

Lembar Jawab UTS Genap 2020/2021 Semester IV

1.a. Perbedaan atribut sebagai instance member vs class member

Instance Member	Class Member
<ul style="list-style-type: none"> • Atribut yang dimiliki oleh objek dari class yang sama. • Tiap objek memiliki instance member dan menyimpan nilainya tersendiri. • Beberapa objek yang berasal dari class yang sama, nilai instance membernya boleh sama boleh tidak. 	<ul style="list-style-type: none"> • Atribut yang dimiliki oleh semua objek yang berasal dari class yang sama. • Semua objek memiliki nilai class member yang sama. • Semua objek yang berasal dari class yang sama, nilai class membernya harus sama.

Contoh deklarasi dan pemanggilan:

Instance member:

```
class Titik {
    // atribut
    double absis;
    double ordinat;
    // metode
```

```
}
```

```
Titik a = new Titik ();
```

```
Titik b = new Titik ();
```

```
a.setAbsis (1);
```

```
a.setOrdinat(2);
```

```
b.setAbsis (3);
```

```
b.setOrdinat(4);
```

Class member:

```
static int getCounterTitik() {
```

```
    return counterTitik;
```

```
}
```

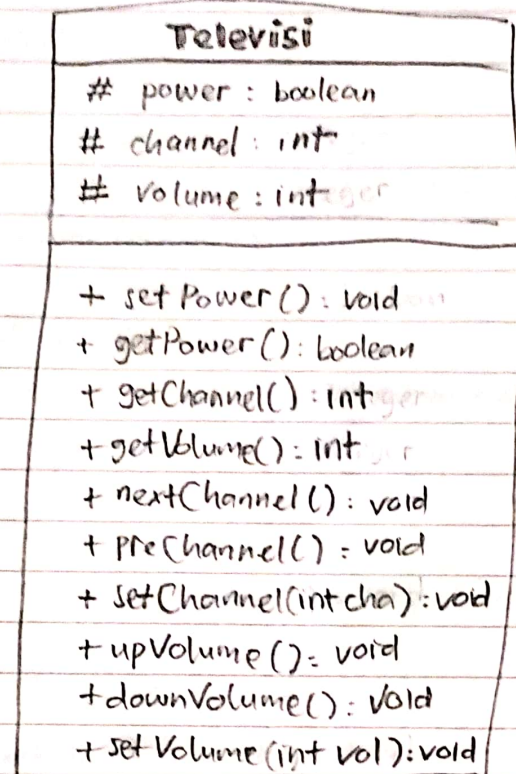
```
int x = counterTitik.getCounterTitik();
```

b. Signature konstruktor untuk kelas Poligon menggunakan Java

```
public class Poligon {
    protected int jumlahSisi;
    protected double absis;
    protected double ordinat;
    static int counterTitik;
    public int getJumlahSisi() {
        return this.jumlahSisi;
    }
    Poligon (double a, double o) {
        this.absis = a;
        this.ordinat = o;
        counterTitik++;
    }
}
```

Konstruktor

2. a. Class Diagram



b. Kode Program dalam Java

```
import java.util.Scanner;
```

```
public class Televisi {
```

```
    protected boolean power;
```

```
    protected int channel;
```

```
    protected int volume
```

```
    public Televisi() {
```

```
        power = false;
```

```
        channel = 0;
```

```
        volume = 0;
```

```
    }
```

```
    public void setPower() {
```

```
        if (!power) power = true;
```

```
        else power = false;
```

```
    }
```

```
    public boolean getPower() {
```

```
        return power;
```

```
    }
```

```
    public int getChannel() {
```

```
        return channel;
```

```
    }
```



```
public int getVolume() {  
    return volume;  
}
```

```
}  
public void nextChannel() {  
    if (channel < 12) channel = channel + 1;  
    else channel = 0;  
}
```

```
}  
public void preChannel() {  
    if (channel > 0) channel = channel - 1;  
    else channel = 12;  
}
```

```
}  
public void setChannel (int cha) {  
    if (cha >= 0 && cha <= 12) channel = cha;  
}
```

```
}  
public void upVolume() {  
    if (volume < 50) volume = volume + 1;  
}
```

```
}  
public void downVolume() {  
    if (volume > 0) volume = volume - 1;  
}
```

```
}  
public void setVolume (int vol) {  
    if (vol >= 0 && vol <= 50) volume = vol;  
}
```

```
}  
public void print() {  
    if (power) {  
        System.out.println ("Channel " + channel);  
        System.out.println ("Volume: " + volume);  
    }  
    else {  
        System.out.println ("TV mati");  
    }  
}
```

```
}  
}
```

```
}
```

```
}
```

3. Implementasi Bahasa Java

```
import java.util.Date;
```

```
public abstract class Manusia {
```

```
    protected String nama;
```

```
    protected Date tgl-mulai-kerja;
```

```
    protected String alamat;
```

```
    protected double pendapatan;
```

```
    protected static int counter Mns;
```

```
    public Manusia (String nama, Date tgl-mulai-kerja, String alamat,  
                    double pendapatan) {
```

```
        this.nama = nama;
```

```
        this.tgl-mulai-kerja = tgl-mulai-kerja;
```

```
        this.alamat = alamat;
```

```
        this.pendapatan = pendapatan;
```

```
        Manusia.counter Mns++;
```

```
    }
```

```
    public String getNama() {
```

```
        return this.nama;
```

```
    }
```

```
    public void setNama (String nama) {
```

```
        this.nama = nama;
```

```
    }
```

```
    public Date getTglMulaiKerja() {
```

```
        return this.tgl-mulai-kerja;
```

```
    }
```

```
    public void setTglMulaiKerja (Date tgl-mulai-kerja) {
```

```
        this.tgl-mulai-kerja = tgl-mulai-kerja;
```

```
    }
```

```
    public String getAlamat() {
```

```
        return this.alamat;
```

```
    }
```

```
    public void setAlamat (String alamat) {
```

```
        this.alamat = alamat;
```

```
    }
```

```
    public double getPendapatan() {
```

```
        return this.pendapatan;
```

```
    }
```



```
public void setPendapatan (double pendapatan) {  
    this.pendapatan = pendapatan;  
}
```

```
public void cetakInfo() {
```

```
    public abstract int hitungMasukKerja();  
}
```

```
public interface Pajak {  
    public double hitungPajak();  
}
```

```
public class PNS extends Manusia, implements Pajak {  
    private String nip;  
    private static int counterPNS;
```

```
    public void cetakInfo() {  
        super.cetakInfo();  
        this.nip = nip;  
        counterPNS++;  
    }
```

```
    public static int getCounterPNS() {  
        return counterPNS;  
    }
```

```
    public double hitungPajak() {  
        int a = 10/100 * this.pendapatan;  
        return a;  
    }
```

```
    public int hitungMasukKerja() {  
        int b = (date.now - this.tgl-mulai-kerja) + 1;  
        return b;  
    }
```

```
    PNS (String nama, date a, String b, double c, String nip) {  
        this.nama = nama;  
        this.tgl-mulai-kerja = a;  
        this.alamat = b;  
        this.pendapatan = c;  
        this.nip = nip;  
    }
```

```
PNS (String a, double b, String c) {
```

```
    this.nama = a;
```

```
    this.pendapatan = b;
```

```
    this.nip = c;
```

```
}
```

```
}  
public class Pengusaha extends Monevism, implementasi Pajak {
```

```
    private String nipwp;
```

```
    private static int counterPengusaha;
```

```
    public void cetakInfo() {
```

```
        super.cetakInfo();
```

```
        this.nipwp = nipwp;
```

```
        counterPengusaha++;
```

```
}
```

```
    public static int getCounterPengusaha() {
```

```
        return counterPengusaha;
```

```
}
```

```
    public double hitungPajak() {
```

```
        int a = 15/100 * this.pendapatan;
```

```
        return a;
```

```
}
```

```
    public int hitungMasukKerja() {
```

```
        int b = (date.now - this.tgl-mulai-kerja) + 9;
```

```
        return b;
```

```
}
```

```
Pengusaha (String a, date b, String c, double d, String e) {
```

```
    this.nama = a;
```

```
    this.tgl-mulai-kerja = b;
```

```
    this.alamat = c;
```

```
    this.pendapatan = d;
```

```
    this.nipwp = e;
```

```
}
```

```
}
```



```
public class Petani extends Manusia, implementasi Pajak {  
    private String asal-kota;  
    private static int counterPetani;
```

```
    public void cetakInfo() {  
        super cetakInfo();  
        this.asal-kota = asal-kota;  
        counterPetani++;  
    }
```

```
    public static int getCounterPetani() {  
        return counterPetani;  
    }
```

```
    public double hitungPajak() {  
        return 0;
```

```
    public int hitungMasaKerja() {  
        return ((date.now - this.tgl-mulai-kerja) + 0)
```

```
    Petani (String a, date b, String c, double d, String e) {  
        this.nama = a;  
        this.tgl-mulai-kerja = b;  
        this.alamat = c;  
        this.pendapatan = d;  
        this.asal-kota = e;  
    }
```

```
}
```