Jobsheet 6[2]

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Class	TI 2i
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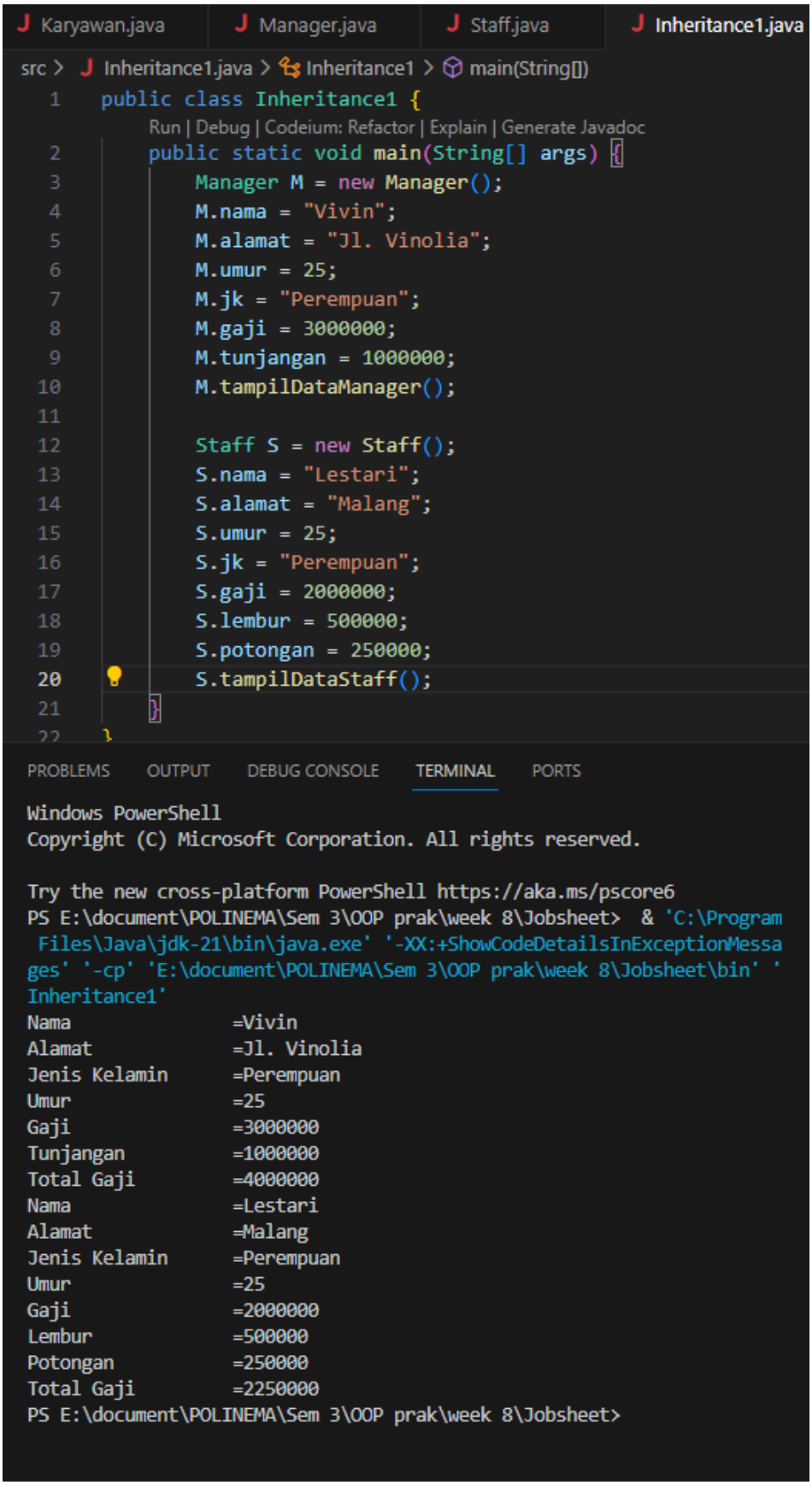
Subject	Object Oriented Programming
Type	Assignment
Semester	Semester 3
Time	@October 22, 2023

Experiment 1


Karyawan.java
Manager.java
Staff.java
Inheritance1.java
src > Inheritance1.java > Inheritance1 > main(String[])
public class Inheritance1 {
Run | Debug | Codeium: Refactor | Explain | Generate Javadoc
public static void main(String[] args) {
Manager M = new Manager();
M.nama = "Vivin";
M.alamat = "Jl. Vinolia";
M.umur = 25;
M.jk = "Perempuan";
M.gaji = 3000000;
M.tunjangan = 1000000;
M.tampilDataManager();
Staff S = new Staff();
S.nama = "Lestari";
S.alamat = "Malang";
S.umur = 25;
S.jk = "Perempuan";
S.gaji = 2000000;
S.lembur = 500000;
S.potongan = 250000;
S.tampilDataStaff();
}
}
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS E:\document\POLINEMA\Sem 3\OOP prak\week 8\Jobsheet> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'E:\document\POLINEMA\Sem 3\OOP prak\week 8\Jobsheet\bin' 'Inheritance1'
Nama =Vivin
Alamat =Jl. Vinolia
Jenis Kelamin =Perempuan
Umur =25
Gaji =3000000
Tunjangan =1000000
Total Gaji =4000000
Nama =Lestari
Alamat =Malang
Jenis Kelamin =Perempuan
Umur =25
Gaji =2000000
Lembur =500000
Potongan =250000
Total Gaji =2250000
PS E:\document\POLINEMA\Sem 3\OOP prak\week 8\Jobsheet>

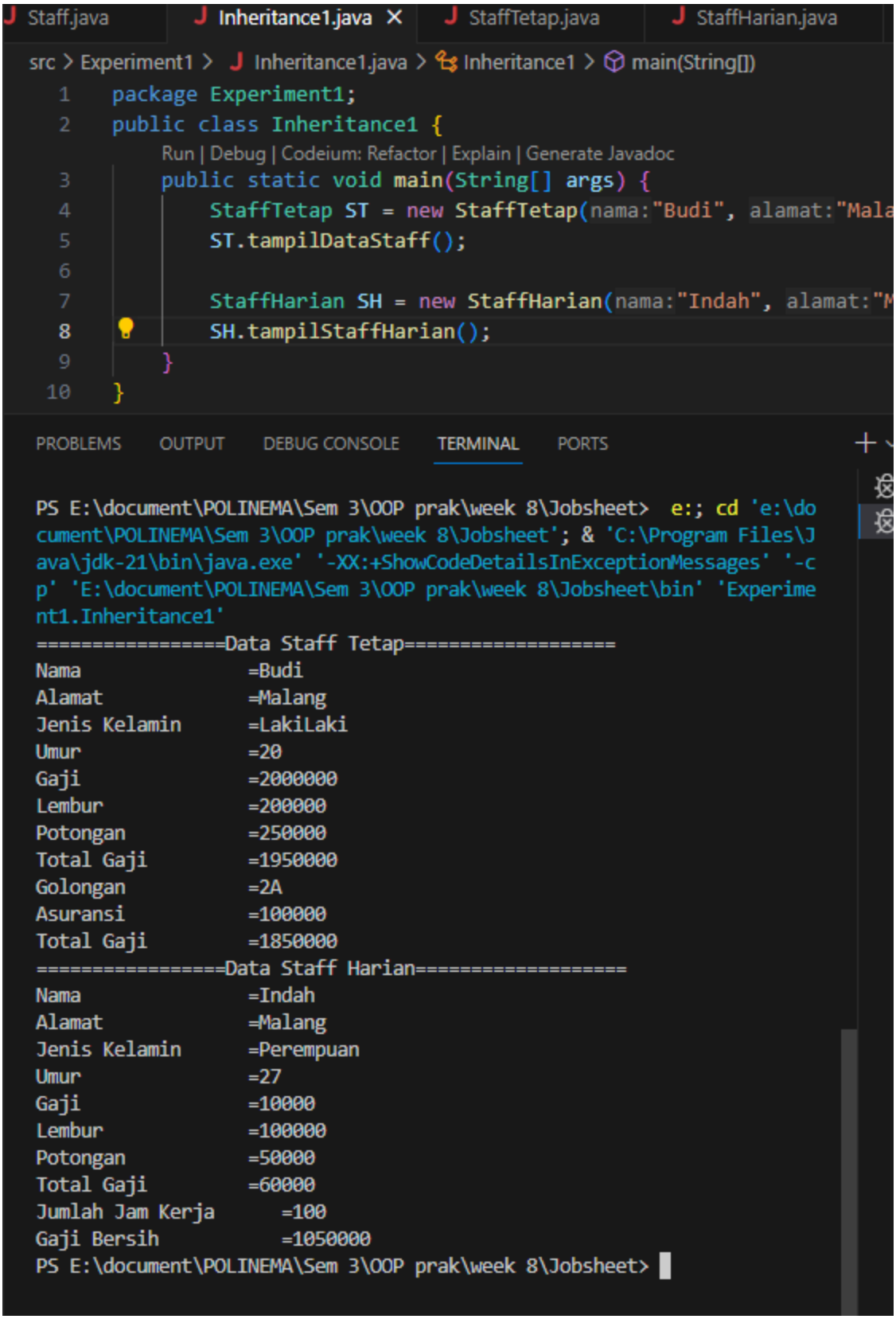
Question 1

1. Mention which classes are super classes and sub classes from experiment 1 above!
   - Super Class = Karyawan
   - Sub Class = Manager and Staff
2. What keywords are used to derive one class from another class?
   - We can use “extend” to derive one class from another class
3. Look at the program code in the Manager class, what attributes does this class have? Mention which attributes are inherited from the Employee class!
   - The Karyawan class only has one attribute, namely “tunjangan”. but this class also takes attributes of the Karyawan class, namely “gaji” and “tunjangan”.
4. Explain the super keyword in the program snippet below which is contained in the Manager class!

```
System.out.println("Total Gaji       ="+(super.gaji+tunjangan));
```

   - “super” is used to call the “gaji” and “tunjangan” attributes from the superclass(Karyawan class)
5. The program in experiment 1 above is included in what type of inheritance? Explain why!
   - Hierarchical Inheritance, because it has 2 subclasses both of which have the same superclass.

Experiment 2


Staff.java
Inheritance1.java
StaffTetap.java
StaffHarian.java
src > Experiment1 > Inheritance1.java > Inheritance1 > main(String[])
1 package Experiment1;
2 public class Inheritance1 {
Run | Debug | Codeium: Refactor | Explain | Generate Javadoc
3 public static void main(String[] args) {
4 StaffTetap ST = new StaffTetap(nama:"Budi", alamat:"Mala
5 ST.tampilDataStaff();
6
7 StaffHarian SH = new StaffHarian(nama:"Indah", alamat:"M
8 SH.tampilStaffHarian();
9 }
10 }
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
PS E:\document\POLINEMA\Sem 3\OOP prak\week 8\Jobsheet> e:; cd 'e:\document\POLINEMA\Sem 3\OOP prak\week 8\Jobsheet'; & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'E:\document\POLINEMA\Sem 3\OOP prak\week 8\Jobsheet\bin' 'Experiment1.Inheritance1'
==========Data Staff Tetap==========
Nama =Budi
Alamat =Malang
Jenis Kelamin =LakiLaki
Umur =20
Gaji =2000000
Lembur =200000
Potongan =250000
Total Gaji =1950000
Golongan =2A
Asuransi =100000
Total Gaji =1850000
==========Data Staff Harian==========
Nama =Indah
Alamat =Malang
Jenis Kelamin =Perempuan
Umur =27
Gaji =10000
Lembur =100000
Potongan =50000
Total Gaji =60000
Jumlah Jam Kerja =100
Gaji Bersih =1050000
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Question 2

1. Based on the classes above, which is a single inheritance and which is a multilevel inheritance?
   - Single Inheritance = Karyawan
   - Multilevel Inheritance = Staff
2. Look at the program code for the StaffTetap and StaffHarian classes, what attributes do these classes have? Mention which attributes are inherited from the Staff class!
   - Original Attributes = golongan, asuransi, and jmlJamKerja attributes
   - Inherited Attributes = nama, alamat, jk, umur, gaji, lembur, potongan
3. What is the function of the following program snippet in the StaffHarian class?

```
super(nama,alamat,jk,umur,gaji,lembur,potongan);
```

   - To get the attributes of the Staff class, consist of name, alamat, jk, umur, gaji, lembur, and potongan attributes.
4. What is the function of the following program snippet in the StaffHarian class?

```
super.tampilDataStaff();
```

   - To call the tampilDataStaff() method from the Staff class
5. Pay attention to the program code below which is contained in the StaffTetap class

```
System.out.println("Gaji Bersih     ="+(gaji+lembur-potongan-asuransi));
```

   Seen in the program section above, the gaji, lembur and potongan attributes can be accessed directly. Why does this happen and how does the StaffTetap class have the gaji, lembur and potongan attributes even though the gaji, lembur and potongan attributes are not declared in the class?
   - Because we have connected the StaffTetap to the superclass (Staff) by using “extends” keyword.

Assignment

- Komputer class

```java
package Exercise;

public class Komputer {
    String merk, jnsProsesor;
    int kecProsesor, sizeMemory;

    public Komputer(){

    }

    public Komputer(String merk, String jnsProsesor, int kecProsesor, int sizeMemory) {
        this.merk = merk;
        this.jnsProsesor = jnsProsesor;
        this.kecProsesor = kecProsesor;
        this.sizeMemory = sizeMemory;
    }

    Codeium: Refactor | Explain | Generate Javadoc
    public void tampilData(){
        System.out.println("Merk              =" + merk);
        System.out.println("Jenis Prosesor    =" + jnsProsesor);
        System.out.println("Kec Prosesor      =" + kecProsesor);
        System.out.println("Size Memory       =" + sizeMemory);
    }
}
```

- Leptop class

```java
package Exercise;

public class Leptop extends Komputer{
    String jnsBatrei;

    public Leptop(){

    }

    public Leptop(String merk, int kecProsesor, int sizeMemory, String jnsProsesor, String jnsBatrei) {
        super(merk, jnsProsesor, kecProsesor, sizeMemory);
        this.jnsBatrei = jnsBatrei;
    }

    Codeium: Refactor | Explain | Generate Javadoc
    public void tampilLaptop(){
        super.tampilData();
        System.out.println("Jenis Batrei      =" + jnsBatrei);
    }
}
```

- Pc class

```
package Exercise;

public class Pc extends Komputer{
    int ukuranMonitor;

    public Pc(){

    }

    public Pc(String merk, int kecProsesor, int sizeMemory, String jnsProsesor, int ukuranMonitor) {
        super(merk, jnsProsesor, kecProsesor, sizeMemory);
        this.ukuranMonitor = ukuranMonitor;
    }

    Codeium: Refactor | Explain | Generate Javadoc
    public void tampilPc(){
        super.tampilData();
        System.out.println("Ukuran Monitor      =" + ukuranMonitor);
    }
}
```

- Mac class

```
package Exercise;

public class Mac extends Leptop{
    String security;

    public Mac(){

    }

    public Mac(String merk, int kecProsesor, int sizeMemory, String jnsProsesor, String jnsBatrei, String security) {
        super(merk, kecProsesor, sizeMemory, jnsProsesor, jnsBatrei);
        this.security = security;
    }

    Codeium: Refactor | Explain | Generate Javadoc
    public void tampilMac(){
        super.tampilLaptop();
        System.out.println("Security          =" + security);
    }
}
```

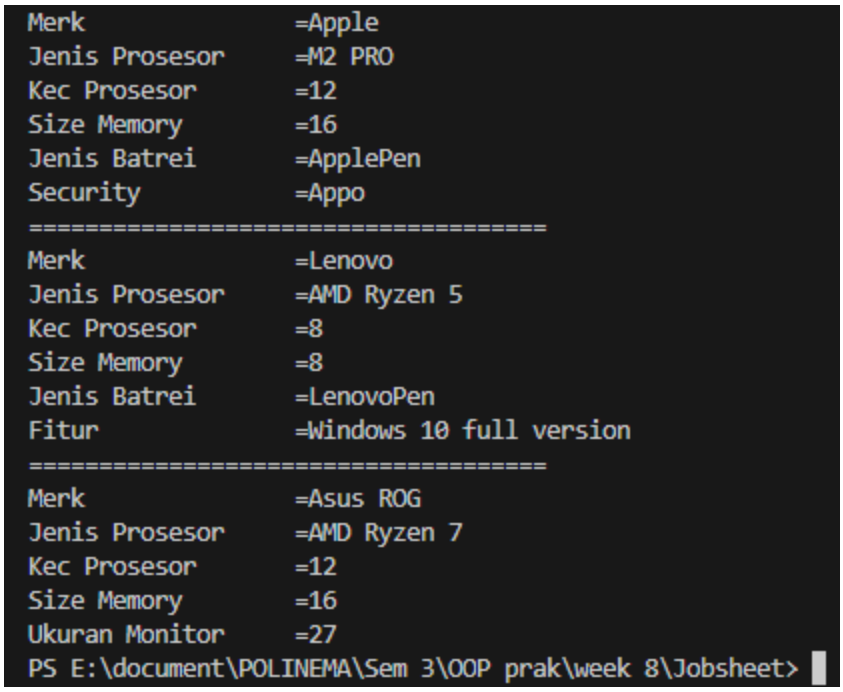
- Windows class

```java
package Exercise;

public class Windows extends Leptop{
    String fitur;

    public Windows(){

    }

    public Windows(String merk, int kecProsesor, int sizeMemory, String jnsProsesor, String jnsBatrei, String fitur) {
        super(merk, kecProsesor, sizeMemory, jnsProsesor, jnsBatrei);
        this.fitur = fitur;
    }

    Codeium: Refactor | Explain | Generate Javadoc
    public void tampilWindows(){
        super.tampilLaptop();
        System.out.println("Fitur              =" + fitur);
    }
}
```

- Main class

```java
package Exercise;

public class Main {
    Run | Debug | Codeium: Refactor | Explain | Generate Javadoc
    public static void main(String[] args) {
        Mac mac = new Mac(merk:"Apple", kecProsesor:12, sizeMemory:16, jnsProsesor:"M2 PRO", jnsBatrei:"ApplePen", security:"Appo");
        mac.tampilMac();

        System.out.println(x:"===================================");

        Windows windows = new Windows(merk:"Lenovo", kecProsesor:8, sizeMemory:8, jnsProsesor:"AMD Ryzen 5", jnsBatrei:"LenovoPen", fitur:"Windows 10 full version");
        windows.tampilWindows();

        System.out.println(x:"===================================");

        Pc pc = new Pc(merk:"Asus ROG", kecProsesor:12, sizeMemory:16, jnsProsesor:"AMD Ryzen 7", ukuranMonitor:27);
        pc.tampilPc();
    }
}
```

- Output


Merk =Apple
Jenis Prosesor =M2 PRO
Kec Prosesor =12
Size Memory =16
Jenis Batrei =ApplePen
Security =Appo
==========
Merk =Lenovo
Jenis Prosesor =AMD Ryzen 5
Kec Prosesor =8
Size Memory =8
Jenis Batrei =LenovoPen
Fitur =Windows 10 full version
==========
Merk =Asus ROG
Jenis Prosesor =AMD Ryzen 7
Kec Prosesor =12
Size Memory =16
Ukuran Monitor =27
PS E:\document\POLINEMA\Sem 3\OOP prak\week 8\Jobsheet>