

**OBJECT ORIENTED PROGRAMMING LABORATORY WORK**

**MODULE 3**



**CREATED BY :**

**KURNIAWAN BAGASKARA**

**L200214253**

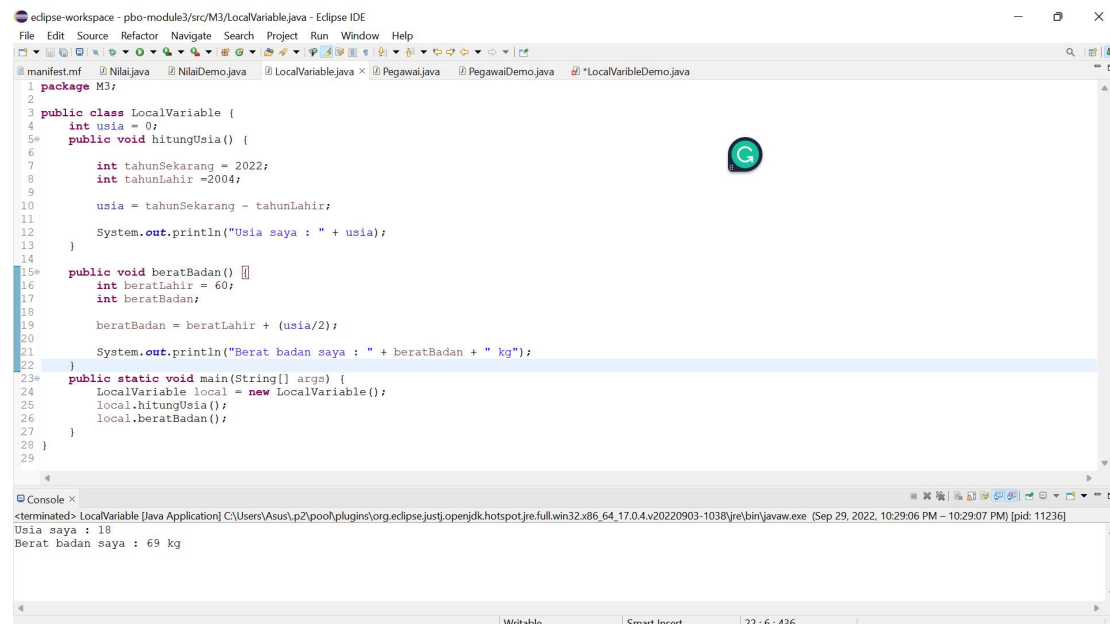
**INFORMATICS STUDY PROGRAM**

**FACULTY OF COMMUNICATION AND INFORMATION SCIENCE**

**MUHAMMADIYAH SURAKARTA UNIVERSITY**

## Exercise 1

1. Create a new method to calculate body weight with the name `void bodyweight()`, and in that method there is a local variable `Birthweight`.



```
1 package M3;
2
3 public class LocalVariable {
4     int usia = 0;
5     public void hitungUsia() {
6
7         int tahunSekarang = 2022;
8         int tahunLahir = 2004;
9
10        usia = tahunSekarang - tahunLahir;
11
12        System.out.println("Usia saya : " + usia);
13    }
14
15    public void beratBadan() {
16        int beratLahir = 60;
17        int beratBadan;
18
19        beratBadan = beratLahir + (usia/2);
20
21        System.out.println("Berat badan saya : " + beratBadan + " kg");
22    }
23    public static void main(String[] args) {
24        LocalVariable local = new LocalVariable();
25        local.hitungUsia();
26        local.beratBadan();
27    }
28 }
29
```

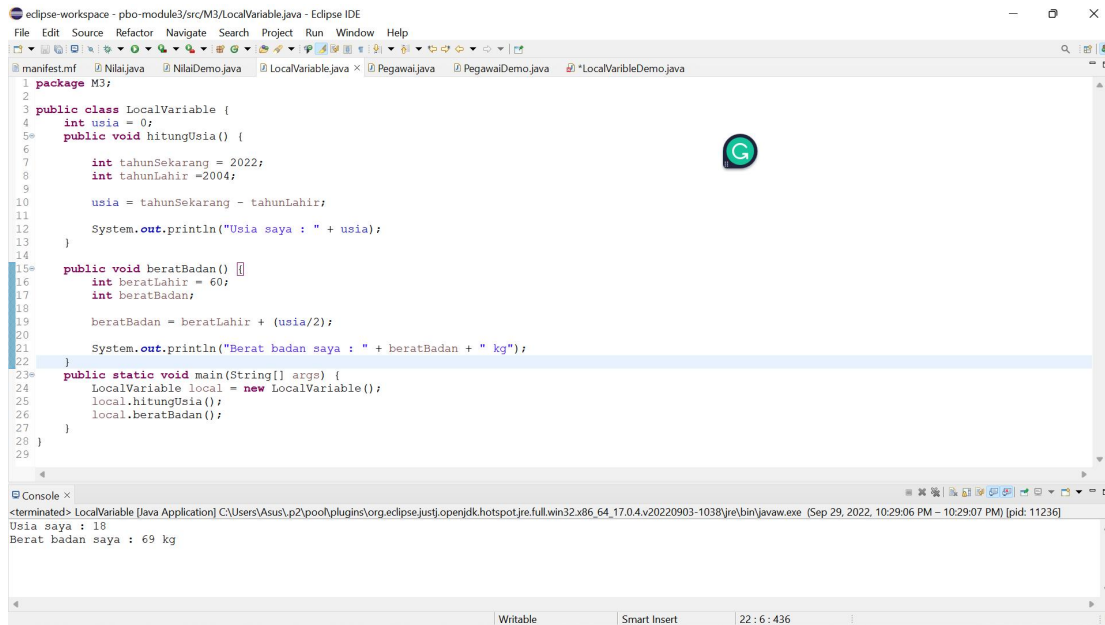
Console Output:

```
<terminated> LocalVariable [Java Application] C:\Users\Asus\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full\win32\x86_64_17.0.4.v20220903-1038\jre\bin\javaw.exe (Sep 29, 2022, 10:29:06 PM - 10:29:07 PM) [pid: 11236]
Usia saya : 18
Berat badan saya : 69 kg
```

2. Can the value of the age variable be called from the `void Bodyweight()` method? You can't, because the age variable is a local variable. So, it can only be called the `countAge()` method.

## Exercise 2

1. Modify the `LocalVariable` class by adding a global variable to hold the value of age.



The screenshot shows the Eclipse IDE interface. The main editor displays a Java file named `LocalVariable.java` with the following code:

```
1 package M3;
2
3 public class LocalVariable {
4     int usia = 0;
5     public void hitungUsia() {
6
7         int tahunSekarang = 2022;
8         int tahunLahir = 2004;
9
10        usia = tahunSekarang - tahunLahir;
11
12        System.out.println("Usia saya : " + usia);
13    }
14
15    public void beratBadan() {
16        int beratLahir = 60;
17        int beratBadan;
18
19        beratBadan = beratLahir + (usia/2);
20
21        System.out.println("Berat badan saya : " + beratBadan + " kg");
22    }
23    public static void main(String[] args) {
24        LocalVariable local = new LocalVariable();
25        local.hitungUsia();
26        local.beratBadan();
27    }
28 }
29
```

The console output at the bottom shows the results of the program execution:

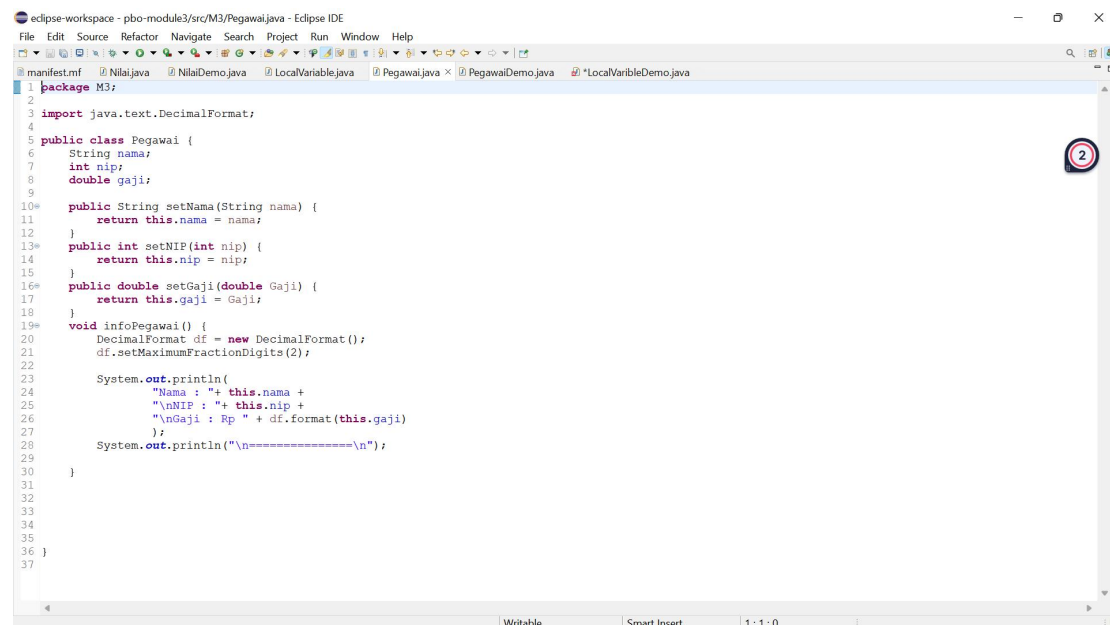
```
<terminated> LocalVariable [Java Application] C:\Users\Asus\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038\jre\bin\javaw.exe (Sep 29, 2022, 10:29:06 PM - 10:29:07 PM) [pid: 11236]
Usia saya : 18
Berat badan saya : 69 kg
```

## 2. Analysis of results:

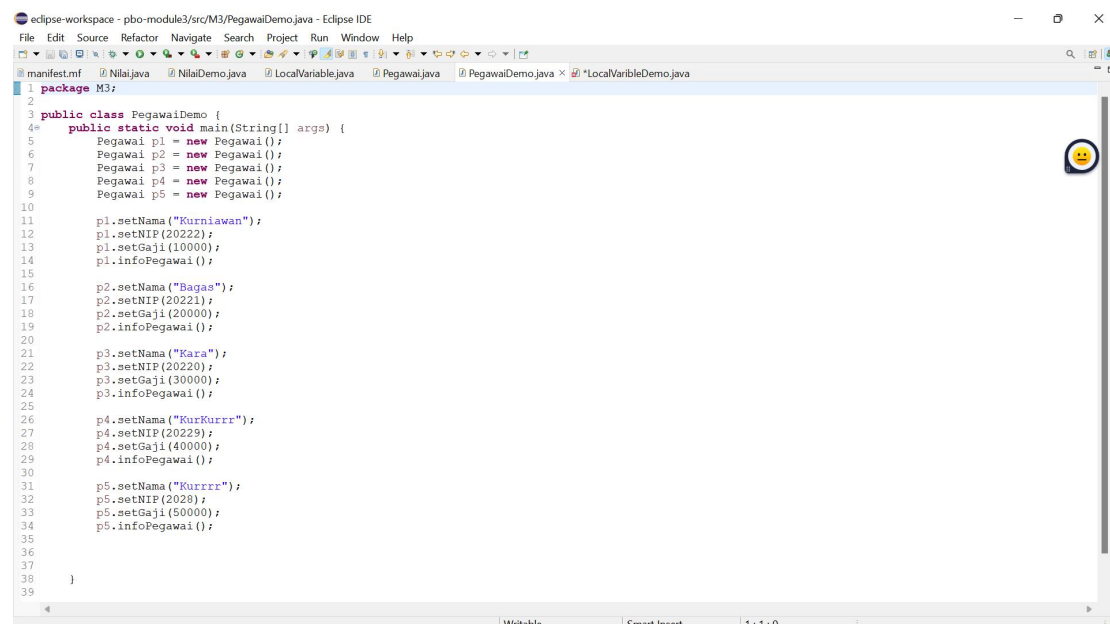
The result after executing is that now the weight method can access the age variable and can run the output, because the variable is a global variable, so it can be used in any method.

## Exercise 3

### 1. Completing the Program8 code by adding methods that have parameters and creating 5 employee objects with different names, nip, and salaries.



```
1 package M3;
2
3 import java.text.DecimalFormat;
4
5 public class Pegawai {
6     String nama;
7     int nip;
8     double gaji;
9
10    public String setNama(String nama) {
11        return this.nama = nama;
12    }
13    public int setNIP(int nip) {
14        return this.nip = nip;
15    }
16    public double setGaji(double Gaji) {
17        return this.gaji = Gaji;
18    }
19    void infoPegawai() {
20        DecimalFormat df = new DecimalFormat();
21        df.setMaximumFractionDigits(2);
22
23        System.out.println(
24            "Nama : " + this.nama +
25            "\nNIP : " + this.nip +
26            "\nGaji : Rp " + df.format(this.gaji)
27        );
28        System.out.println("\n=====n");
29    }
30 }
31
32
33
34
35
36 }
37
```



```
1 package M3;
2
3 public class PegawaiDemo {
4     public static void main(String[] args) {
5         Pegawai p1 = new Pegawai();
6         Pegawai p2 = new Pegawai();
7         Pegawai p3 = new Pegawai();
8         Pegawai p4 = new Pegawai();
9         Pegawai p5 = new Pegawai();
10
11         p1.setNama("Kurniawan");
12         p1.setNIP(20222);
13         p1.setGaji(10000);
14         p1.infoPegawai();
15
16         p2.setNama("Bagas");
17         p2.setNIP(20221);
18         p2.setGaji(20000);
19         p2.infoPegawai();
20
21         p3.setNama("Kara");
22         p3.setNIP(20220);
23         p3.setGaji(30000);
24         p3.infoPegawai();
25
26         p4.setNama("KurKurrr");
27         p4.setNIP(20229);
28         p4.setGaji(40000);
29         p4.infoPegawai();
30
31         p5.setNama("Kurrrrr");
32         p5.setNIP(2028);
33         p5.setGaji(50000);
34         p5.infoPegawai();
35
36
37     }
38 }
39
```

The screenshot shows the Eclipse IDE with the file `PegawaiDemo.java` open. The code is as follows:

```
1 package M3;
2
3 public class PegawaiDemo {
4
5 }
6 }
```

The console output shows the execution of the program, displaying employee data for five different employees:

```
<terminated> PegawaiDemo [Java Application] C:\Users\Asus\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64.17.0.4.v20220903-1038\jre\bin\javaw.exe (Sep 29, 2022, 10:45:38 PM - 10:45:39 PM) [pid: 9636]
Nama : Kurniawan
NIP : 20222
Gaji : Rp 10,000
=====
Nama : Bagas
NIP : 20221
Gaji : Rp 20,000
=====
Nama : Kara
NIP : 20220
Gaji : Rp 30,000
=====
Nama : KurKurrr
NIP : 20229
Gaji : Rp 40,000
=====
Nama : Kurrrrr
NIP : 20288
Gaji : Rp 50,000
=====
```

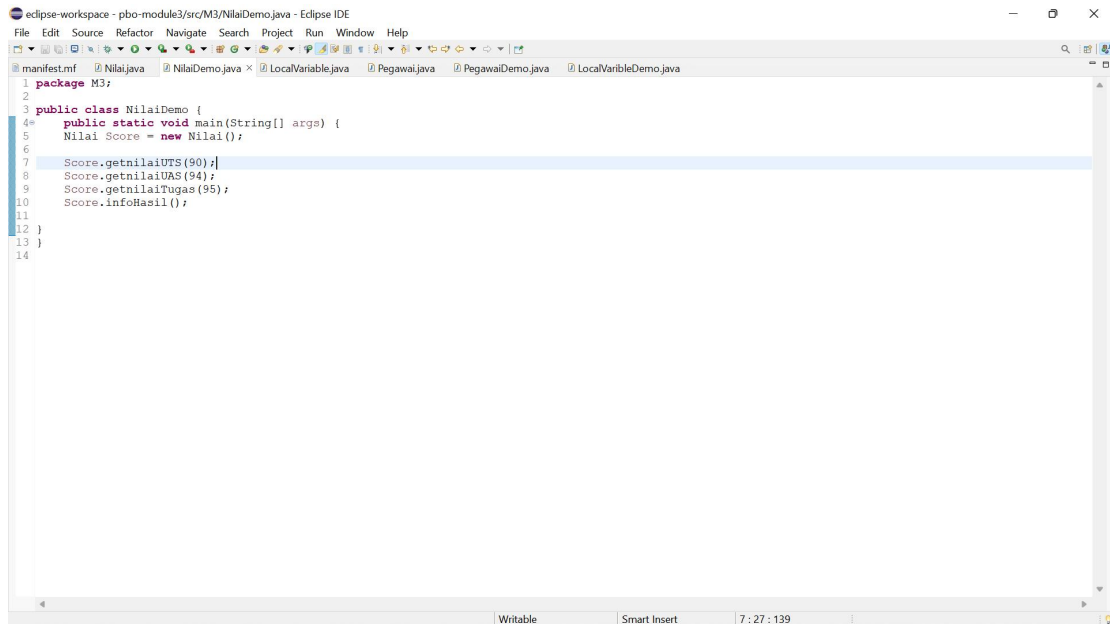
## Homework

**1. Completing the code in program10 by adding a void method and a return method, which returns the value of each parameter of the void method, and changes the data type from int to double and adds a double variable valueTotal.**

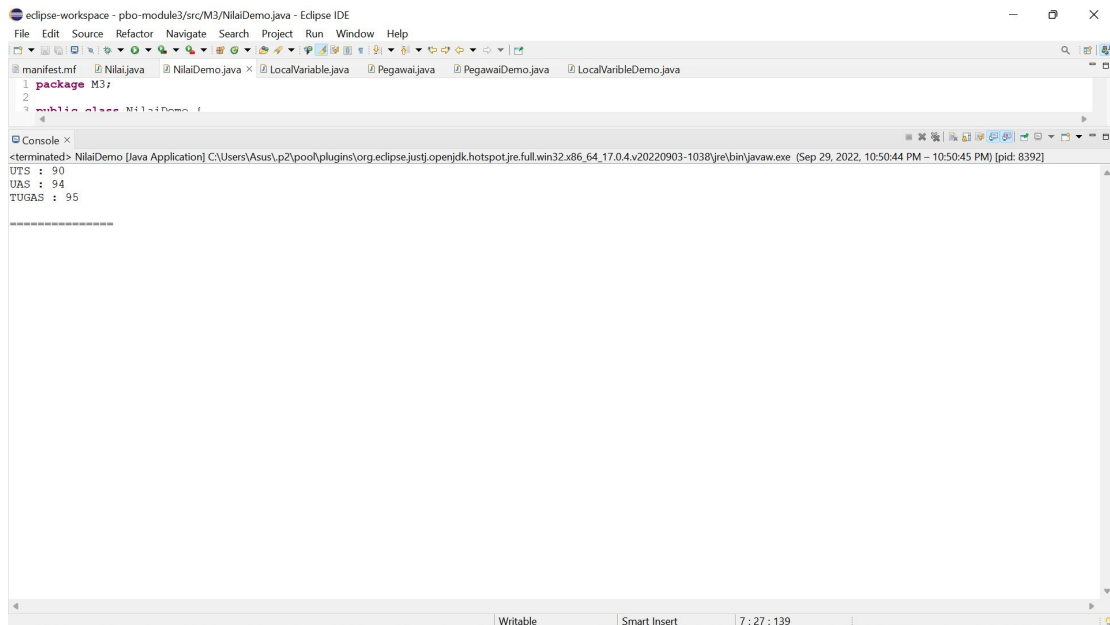
The screenshot shows the Eclipse IDE with the file `Nilai.java` open. The code is as follows:

```
1 package M3;
2
3
4 public class Nilai {
5     int nilaiUTS;
6     int nilaiUAS;
7     int nilaiTugas;
8
9     public int getnilaiUTS(int nilaiUTS) {
10         return this.nilaiUTS = nilaiUTS;
11     }
12     public int getnilaiUAS(int nilaiUAS) {
13         return this.nilaiUAS = nilaiUAS;
14     }
15     public int getnilaiTugas(int nilaiTugas) {
16         return this.nilaiTugas = nilaiTugas;
17     }
18
19     void infoHasil() {
20
21         System.out.println(
22             "UTS : " + this.nilaiUTS + "\n"
23             "UAS : " + this.nilaiUAS + "\n"
24             "TUGAS : " + this.nilaiTugas + "\n"
25             "=====");
26     }
27 }
28
29
30 }
```

A red circle with the number 1 is placed over line 22, highlighting the start of the `infoHasil()` method's output string.



```
1 package M3;
2
3 public class NilaiDemo {
4     public static void main(String[] args) {
5         Nilai Score = new Nilai();
6
7         Score.getNilaiUTS(90);
8         Score.getNilaiUAS(94);
9         Score.getNilaiTugas(95);
10        Score.infoHasil();
11    }
12 }
13 }
14 }
```



```
<terminated> NilaiDemo [Java Application] C:\Users\Asus\AppData\Local\Temp\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038\jre\bin\javaw.exe (Sep 29, 2022, 10:50:44 PM - 10:50:45 PM) [pid: 8392]
UTS : 90
UAS : 94
TUGAS : 95
```

**2. Change the data type from int to double and add one variable double nilaiTotal, then calculate the nilaiTotal with the following formula:**

$$\text{nilaiTotal} = (\text{nilaiUTS} + \text{nilaiUAS} + \text{nilaiTugas}) / 3$$

eclipse-workspace - pbo-module3/src/M3/Nilai.java - Eclipse IDE

```
File Edit Source Refactor Navigate Search Project Run Window Help
manifest.mf Nilai.java x NilaiDemo.java LocalVariable.java Pegawai.java PegawaiDemo.java LocalVariableDemo.java
1 package M3;
2 public class Nilai {
3     double nilaiUTS;
4     double nilaiUAS;
5     double nilaiTugas;
6     double nilaiTotal;
7
8     public double getNilaiUTS(double nilaiUTS){
9         return this.nilaiUTS = nilaiUTS;
10    }
11    public double getNilaiUAS(double nilaiUAS){
12        return this.nilaiUAS = nilaiUAS;
13    }
14    public double getNilaiTugas(double nilaiTugas){
15        return this.nilaiTugas = nilaiTugas;
16    }
17    public double getNilaiTotal(double nilaiTotal){
18        return this.nilaiTotal = (nilaiUTS + nilaiUAS + nilaiTugas)/3;
19    }
20
21    void getHasil() {
22        System.out.println(
23            "=====NILAI===== " + "\n" +
24            "Nilai UTS      : " + this.nilaiUTS + "\n" +
25            "Nilai UAS       : " + this.nilaiUAS + "\n" +
26            "Nilai Tugas      : " + this.nilaiTugas + "\n" +
27            "Nilai Total      : " + nilaiTotal + "\n"
28        );
29    }
30 }
31
32
33
34
35
36
```

Writable Smart Insert 4:21:71

eclipse-workspace - pbo-module3/src/M3/NilaiDemo.java - Eclipse IDE

```
File Edit Source Refactor Navigate Search Project Run Window Help
manifest.mf Nilai.java x NilaiDemo.java LocalVariable.java Pegawai.java PegawaiDemo.java LocalVariableDemo.java
1 package M3;
2
3 public class NilaiDemo {
4     public static void main(String[] args) {
5         Nilai Score = new Nilai();
6
7         Score.getNilaiUTS(90);
8         Score.getNilaiUAS(84);
9         Score.getNilaiTugas(95);
10        Score.getNilaiTotal(0);
11        Score.getHasil();
12    }
13 }
14
15
```

Writable Smart Insert 15:1:247

