

Job Sheet 2 OOP



Name: Steven Christian Susanto

NIM/Number: 2241720003/24

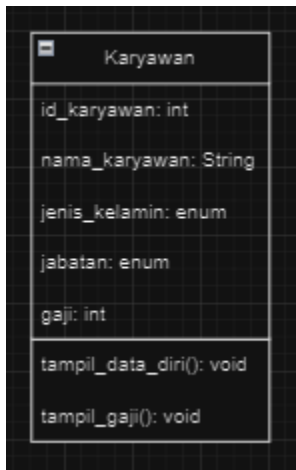
Class: 2I

Major: Information Technology

Study Program: D-IV Informatics Engineering

4.1 Experiment 1: Making Class Diagram

1. Draw a class diagram from case study 1!



2. Mention any classes that can be created from case study 1!
 - a. Karyawan
3. Mention attribute with the data type that can be identified from each class from class study 1!
 - a. id_karyawan: int
 - b. nama_karyawan: String
 - c. jenis_kelamin: enum
 - d. jabatan: enum
 - e. gaji: int
4. Mention every methods that you've made from each class in case study 1!
 - a. tampil_data_diri(): void
 - b. tampil_gaji(): void

4.2 Experiment 2: Making and access members of a class

```
[Running] cd "d:\PoltekPrac\New folder\" && javac TestMahasiswa.  
java && java TestMahasiswa  
Nim      : 101  
Nama     : Lestari  
Alamat  : Jl. Vinolia No 1A  
Kelas   : 1A  
  
[Done] exited with code=0 in 1.69 seconds
```

1. Explain which part of the attribute declaration process in the above program!

```
6      public int nim;  
7      public String nama;  
8      public String alamat;  
9      public String kelas;
```

2. Explain which part of the method declaration process in the program above!

```
11     public void tampilBiodata() {  
12         System.out.println("Nim      : " + nim);  
13         System.out.println("Nama     : " + nama);  
14         System.out.println("Alamat  : " + alamat);  
15         System.out.println("Kelas   : " + kelas);  
16     }
```

3. How many objects are instantiated in the program above!
 - a. There are 1 object in this program, which is "mhs1"
4. What is actually done in the syntax of the program "mhs1.nim=101"?
 - a. Assigning a value (101) to the nim attribute of mhs1 object.

5. What does the syntax of the program "mhs1.tampilBiodata()" actually do?

a. It outputs the personal data of the student(Mahasiswa).

6. Instantiate 2 more objects in the above program!

a. Code

```
10      Mahasiswa mhs2 = new Mahasiswa();
11      mhs2.nim = 102;
12      mhs2.nama = "Larry";
13      mhs2.alamat = "Jl. Vinolia No 2A";
14      mhs2.kelas = "1A";
15      mhs2.tampilBiodata();
16
17      Mahasiswa mhs3 = new Mahasiswa();
18      mhs3.nim = 103;
19      mhs3.nama = "Lester";
20      mhs3.alamat = "Jl. Vinolia No 3A";
21      mhs3.kelas = "2A";
22      mhs3.tampilBiodata();
```

b. Output

```
[Running] cd "d:\PoltekPrac\New folder\" && javac TestMahasiswa.
java && java TestMahasiswa
Nim      : 101
Nama     : Lestari
Alamat  : Jl. Vinolia No 1A
Kelas  : 1A
Nim      : 102
Nama     : Larry
Alamat  : Jl. Vinolia No 2A
Kelas  : 1A
Nim      : 103
Nama     : Lester
Alamat  : Jl. Vinolia No 3A
Kelas  : 2A

[Done] exited with code=0 in 0.899 seconds
```

4.3 Experiment 3: Writing method that has an argument/parameter and return

```
[Running] cd "d:\PoltekPrac\New folder\" && javac TestBarang.  
java && java TestBarang  
Nama Barang   : Pensil  
Jenis Barang  : ATK  
Stok          : 10  
Stok Baru adalah 30  
  
[Done] exited with code=0 in 1.472 seconds
```

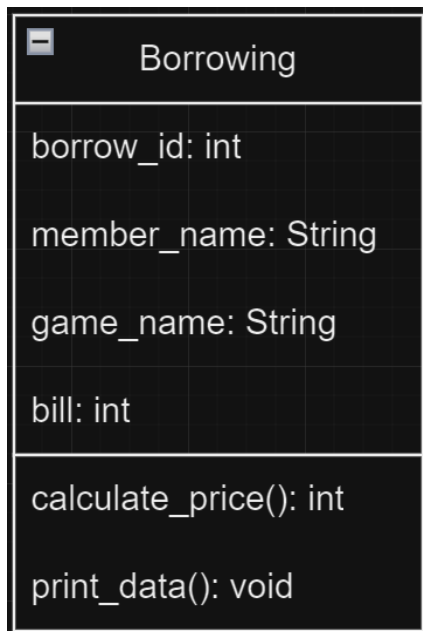
1. What is the function of an argument in a method?
 - a. An argument is used to pass 1 or more value to a method.
2. Draw conclusions about the use of the return keyword, and when a method should have a return!
 - a. I think we need to use a return in a method when we need a value back from that method to the block of code that called the method.

4.4 Tasks

1. A video game rental shop, one of the things that is processed is borrowing, where the data recorded when someone makes a loan is the id, name, and password. data that is recorded when someone borrows is id, member name, game name, and price to be paid. member, game name, and price to be paid. Each loan can display data on the results of borrowing and the price to be paid. Draw a class diagram for the case study above!

Explanation:

- a. The price to be paid is obtained from the length of the rental x the price.
- b. It is assumed that 1x game loan transaction is borrowed only 1 game.



2. Make a program from the class diagram that you've made in task 1!

a. Code

borrowing.java

```
public class borrowing {
    String member_name, game_name;
    int borrowing_id, bill;

    public borrowing(int id, String member, String game) {
        borrowing_id = id;
        member_name = member;
        game_name = game;
    }

    public void calculate_bill(int duration, int game_price) {
        bill = duration * game_price;
    }

    public void print_data() {
        System.out.println(
            "Borrowing ID: " + borrowing_id +
            "\nMember Name: " + member_name +
            "\nGame Name: " + game_name +
            "\nBill: " + bill);
    }
}
```

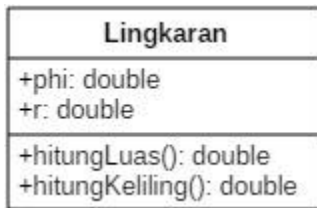
borrowMain.java

```
public class borrowMain {
    public static void main(String[] args) {
        borrowing borrow = new borrowing(1, "Sum1", "The
End");
        borrow.calculate_bill(2, 5000);
        borrow.print_data();
    }
}
```

b. Output

```
[Running] cd "d:\PoltekPrac\New folder (2)\Jobsheet2\" && javac  
borrowMain.java && java borrowMain  
Borrowing ID: 1  
Member Name: Sum1  
Game Name: The End  
Bill: 10000  
  
[Done] exited with code=0 in 0.744 seconds
```

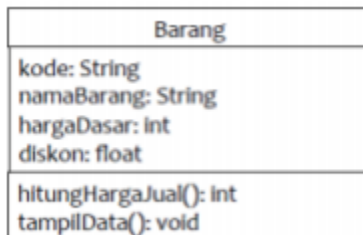

3. Make a program from the existing class diagram below:



a. Code

```
public class Lingkaran {  
    double phi, r;  
  
    public double hitungLuas() {  
        return phi * (r * r);  
    }  
  
    public double hitungKeliling() {  
        return 2 * (phi * r);  
    }  
}
```

4. Make a program from the existing class diagram below:



Description / Explanation:

- The value of the priceBase attribute in Rupiah and the discount attribute in %
- The calculateSalePrice() method is used to calculate the sale price with the following calculation:
selling price = base price - (discount x base price)
- Method performData() is used to display the values of code, itemName, base price, discount and sale price.

a. Code

```
public class Barang {  
    String kode, namaBarang;  
    int hargaDasar;  
    float diskon;  
  
    public int hitungHargaJual() {  
        return hargaDasar - (int) (diskon * hargaDasar);  
    }  
  
    public void tampilData() {  
        System.out.println(  
            "Kode: " + kode +  
            "\nNama Barang: " + namaBarang +  
            "\nHarga Dasar: Rp" + hargaDasar +  
            "\nDiskon: " + diskon * 100 + "%" +  
            "\nHarga Jual: " + hitungHargaJual());  
    }  
  
    public static void main(String[] args) {  
        Barang brg = new Barang();  
        brg.kode = "1";  
        brg.namaBarang = "Kaos";  
        brg.hargaDasar = 35000;  
        brg.diskon = 0.3f;  
        brg.tampilData();  
    }  
}
```

b. Output

```
[Running] cd "d:\PoltekPrac\New folder (2)\Jobsheet2\" && javac  
Barang.java && java Barang  
Kode: 1  
Nama Barang: Kaos  
Harga Dasar: Rp35000  
Diskon: 30.000002%  
Harga Jual: 24500
```

```
[Done] exited with code=0 in 0.972 seconds
```