Nama   : Restu Lestari Mulianingrum
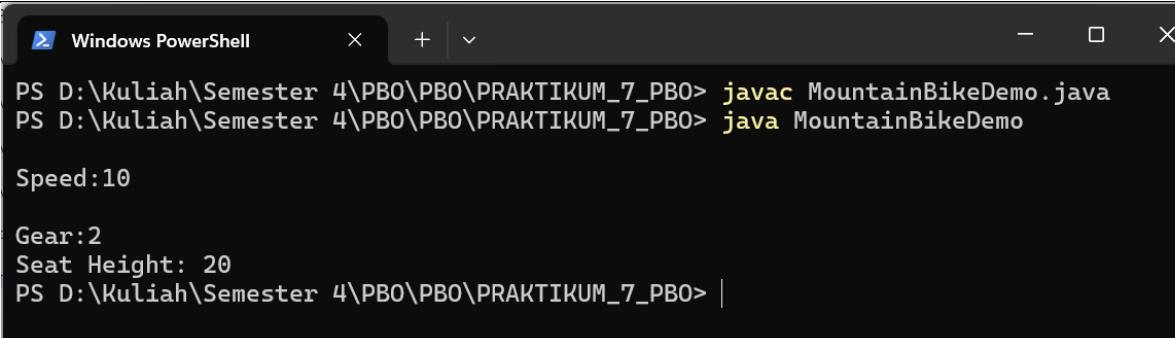
NIM   : A11.2022.14668

Kelompok   : A11.4415

PRAKTIKUM 7

Turunan (Inheritance)

Bicycle.java

```java
class Bicycle {
    int speed = 0;
    int gear = 0;

    // method
    void changeGear(int newValue) {
        gear = gear + newValue;
        System.out.println(" \nGear:" + gear);
    }

    void speedUp(int increment) {
        speed = speed + increment;
        System.out.println(" \nSpeed:" + speed);
    }
}
```

MountainBike.java

```java
class MountainBike extends Bicycle {
    int seatHeight;

    public void setHeight(int newValue) {
        seatHeight = newValue;
        System.out.println("Seat Height: "+seatHeight);
    }
}

class MountainBikeDemo {
    public static void main(String[] args) {
        // Membuat object
        MountainBike mbike = new MountainBike();
        // Memanggil method di object
        mbike.speedUp(10);
        mbike.changeGear(2);
        mbike.setHeight(20);
```

`        }`
`    }`
`}`

MountainBikeDemo.java

```java
class MountainBikeDemo {
    public static void main(String[] args) {
        // Membuat object
        MountainBike mbike = new MountainBike();
        // Memanggil method di object
        mbike.speedUp(10);
        mbike.changeGear(2);
        mbike.setHeight(20);
    }
}
```

Output

```
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> javac MountainBikeDemo.java
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> java MountainBikeDemo

Speed:10

Gear:2
Seat Height: 20
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO>
```

Tes Turunan

TestTurunan.java

```java
class Satu {
    Satu() {
        System.out.println("Satu....");
    }
}

class Dua extends Satu {
    Dua() {
        System.out.println("Dua....");
    }
}

class Tiga extends Dua {
    Tiga() {
        System.out.println("Tiga....");
    }
}
```
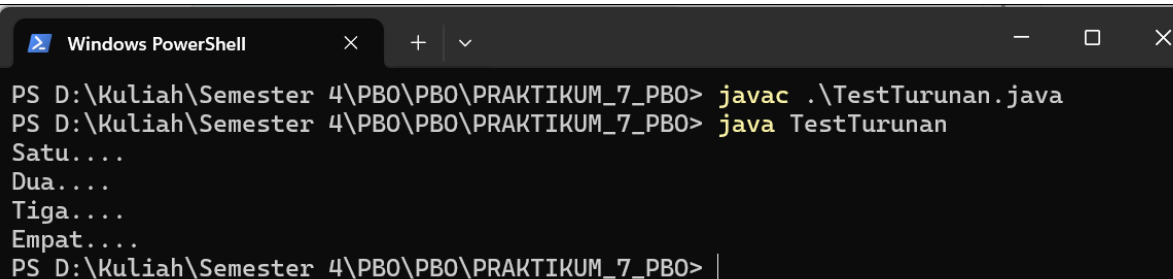
```java
class Empat extends Tiga {
    Empat() {
        System.out.println("Empat....");
    }
}


public class TestTurunan {
    public static void main(String[] args) {
        new Empat();
    }
}
```

Output

```
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> javac .\TestTurunan.java
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> java TestTurunan
Satu....
Dua....
Tiga....
Empat....
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO>
```

TestTurunan2.java

```java
class Satu {
    Satu(String s) {
        System.out.println("Satu...." + s);
    }
}

class Dua extends Satu {
    Dua(String s) {
        super(s);
        System.out.println("Dua....");
    }
}

class Tiga extends Dua {
    Tiga(String s) {
        super(s);
        System.out.println("Tiga....");
    }
}

class Empat extends Tiga {
    Empat(String s) {
```
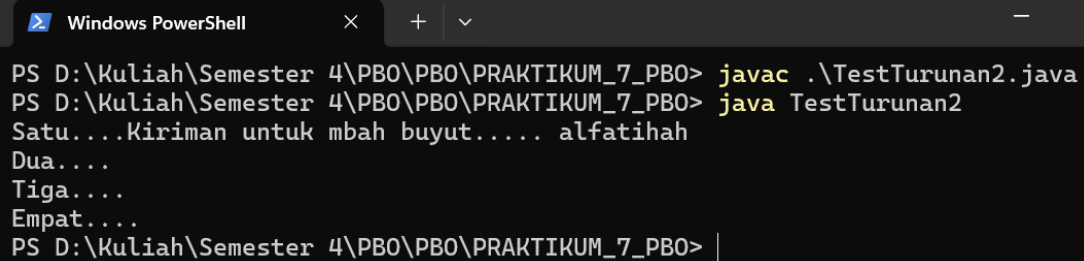
```java
        super(s);
        System.out.println("Empat....");
    }
}

public class TestTurunan2 {
    public static void main(String[] args) {
        new Empat("Kiriman untuk mbah buyut..... alfatihah");
    }
}
```

<div align="center">

Output

</div>

```
Windows PowerShell                                    —  ☐  ✕

PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> javac .\TestTurunan2.java
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> java TestTurunan2
Satu....Kiriman untuk mbah buyut..... alfatihah
Dua....
Tiga....
Empat....
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO>
```

Latihan 1

<div align="center">

Mobil2.java

</div>

```java
public class Mobil2 {
    int roda = 4;
    int body = 1;
    static int mesin = 1;
    String warna;

    static void maju() {
        System.out.println("Maju.....");
    }

    void mundur() {
        System.out.println("Mundur.....");
    }

    void belok() {
        System.out.println("Belok.....");
    }

    void hidupkanMobil() {
        System.out.println("Hidupkan Mobil  : " + warna);
```

```
    }

    void matikanMobil() {
        System.out.println("Matikan Mobil   : " + warna);
    }

    void ubahGigi() {
        System.out.println("Ubah Gigi   : " + warna);
    }
}
```

Mobil2BMW.java	Mobil2MBWDemo.java
| ```java
public class Mobil2BMW extends Mobil2
{
    public void nontonTV() {
        System.out.println("TV
dihidupkan");
        System.out.println("TV mencari
channel");
        System.out.println("TV
menampilkan gambar");
    }

}
``` | ```java
public class Mobil2BMWDemo {
    public static void main(String[]
args) {
        Mobil2BMW BMW = new
Mobil2BMW();
        BMW.warna = "Merah";

        BMW.hidupkanMobil();
        BMW.nontonTV();
        BMW.ubahGigi();
        BMW.matikanMobil();
    }
}
``` |

Output

```
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> javac Mobil2BMWDemo.java
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> java Mobil2BMWDemo
Hidupkan Mobil  : Merah
TV dihidupkan
TV mencari channel
TV menampilkan gambar
Ubah Gigi       : Merah
Matikan Mobil   : Merah
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO>
```

Latihan 2

Code Karyawan.java

```java
import java.io.*;

public class Karyawan {
    String nip, nama;
    int sts_peg;

    void inputKar() throws IOException {
```

```java
        BufferedReader br = new BufferedReader(new
InputStreamReader(System.in));
        System.out.println("Data karyawan");
        System.out.print("NIP    : ");
        nip = br.readLine();
        System.out.print("Nama   : ");
        nama = br.readLine();
        System.out.print("Status Pegawai     : ");
        sts_peg = Integer.parseInt(br.readLine());
    }
}
```

Code KaryawanTetap.java

```java
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;

public class KaryawanTetap extends Karyawan {
    double gapok;
    int jml_anak;

    void inputTetap() throws IOException {
        BufferedReader br = new BufferedReader(new
InputStreamReader(System.in));
        System.out.println("---------- Karyawan Tetap ----------");
        System.out.print("Gaji Pokok : ");
        gapok = Double.parseDouble(br.readLine());
        System.out.print("Jumlah Anak : ");
        jml_anak = Integer.parseInt(br.readLine());
    }

    double totalGaji() {
        return gapok + (jml_anak * (0.1 * gapok));
    }
}
```

Code KaryawanKontrak.java

```java
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;

public class KaryawanKontrak extends Karyawan {
    double upah_harian;
    int jml_anak, hari_masuk;

    void inputKontrak() throws IOException {
        BufferedReader br = new BufferedReader(new
InputStreamReader(System.in));
```

```java
        System.out.println("---------- Karyawan Kontrak ----------");
        System.out.println("Upah Harian : ");
        upah_harian = Double.parseDouble(br.readLine());
        System.out.print("Jumlah Masuk : ");
        hari_masuk = Integer.parseInt(br.readLine());
        System.out.print("Jumlah Anak : ");
        jml_anak = Integer.parseInt(br.readLine());


    }


    double totalUpah() {
        return (hari_masuk * upah_harian) + (jml_anak * (0.1 * (hari_masuk *
upah_harian)));
    }
}
```

Code KaryawanDemo.java

```java
import java.io.*;
import java.text.DecimalFormat;

public class KaryawanDemo {
    public static void main(String[] args) throws IOException {
        DecimalFormat df = new DecimalFormat("###, ###, ##0.00");
        Karyawan kar = new Karyawan();
        KaryawanTetap tetap = new KaryawanTetap();
        KaryawanKontrak kontrak = new KaryawanKontrak();

        kar.inputKar();
        if (kar.sts_peg == 1) {
            tetap.inputTetap();
            System.out.println("Gaji Diterima : " +
df.format(tetap.totalGaji()));
        } else {
            kontrak.inputKontrak();
            System.out.println("Upah Diterima : " +
df.format(kontrak.totalUpah()));
        }
    }

}
```

Output

```
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> javac KaryawanDemo.java
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> java KaryawanDemo
Data karyawan
NIP              : 1234567
Nama             : Restu
Status Pegawai   : 1
---------- Karyawan Tetap ----------
Gaji Pokok       : 10000000
Jumlah Anak      : 1
Gaji Diterima    : 11,000,000.00
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO>
```

Latihan 3

Code GradeActivity.java

```java
public class GradeActivity {
    private double score;
    private String name;

    public GradeActivity() {
    };

    public GradeActivity(String n) {
        name = n;
    }

    public void setScore(double s) {
        score = s;
    }

    public double getScore() {
        return score;
    }

    public char getGrade(){
        if (score >= 70)
            return 'A';
        else
            return 'E';
    }
}
```

Code FinalExam.java

```java
public class FinalExam extends GradeActivity {
    private int numberOfQuestion;
    private int numberOfMiss;
    double poinsPerQuestion;

    public FinalExam(int questions, int missed ){
        numberOfQuestion = questions;
        numberOfMiss = missed;
    }
    public double getPointsPerQuestion(){
        return numberOfQuestion*poinsPerQuestion;
    }
    public int getNumberMissed(){
        return numberOfMiss;
    }

}
```
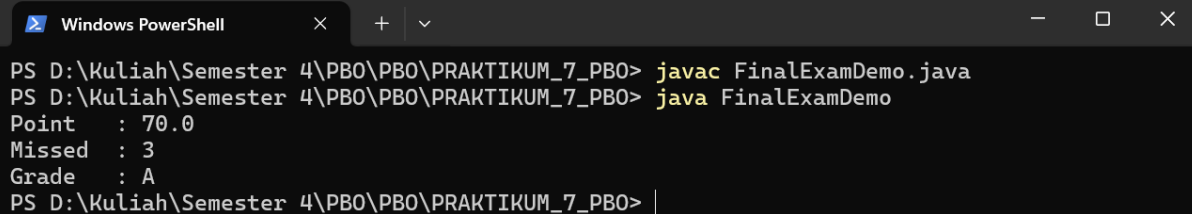
Code FinalExamDemo.java

```java
public class FinalExamDemo {
    public static void main(String[] args) {
        FinalExam fe = new FinalExam(7,3);
        fe.poinsPerQuestion = 10;
        System.out.println("Point   : " + fe.getPointsPerQuestion());
        System.out.println("Missed  : " +fe.getNumberMissed());
        fe.setScore(fe.getPointsPerQuestion());
        System.out.println("Grade   : " + fe.getGrade());
    }
}
```

Output

```
Windows PowerShell

PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> javac FinalExamDemo.java
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO> java FinalExamDemo
Point   : 70.0
Missed  : 3
Grade   : A
PS D:\Kuliah\Semester 4\PBO\PBO\PRAKTIKUM_7_PBO>
```