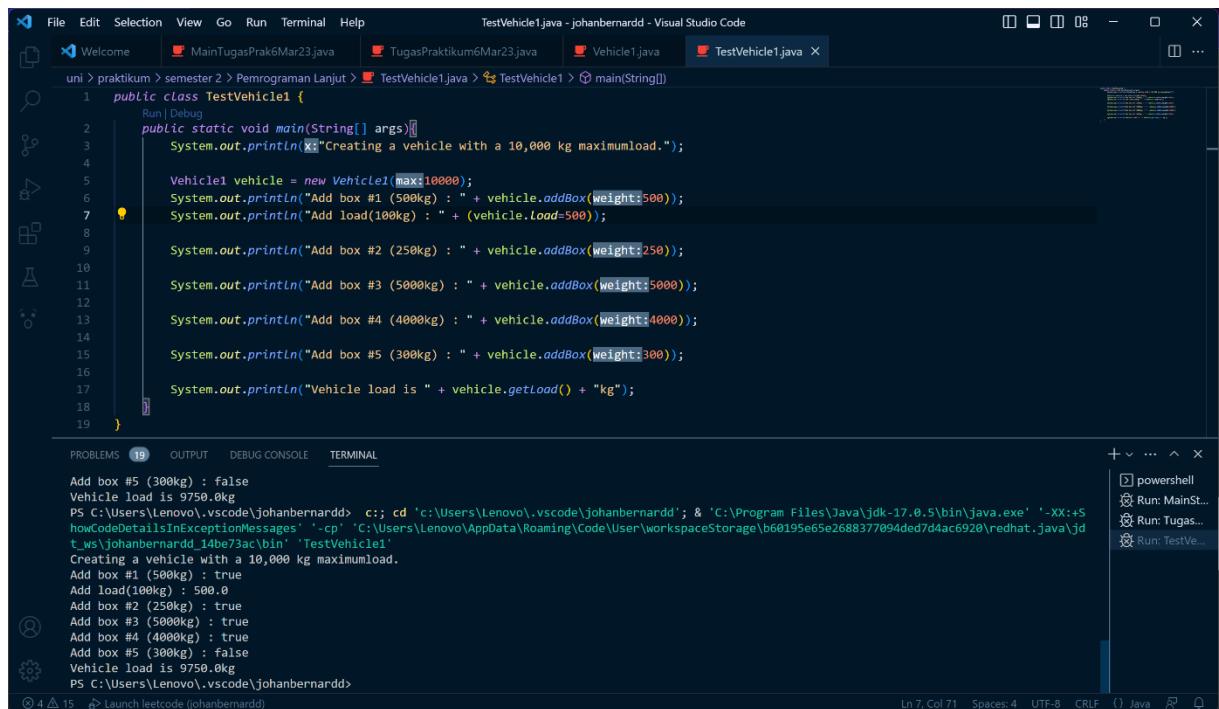
PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add load(100kg) : 500.0
Add box #5 (300kg) : true
Vehicle load is 800.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c;; cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+S
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add box #2 (250kg) : true
Add box #3 (5000kg) : true
Add box #4 (4000kg) : true
Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

a.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7         System.out.println("Add load(100kg) : " + (vehicle.Load=500));
8
9         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
10
11        System.out.println("Add box #3 (5000kg) : " + vehicle.addBox(weight:5000));
12
13        System.out.println("Add box #4 (4000kg) : " + vehicle.addBox(weight:4000));
14
15        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
16
17        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
18    }
19 }

```

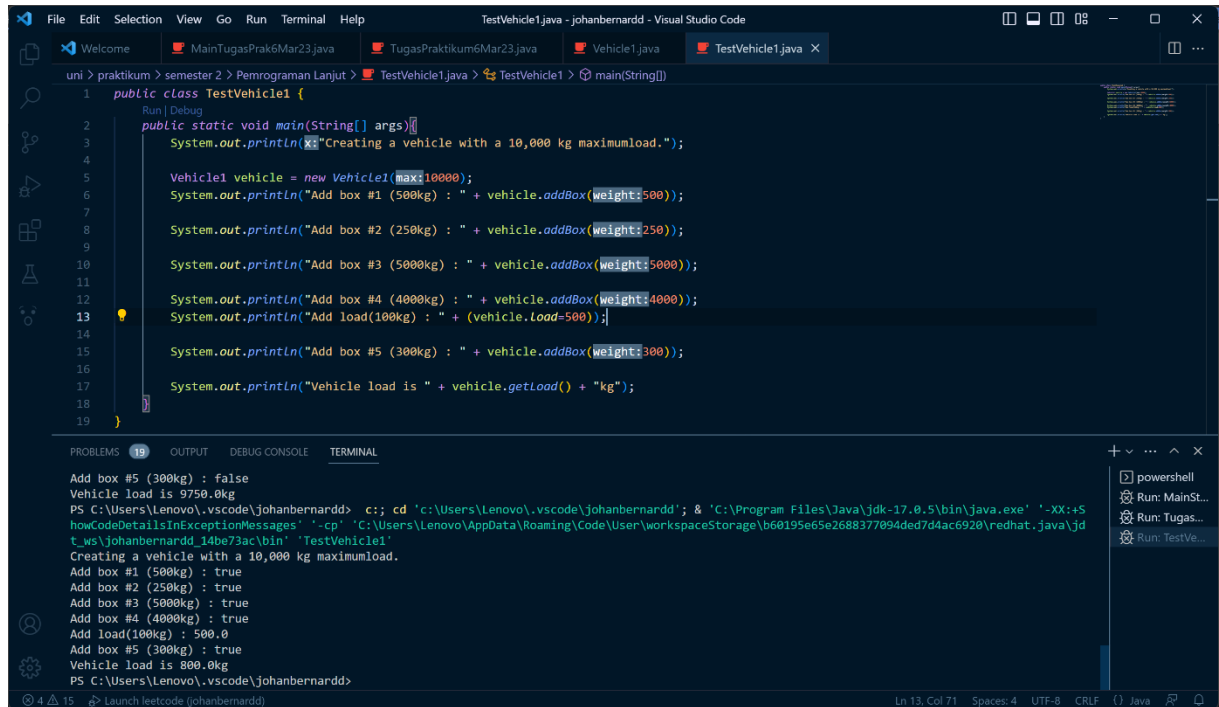
PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c;; cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+S
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add load(100kg) : 500.0
Add box #2 (250kg) : true
Add box #3 (5000kg) : true
Add box #4 (4000kg) : true
Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

b.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7
8         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
9
10        System.out.println("Add box #3 (5000kg) : " + vehicle.addBox(weight:5000));
11
12        System.out.println("Add box #4 (4000kg) : " + vehicle.addBox(weight:4000));
13        System.out.println("Add load(100kg) : " + (vehicle.load+500));
14
15        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
16
17        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
18    }
19 }

```

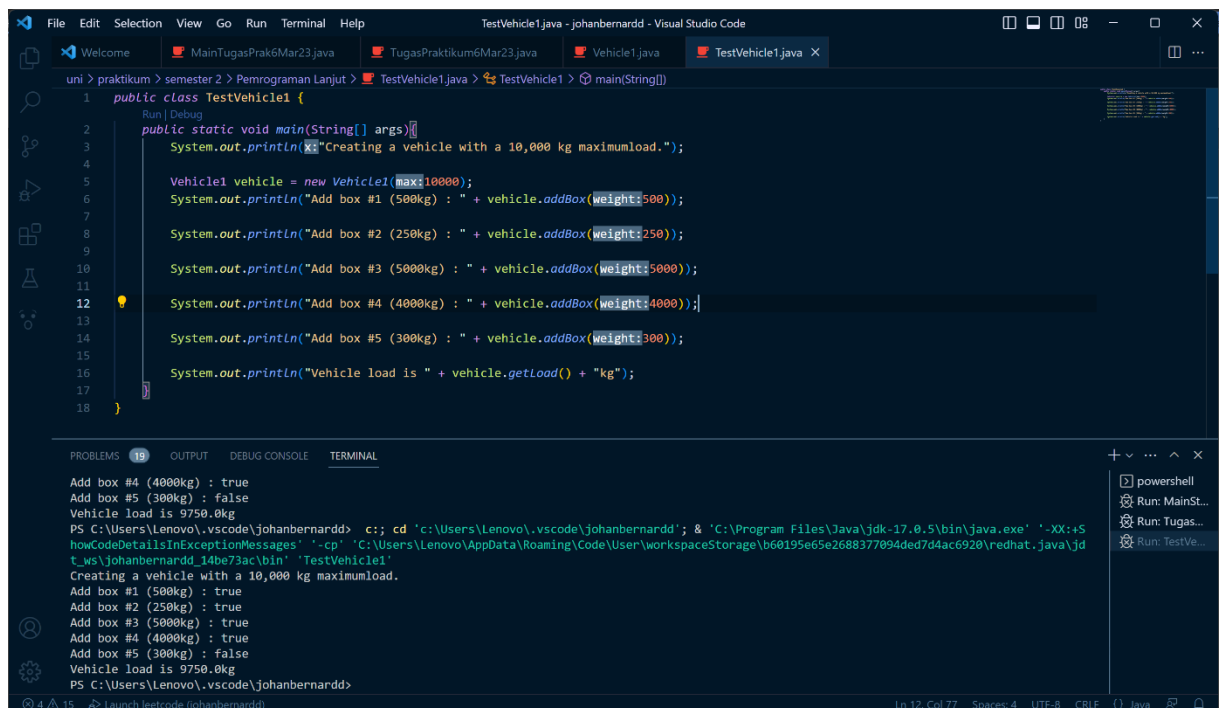
PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c:: cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+S
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add box #2 (250kg) : true
Add box #3 (5000kg) : true
Add box #4 (4000kg) : true
Add load(100kg) : 500.0
Add box #5 (300kg) : true
Vehicle load is 800.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

5. Ulangi instruksi pada nomer 4 dengan mengubah tipe data pada atribut load dan maxload pada class Vehicle1 menjadi **default**.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7
8         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
9
10        System.out.println("Add box #3 (5000kg) : " + vehicle.addBox(weight:5000));
11
12        System.out.println("Add box #4 (4000kg) : " + vehicle.addBox(weight:4000));
13
14        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
15
16        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
17    }
18 }

```

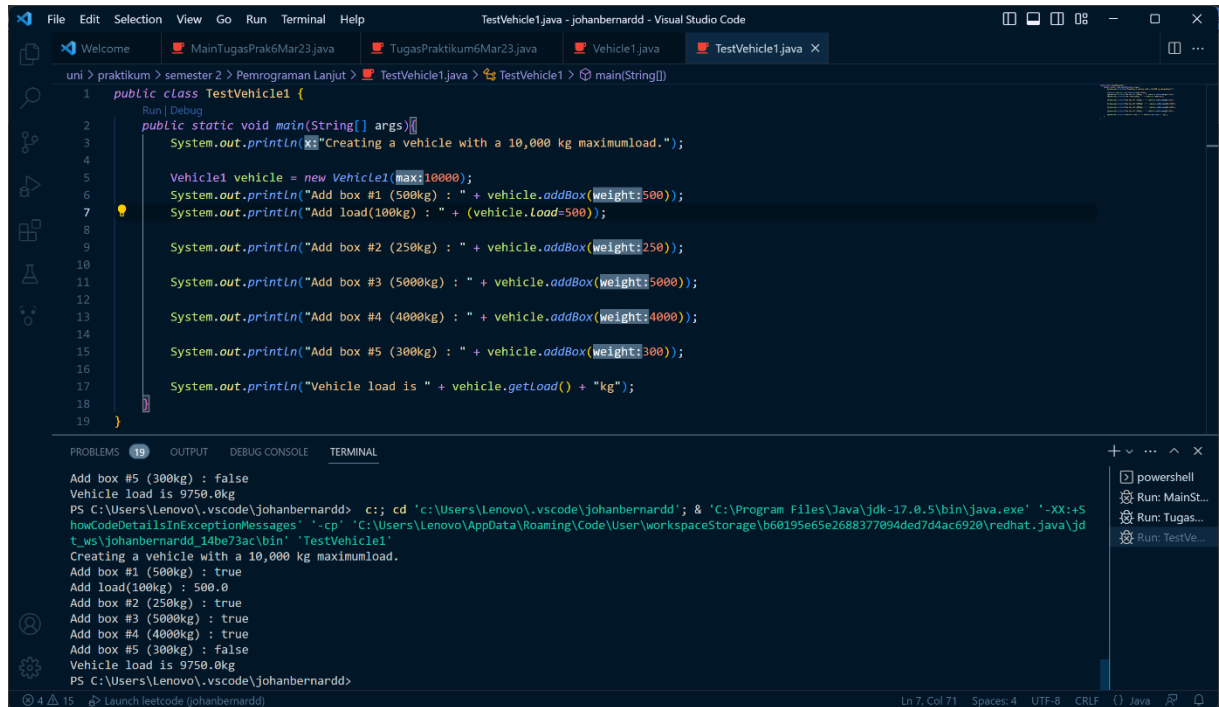
PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add box #4 (4000kg) : true
Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c:: cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+S
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add box #2 (250kg) : true
Add box #3 (5000kg) : true
Add box #4 (4000kg) : true
Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

a.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7         System.out.println("Add load(100kg) : " + (vehicle.Load-500));
8
9         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
10
11        System.out.println("Add box #3 (5000kg) : " + vehicle.addBox(weight:5000));
12
13        System.out.println("Add box #4 (4000kg) : " + vehicle.addBox(weight:4000));
14
15        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
16
17        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
18    }
19 }

```

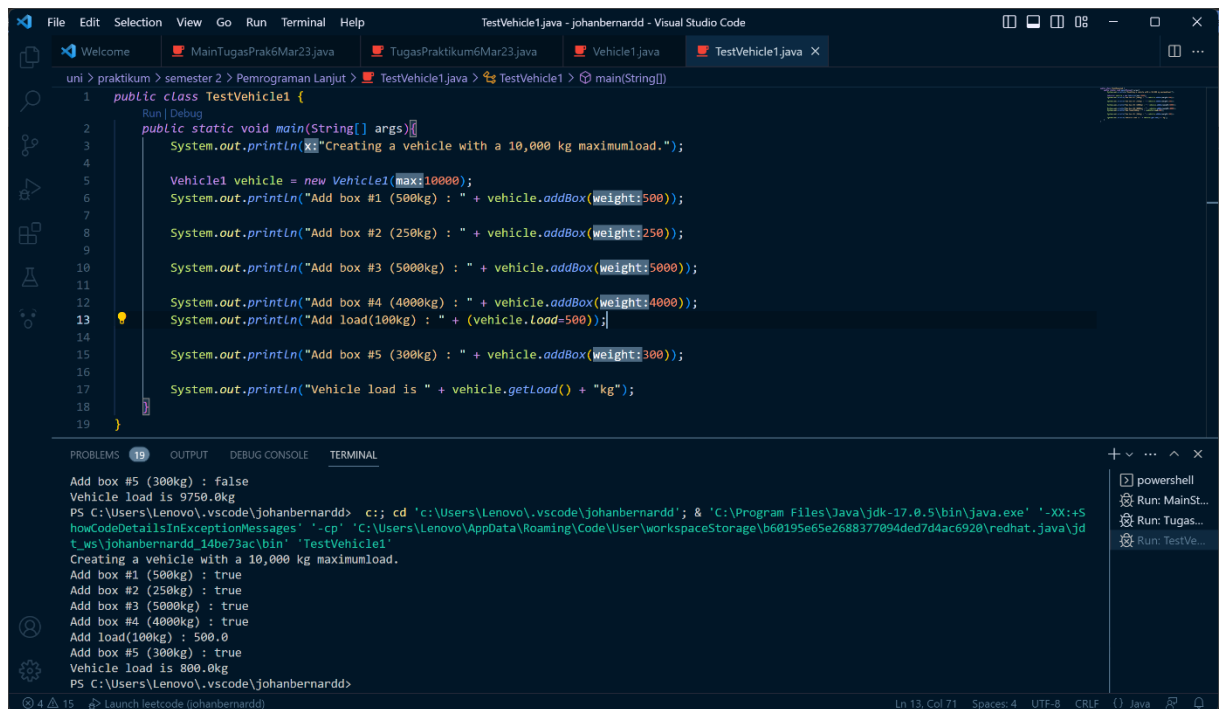
PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c;; cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+S
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add load(100kg) : 500.0
Add box #2 (250kg) : true
Add box #3 (5000kg) : true
Add box #4 (4000kg) : true
Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

b.



```

1 public class TestVehicle1 {
2     public static void main(String[] args){
3         System.out.println("Creating a vehicle with a 10,000 kg maximumload.");
4
5         Vehicle1 vehicle = new Vehicle1(max:10000);
6         System.out.println("Add box #1 (500kg) : " + vehicle.addBox(weight:500));
7
8         System.out.println("Add box #2 (250kg) : " + vehicle.addBox(weight:250));
9
10        System.out.println("Add box #3 (5000kg) : " + vehicle.addBox(weight:5000));
11
12        System.out.println("Add box #4 (4000kg) : " + vehicle.addBox(weight:4000));
13        System.out.println("Add load(100kg) : " + (vehicle.Load-500));
14
15        System.out.println("Add box #5 (300kg) : " + vehicle.addBox(weight:300));
16
17        System.out.println("Vehicle load is " + vehicle.getLoad() + "kg");
18    }
19 }

```

PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL

```

Add box #5 (300kg) : false
Vehicle load is 9750.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd> c;; cd 'c:\Users\Lenovo\.vscode\johanbernardd'; & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+S
howCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b60195e65e2688377094ded7d4ac6920\redhat.java\jd
t_ws\johanbernardd_14be73ac\bin' 'TestVehicle1'
Creating a vehicle with a 10,000 kg maximumload.
Add box #1 (500kg) : true
Add box #2 (250kg) : true
Add box #3 (5000kg) : true
Add box #4 (4000kg) : true
Add load(100kg) : 500.0
Add box #5 (300kg) : true
Vehicle load is 800.0kg
PS C:\Users\Lenovo\.vscode\johanbernardd>

```

## 2. Tugas Praktikum

### 2.1 Source code

```

3 import java.util.Scanner;
4

```



```
5 public class TugasPraktikum20Mar23 {
6     private double saldo;
7     private String noPelanggan, nama;
8
9     public TugasPraktikum20Mar23(double saldo, String
noPelanggan, String nama) {
10         this.saldo = saldo;
11         this.noPelanggan = noPelanggan;
12         this.nama = nama;
13     }
14     public double getSaldo() {
15         return saldo;
16     }
17     public String getNoPelanggan() {
18         return noPelanggan;
19     }
20     public String getNama() {
21         return nama;
22     }
23
24     private boolean checkAutentikasi(int pin) {
25         Scanner input = new Scanner(System.in);
26         int percobaan = 0;
27         while(pin != 123456 && percobaan < 2) {
28             System.out.println("PIN salah! Coba lagi");
29             percobaan++;
30             pin = input.nextInt();
31         }
32         return (pin == 123456);
33     }
34
35     // SILVER = 38;
36     // GOLD = 56;
37     // PLATINUM = 74;
38
39     public boolean pembelian (double harga) {
40         double cashback = 0;
41         boolean berhasil = false;
42         if (this.noPelanggan.substring(0,2).equals("38")) {
43             if (harga > 1000000) {
44                 cashback = harga * 0.05;
45             }
46         } else if (this.noPelanggan.substring(0,2).equals("56"))
47         {
48             if (harga > 1000000) {
49                 cashback = (harga * 0.07);
```

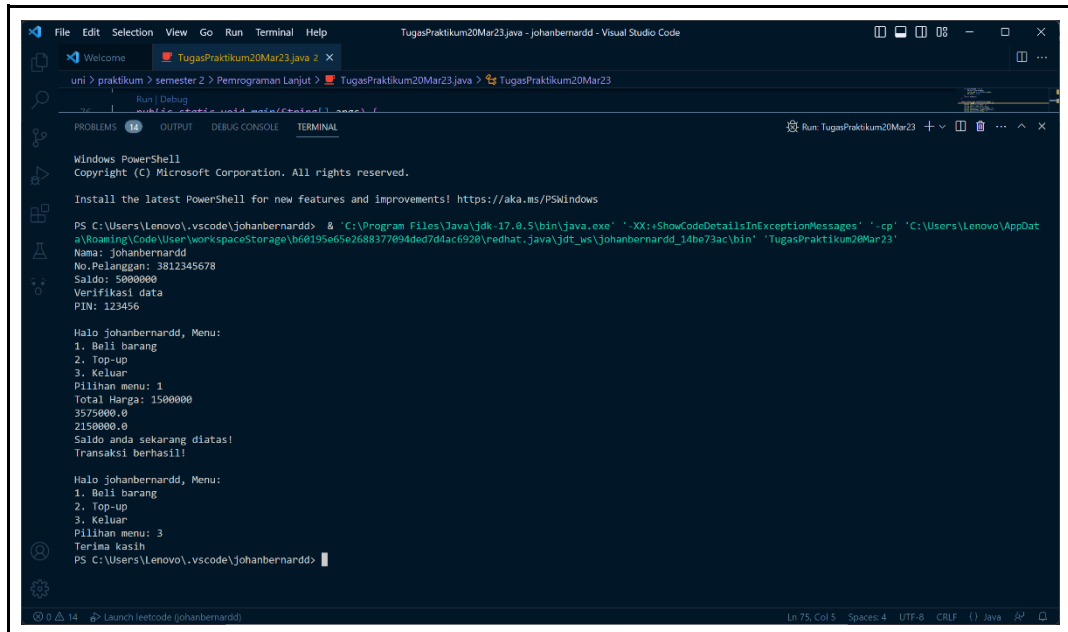


```
49         } else {
50             cashback = harga * 0.02;
51         }
52     } else if (this.noPelanggan.substring(0,2).equals("74"))
53     {
54         if (harga > 1000000) {
55             cashback = harga * 0.1;
56         } else {
57             cashback = harga * 0.05;
58         }
59         double totalHarga = harga - cashback;
60         if (totalHarga >= 10000 && this.saldo >= totalHarga) {
61             this.saldo -= totalHarga;
62             System.out.println(this.saldo);
63             berhasil = true;
64         }
65         return berhasil;
66     }
67
68     public boolean topUp(double jumlahTopUp) {
69         boolean berhasil = false;
70         if (jumlahTopUp >= 0) {
71             saldo += jumlahTopUp;
72             System.out.println(this.saldo);
73             berhasil = true;
74         }
75         return berhasil;
76     }
77
78     public static void main(String[] args) {
79         Scanner input = new Scanner(System.in);
80         System.out.print("Nama: ");
81         String nama = input.nextLine();
82         System.out.print("No.Pelanggan: ");
83         String noPelanggan = input.nextLine();
84         System.out.print("Saldo: ");
85         double saldo = input.nextDouble();
86
87         TugasPraktikum20Mar23 proses = new
88         TugasPraktikum20Mar23(saldo, noPelanggan, nama);
89         boolean autentikasiBerhasil = false;
90
91         System.out.println("Verifikasi data");
92         int batasKesalahanAutentikasi = 0;
```

```
92         while(!autentikasiBerhasil && batasKesalahanAutentikasi
93         < 2) {
94             System.out.print("PIN: ");
95             int pin = input.nextInt();
96             autentikasiBerhasil = proses.checkAutentikasi(pin);
97
98             if(!autentikasiBerhasil) {
99                 System.out.println("Gagal memasukkan pin yang
100                 benar sebanyak 3x. Akun diblokir");
101                 System.exit(0);
102             }
103         }
104
105         boolean diulang = true;
106         while (diulang) {
107             System.out.println();
108             System.out.println("Halo " + proses.getNama() + ",
109             Menu:");
110
111             System.out.println("1. Beli barang");
112             System.out.println("2. Top-up");
113             System.out.println("3. Keluar");
114
115             System.out.print("Pilihan menu: ");
116             int pilihanMenu = input.nextInt();
117
118             switch (pilihanMenu) {
119                 case 1:
120                     System.out.print("Total Harga: ");
121                     double totalHarga = input.nextDouble();
122                     proses.pembelian(totalHarga);
123
124                     if (proses.pembelian(totalHarga) == true) {
125                         System.out.println("Saldo anda sekarang
126                         diatas!");
127                         System.out.println("Transaksi
128                         berhasil!");
129                     } else if (!proses.pembelian(totalHarga) ==
130                     false) {
131                         System.out.println("Transaksi gagal!
132                         Saldo tidak cukup.");
133                     }
134                     break;
135                 case 2:
136                     System.out.print("Jumlah top up: ");
137                     double jumlahTopUp = input.nextDouble();
138                     proses.topUp(jumlahTopUp);
```

```
131         System.out.println("Top up sukses! Saldo  
Anda saat ini diatas!");  
132         break;  
133     case 3:  
134         diulang = false;  
135         System.out.println("Terima kasih");  
136         break;  
137     default:  
138         System.out.println("Pilihan menu tidak  
valid");  
139     }  
140 }  
141 }  
142 }
```

### 142.1 Screenshot hasil



```
File Edit Selection View Go Run Terminal Help
TugasPraktikum20Mar23.java - johanbernardd - Visual Studio Code
uni > praktikum > semester 2 > Pemrograman Lanjut > TugasPraktikum20Mar23.java > TugasPraktikum20Mar23
Run | Debug
TugasPraktikum20Mar23.java
Run: TugasPraktikum20Mar23
PROBLEMS 0 OUTPUT DEBUG CONSOLE TERMINAL
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\Lenovo\.vscode\johanbernardd> & 'C:\Program Files\Java\jdk-17.0.5\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Lenovo\AppData\Roaming\Code\User\workspaceStorage\b68195e65e2688377094ded7ddac6920\redhat.java\jdt_ws\johanbernardd_14be73ac\bin' 'TugasPraktikum20Mar23'
Nama: johanbernardd
No.Pelanggan: 3812345678
Saldo: 5000000
Verifikasi data
PIN: 123456

Halo johanbernardd, Menu:
1. Beli barang
2. Top-up
3. Keluar
Pilihan menu: 1
Total Harga: 1500000
3575000.0
2150000.0
Saldo anda sekarang diatas!
Transaksi berhasil!

Halo johanbernardd, Menu:
1. Beli barang
2. Top-up
3. Keluar
Pilihan menu: 3
Terima kasih
PS C:\Users\Lenovo\.vscode\johanbernardd>
```