OBJECT ORIENTED PROGRAMMING
JOBSHEET 3 ENCAPSULATION

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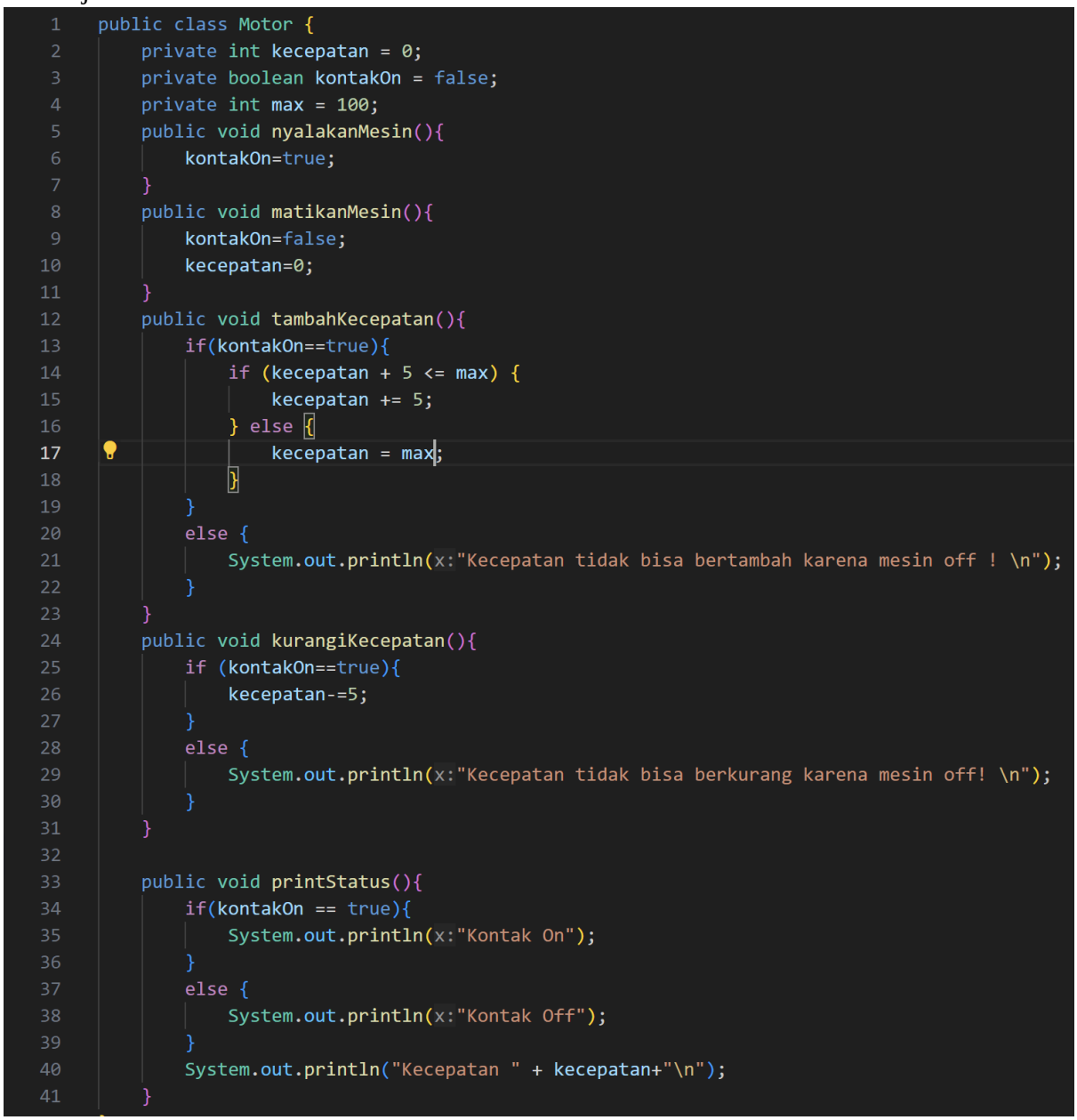
Question

1. Because the default value of kontakOn is false, where the machine is still off
2. To make that atribute can only access from that class and can't access out from class Motor.java
3. 

```java
public class Motor {
    private int kecepatan = 0;
    private boolean kontakOn = false;
    private int max = 100;
    public void nyalakanMesin(){
        kontakOn=true;
    }
    public void matikanMesin(){
        kontakOn=false;
        kecepatan=0;
    }
    public void tambahKecepatan(){
        if(kontakOn==true){
            if (kecepatan + 5 <= max) {
                kecepatan += 5;
            } else {
                kecepatan = max;
            }
        }
        else {
            System.out.println(x:"Kecepatan tidak bisa bertambah karena mesin off ! \n");
        }
    }
    public void kurangiKecepatan(){
        if (kontakOn==true){
            kecepatan-=5;
        }
        else {
            System.out.println(x:"Kecepatan tidak bisa berkurang karena mesin off! \n");
        }
    }

    public void printStatus(){
        if(kontakOn == true){
            System.out.println(x:"Kontak On");
        }
        else {
            System.out.println(x:"Kontak Off");
        }
        System.out.println("Kecepatan " + kecepatan+"\n");
    }
```

```java
public class Demo {
    Run | Debug
    public static void main(String[] args) {
        Motor motor = new Motor();
        motor.nyalakanMesin();
        motor.printStatus();

            for (int i = 0; i < 25; i++) {
            motor.tambahKecepatan();
            motor.printStatus();
        }
        motor.matikanMesin();
        motor.printStatus();
    }
}
```

```
Kontak On
Kecepatan 90

Kontak On
Kecepatan 95

Kontak On
Kecepatan 100

Kontak On
Kecepatan 100

Kontak On
Kecepatan 100

Kontak On
Kecepatan 100

Kontak On
Kecepatan 100

Kontak On
Kecepatan 100

Kontak Off
Kecepatan 0
```

4. Getter is action when we take some value from variable/object, while setter is action when we input value to variable/object
5. To input value of Simpanan
6. Setor()
7. A method that give value in the beginning in a object
8. Constructor Name must be same with Class Name, in one Class just only one Constructor, character must be public
9. Can't, when Constructor is private it cannot be access out of Class

10. Passing Parameter is used after add a constructor to add specific value and when a method need specific value
11. Class attribute is attribute in the class, while instantiate attribute is attribute that owned by object when we instantiate
12. Class method is method in the class and not done, while instantiate method is calling process after instantiate object

Assignment

1.
```
Name : Zaim
Age  : 30
```
2. Because in setAge there is “if (newAge > 30)P{ age = 30;} so when the value is more than 30 it will be print 30
3.
```java
public class EncapDemo {
    private String name;
    private int age;

    public String getName() {
        return name;
    }

    public void setName(String newName) {
        name = newName;
    }

    public int getAge() {
        return age;
    }

    public void setAge(int newAge) {
        if (newAge > 30) {
            System.out.println(x:"Age is more than maximum limit.")
        } else if (newAge < 18) {
            System.out.println(x:"Age is less than minimum limit.")
        } else {
            age = newAge;
        }
    }
}
```

```java
public class EncapTest{
    Run | Debug
    public static void main(String args[]){
        EncapDemo encap = new EncapDemo();
        encap.setName(newName:"Zaim");
        encap.setAge(newAge:17);

        System.out.println("Name : " +encap.getName());
        System.out.println("Age  : " +encap.getAge());

        EncapDemo encap1 = new EncapDemo();
        encap1.setName(newName:"Fahru");
        encap1.setAge(newAge:35);

        System.out.println("Name : " +encap1.getName());
        System.out.println("Age  : " +encap1.getAge());

        EncapDemo encap2 = new EncapDemo();
        encap2.setName(newName:"Ibra");
        encap2.setAge(newAge:19);

        System.out.println("Name : " +encap2.getName());
        System.out.println("Age  : " +encap2.getAge());
    }
}
```

```
Age is less than minimum limit.
Name : Zaim
Age  : 0
Age is more than maximum limit.
Name : Fahru
Age  : 0
Name : Ibra
Age  : 19
```

4.

```java
public class Anggota1 {
    public String noKtp, nama;
    public int limitPinjaman, jumlahPinjaman;

    Anggota1(String noKtp, String nama, int limitPinjaman) {
        this.nama = nama;
        this.limitPinjaman = limitPinjaman;
    }

    public String getNama() {
        return nama;
    }

    public int getLimitPinjaman() {
        return limitPinjaman;
    }

    public void pinjam(int pinjaman){
        if(jumlahPinjaman + pinjaman < limitPinjaman){
            jumlahPinjaman += pinjaman;
        } else {
            System.out.println(x:"Loan is more than limit");
        }
    }

    public int getJumlahPinjaman() {
        return jumlahPinjaman;
    }

    public void angsur(int angsuran) {
        jumlahPinjaman -= angsuran;
    }
}
```

```java
public class TestKoperasi{
    Run | Debug
    public static void main(String args[]){
        Anggota1 fahru = new Anggota1("111333444","Fahru",5000000);
        System.out.println("Nama Anggota   : " + fahru.getNama());
        System.out.println("Limit Pinjaman : " + fahru.getLimitPinj

        System.out.println(x:"\nMeminjama uang 10.000.000...");
        fahru.pinjam(pinjaman:10000000);
        System.out.println("Jumlah pinjaman saat ini : " +fahru.get

        System.out.println(x:"\nMeminjam uang 4.000.000...");
        fahru.pinjam(pinjaman:4000000);
        System.out.println("Jumlah pinjaman saat ini : " +fahru.get

        System.out.println(x:"\nMembayar angsuran 4.000.000...");
        fahru.angsur(angsuran:3000000);
        System.out.println("Jumlah pinjaman saat ini : " +fahru.get
    }
}
```

```
Nama Anggota   : Fahru
Limit Pinjaman : 5000000

Meminjama uang 10.000.000...
Loan is more than limit
Jumlah pinjaman saat ini : 0

Meminjam uang 4.000.000...
Jumlah pinjaman saat ini : 4000000

Membayar angsuran 3.000.000...
Jumlah pinjaman saat ini : 1000000
```

5.

```java
    public void angsur(int angsuran) {
        int minAngsuran = jumlahPinjaman * 10/100;
        if (angsuran > minAngsuran){
            jumlahPinjaman -= angsuran;
        }
        else {
            System.out.println(x:"Maaf, angsuran harus 10% dari jum
        }
    }
}
```

```java
        System.out.println(x:"\nMembayar angsuran 50.000...");
        fahru.angsur(angsuran:50000);
        System.out.println("Jumlah pinjaman saat ini : " +fahru.getJumla
```

```
Membayar angsuran 50.000...
Maaf, angsuran harus 10% dari jumlah pinjaman.
Jumlah pinjaman saat ini : 1000000
```

6.

```java
import java.util.Scanner;
public class TestKoperasi{
    Run | Debug
    public static void main(String args[]){
        Scanner input = new Scanner(System.in);
        Anggota1 fahru = new Anggota1(noKtp:"111333444",nama:"Fahru
        System.out.println("Nama Anggota   : " + fahru.getNama());
        System.out.println("Limit Pinjaman : " + fahru.getLimitPinj

        System.out.print(s:"Input pinjaman : ");
        fahru.pinjam(input.nextInt());
        System.out.println("Jumlah Pinjaman saat ini : " + fahru.ge

        System.out.print(s:"Input pinjaman : ");
        fahru.pinjam(input.nextInt());
        System.out.println("Jumlah Pinjaman saat ini : " + fahru.ge

        System.out.print(s:"Input angsuran : ");
        fahru.angsur(input.nextInt());
        System.out.println("Jumlah Pinjaman saat ini : " + fahru.ge

        System.out.print(s:"Input angsuran : ");
        fahru.angsur(input.nextInt());
        System.out.println("Jumlah Pinjaman saat ini : " + fahru.ge
    }
}
```

```
Nama Anggota   : Fahru
Limit Pinjaman : 5000000
Input pinjaman : 6000000
Loan is more than limit
Jumlah Pinjaman saat ini : 0
Input pinjaman : 4500000
Jumlah Pinjaman saat ini : 4500000
Input angsuran : 400000
Maaf, angsuran harus 10% dari jumlah pinjaman
Jumlah Pinjaman saat ini : 4500000
Input angsuran : 2000000
Jumlah Pinjaman saat ini : 2500000
```