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MODUL 6

Single Inheritance

The screenshot shows the Apache NetBeans IDE interface. The top menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, and Help. The title bar says "Modul6 - Apache NetBeans IDE 11.1". The left sidebar has sections for Projects, Files, Services, and Navigator. The main workspace contains two code editors: one for "InheritanceTest.java" and another for "Programmer.java". The "InheritanceTest.java" editor shows a main method that creates a Programmer object and prints its salary. The "Programmer.java" editor shows the Programmer class extending Pegawai. The bottom status bar shows the output "schology (run) running 13.29 INS" and the system tray with icons for battery, signal, and date/time.

```
1 // To change this license header, choose License Headers in Project Properties.
2 // To change this template file, choose Tools | Templates
3 // and open the template in the editor.
4 /*
5  * package modul6;
6  */
7 /**
8  * @author Aezo27
9  */
10 public class Programmer extends Pegawai {
11     public static void main(String[] args) {
12         // TODO code application logic here
13         double lemburPerjam = 50000;
14         double gajiPerBulan;
15         Pegawai pegawai = new Pegawai();
16         gajiPerBulan = pegawai.gajiPokok + lemburPerjam;
17         System.out.println(gajiPerBulan);
18     }
19 }
20 
```

```
1 // To change this license header, choose License Headers in Project Properties.
2 // To change this template file, choose Tools | Templates
3 // and open the template in the editor.
4 /*
5  * package modul6;
6  */
7 /**
8  * @author Aezo27
9  */
10 public class Pegawai {
11     /**
12      * @param args the command line arguments
13     */
14     public void main(String[] args) {
15         double gajiPokok = 1000000;
16     }
17 }
18 
```

Hierarchical Inheritance

The screenshot shows the Apache NetBeans IDE interface. The top menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, and Help. The title bar says "Modul6 - Apache NetBeans IDE 11.1". The left sidebar has sections for Projects, Files, Services, and Navigator. The main workspace contains two code editors: one for "InheritanceTest.java" and another for "Teknisi.java". The "InheritanceTest.java" editor shows a main method that creates a Teknisi object and prints its salary. The "Teknisi.java" editor shows the Teknisi class extending Pegawai. The bottom status bar shows the output "schology (run) running... 9:18 INS" and the system tray with icons for battery, signal, and date/time.

```
1 // To change this license header, choose License Headers in Project Properties.
2 // To change this template file, choose Tools | Templates
3 // and open the template in the editor.
4 /*
5  * package modul6;
6  */
7 /**
8  * @author Aezo27
9  */
10 public class Teknisi extends Pegawai {
11     public static void main(String[] args) {
12         // TODO code application logic here
13         double lemburPerjam = 40000;
14         double gajiPerBulan;
15         Pegawai pegawai = new Pegawai();
16         gajiPerBulan = pegawai.gajiPokok + lemburPerjam;
17         System.out.println(gajiPerBulan);
18     }
19 }
20 
```

```
1 // To change this license header, choose License Headers in Project Properties.
2 // To change this template file, choose Tools | Templates
3 // and open the template in the editor.
4 /*
5  * package modul6;
6  */
7 /**
8  * @author Aezo27
9  */
10 public class Pegawai {
11     /**
12      * @param args the command line arguments
13     */
14     public void main(String[] args) {
15         double gajiPokok = 1000000;
16     }
17 }
18 
```

Multilevel Inheritance

The screenshot shows the Apache NetBeans IDE interface with four code editors open:

- Modul6.java**: Contains classes A, B, and C, each printing "Info dari Class A", "Info dari Class B", and "Info dari Class C" respectively.
- B.java**: Contains class B extending class A.
- C.java**: Contains class C extending class B.
- InheritanceTest.java**: A test class with static void main() that creates instances of A, B, and C and calls their respective message methods.

The Output panel shows the build log and the results of running the application, which output the expected hierarchical messages.

```
schology (run) | Modul6 (run) |
run:
Info dari Class A
Info dari Class B
Info dari Class A
Info dari Class C
Info dari Class B
Info dari Class A
BUILD SUCCESSFUL (total time: 0 seconds)
```

Latihan

The screenshot shows the Apache NetBeans IDE interface with four code editors open:

- Tugas.java**: Contains class Kendaraan with static variables tahunRakit, bahanBakar, and asalNegara.
- Pesawat.java**: Contains class Pesawat extending Kendaraan with additional variable warna.
- Mobil.java**: Contains class Mobil extending Kendaraan with additional variable warna.
- InheritanceTest.java**: A test class with static void main() that creates instances of Pesawat and Mobil and prints their details.

The Output panel shows the results of running the application, displaying the values for each variable.

```
schology (run) | running... | 1.1 | INS
schology (run) | running... | 15:47 | ENG 14/11/2019 |
```

The screenshot shows the Apache NetBeans IDE interface with three code editors open:

- Tugas.java**: Contains class Demo with static void main(). It creates instances of Mobil (aa) and Pesawat (bb), printing their properties.
- Demo.java**: Contains class Demo with static void main(). It creates instances of Mobil (aa) and Pesawat (bb), printing their properties.
- InheritanceTest.java**: A test class with static void main() that creates instances of Demo and prints their details.

The Output panel shows the results of running the application, displaying the values for each variable.

```
schology (run) | running... | 13.32 | INS
schology (run) | running... | 15:48 | ENG 14/11/2019 |
```

Hasil Output:

The screenshot shows the NetBeans IDE interface with the title bar "Modul6 - Apache NetBeans IDE 11.1". The code editor displays a Java file named "Demo.java" with the following content:

```
5  */
6  package latihan;
7  /**
8   * 
9   * @author Aezo27
10  */
11 public class Demo {
12     public static void main(String[] args) {
13         Mobil aa = new Mobil();
14         System.out.println("Negara : " + aa.osalNegara);
15         System.out.println("Bahan Bakar : " + aa.bahanBakar);
16         System.out.println("Tahun Rakit : " + aa.tahunRakit);
17     }
18 }
```

The output window shows the execution results:

```
run:
Negara : Indonesia
Bahan Bakar : Bensin
Tahun Rakit : 1999
Warna : Biru
=====
Negara : Indonesia
Bahan Bakar : Bensol
Tahun Rakit : 1999
Warna : Putih
=====
Warna Asli : Hitam
BUILD SUCCESSFUL (total time: 0 seconds)
```

Tugas

Bangun Datar:

The screenshot shows the NetBeans IDE interface with the title bar "KelompokSangar - Apache NetBeans IDE 11.1". The code editor displays a Java file named "BangunDatar.java" with the following content:

```
1 package Tugas;
2 public class BangunDatar {
3     protected double luas;
4     protected double keliling;
5
6     protected void hitungLuas(){
7     }
8     protected double hitungKeliling(){
9         return keliling;
10    }
11 }
```

Persegi:

The screenshot shows the NetBeans IDE interface with the title bar "KelompokSangar - Apache NetBeans IDE 11.1". The code editor displays a Java file named "Persegi.java" with the following content:

```
1 package Tugas;
2 public class Persegi extends BangunDatar{
3     protected double sisi;
4
5     @Override
6     protected void hitungLuas(){
7         super.luas = sisi*sisi;
8         System.out.println("luas Persegi : " + luas);
9     }
10
11     @Override
12     protected double hitungKeliling(){
13         super.keliling = (4*sisi);
14         System.out.println("keliling persegi : " + keliling);
15         return keliling;
16     }
17
18     public static void main(String[] args) {
19         Persegi persegi = new Persegi();
20
21         persegi.sisi=3;
22         persegi.hitungLuas();
23         persegi.hitungKeliling();
24     }
25 }
```

The output window shows the execution results:

```
run:
Luas Persegi : 9.0
Kelling persegi : 12.0
BUILD SUCCESSFUL (total time: 0 seconds)
```

Persegi Panjang:

The screenshot shows the Apache NetBeans IDE 11.1 interface. The title bar says "KelompokSangar - Apache NetBeans IDE 11.1". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like Open, Save, and Run. The top status bar shows "461.6537.0MB" and search fields. The bottom status bar shows "29.1 INS" and "14/11/2019". The code editor window contains the following Java code:

```
package Tugas;
public class PersegiPanjang extends BangunDatar{
    protected int panjang;
    protected double lebar;
    @Override
    protected void hitungLuas(){
        super.luas = panjang*lebar;
        System.out.println("Luas Persegi Panjang : " + luas);
    }
    @Override
    protected double hitungKeliling(){
        super.keliling = (panjang + panjang + Lebar + Lebar);
        System.out.println("Keliling Persegi Panjang : " + keliling);
        return keliling;
    }
    public static void main(String[] args) {
        PersegiPanjang A = new PersegiPanjang();
        A.panjang=10;
        A.lebar=5;
        A.hitungLuas();
        A.hitungKeliling();
    }
}
```

The Output window shows the results of running the program:

```
run:
Luas Persegi Panjang : 50.0
Keliling Persegi Panjang : 30.0
BUILD SUCCESSFUL (total time: 0 seconds)
```

Segitiga:

The screenshot shows the Apache NetBeans IDE 11.1 interface. The title bar says "KelompokSangar - Apache NetBeans IDE 11.1". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like Open, Save, and Run. The top status bar shows "257.6546.0MB" and search fields. The bottom status bar shows "22:37 ENG 14/11/2019". The code editor window contains the following Java code:

```
package Tugas;
public class Segitiga extends BangunDatar{
    protected double alas;
    protected double tinggi;
    @Override
    protected void hitungLuas(){
        super.luas = alas * tinggi / 2;
        System.out.println("Luas Segitiga : " + luas);
    }
    @Override
    protected double hitungKeliling(){
        super.keliling = (3*alas);
        System.out.println("Keliling Segitiga : " + keliling);
        return keliling;
    }
    public static void main(String[] args) {
        Segitiga C = new Segitiga();
        C.alas=16;
        C.tinggi=20;
        C.hitungLuas();
        C.hitungKeliling();
    }
}
```

The Output window shows the results of running the program:

```
run:
Luas Segitiga : 160.0
Keliling Segitiga : 48.0
BUILD SUCCESSFUL (total time: 0 seconds)
```

Segitiga Sama Sisi

The screenshot shows the Apache NetBeans IDE 11.1 interface. The title bar says "KelompokSangar - Apache NetBeans IDE 11.1". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like Open, Save, and Run. The top status bar shows "324.4546.0MB" and search fields. The bottom status bar shows "22:39 ENG 14/11/2019". The code editor window contains the following Java code:

```
package Tugas;
public class SegitigaSamaSisi extends Segitiga{
    protected double sisi;
    @Override
    protected void hitungLuas(){
        super.luas = sisi * sisi / 4 * 1.73205080756;
        System.out.println("Luas Segitiga Sama Sisi : " + luas);
    }
    @Override
    protected double hitungKeliling(){
        super.keliling = (3*sisi);
        System.out.println("Keliling Segitiga Sama Sisi : " + keliling);
        return keliling;
    }
    public static void main(String[] args) {
        SegitigaSamaSisi V = new SegitigaSamaSisi();
        V.sisi=9;
        V.hitungLuas();
        V.hitungKeliling();
    }
}
```

The Output window shows the results of running the program:

```
run:
Luas Segitiga Sama Sisi : 3.89711431701
Keliling Segitiga Sama Sisi : 27.0
BUILD SUCCESSFUL (total time: 0 seconds)
```

Segitiga Sama Kaki:

The screenshot shows the Apache NetBeans IDE 11.1 interface. The main window displays a Java class named `SegitigaSamaKaki` which extends `SegiTiga`. The code includes methods for calculating the area and perimeter, and a `main` method that creates an instance of `SegitigaSamaKaki` and prints its properties. The output window shows the results of running the program with specific values for side length and height.

```
package Tugas;
public class SegitigaSamaKaki extends SegiTiga{
    protected double sisiMiring;
    @Override
    protected void hitungLuas(){
        super.luas = alas * tinggi / 2;
        System.out.println("Luas Segitiga sama kaki : " + luas);
    }
    @Override
    protected double hitungKeliling(){
        super.keliling = (alas * 2 * sisiMiring);
        System.out.println("Keliling Segitiga sama kaki : " + keliling);
        return keliling;
    }
    public static void main(String[] args) {
        SegitigaSamaKaki s = new SegitigaSamaKaki();
        s.alas=16;
        s.tinggi=20;
        s.sisiMiring=3;
        s.hitungLuas();
        s.hitungKeliling();
    }
}
```

Output - KelompokSangar (run)

```
run:
Luas Segitiga sama kaki : 160.0
Keliling Segitiga sama kaki : 22.0
BUILD SUCCESSFUL (total time: 0 seconds)
```

Bottom status bar: 23:24 22:49 ENG 14/11/2019