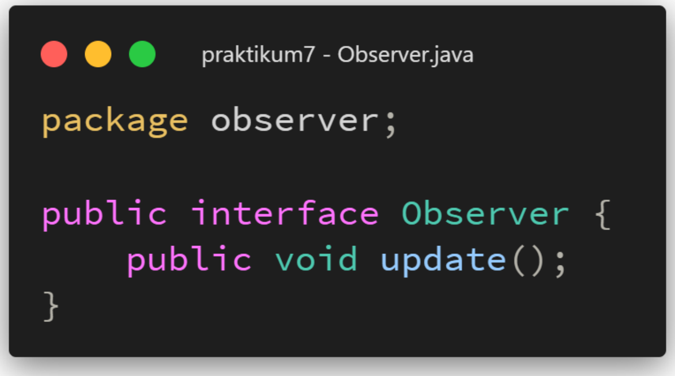
Praktikum Pemrograman Berbasis Objek

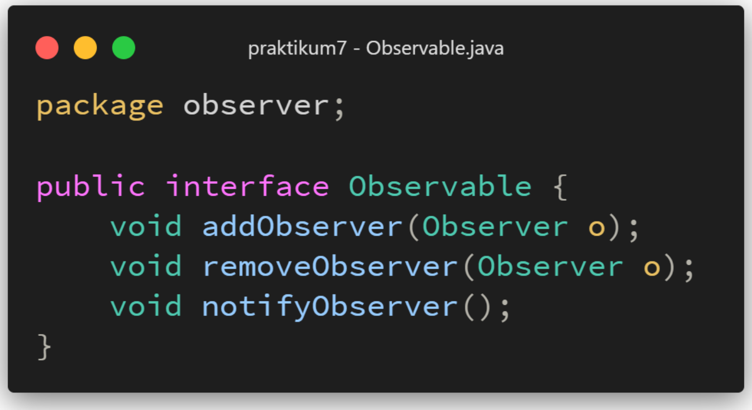
Tanggal Praktikum: Tuesday, 29 March 2022

1. Observer Pattern



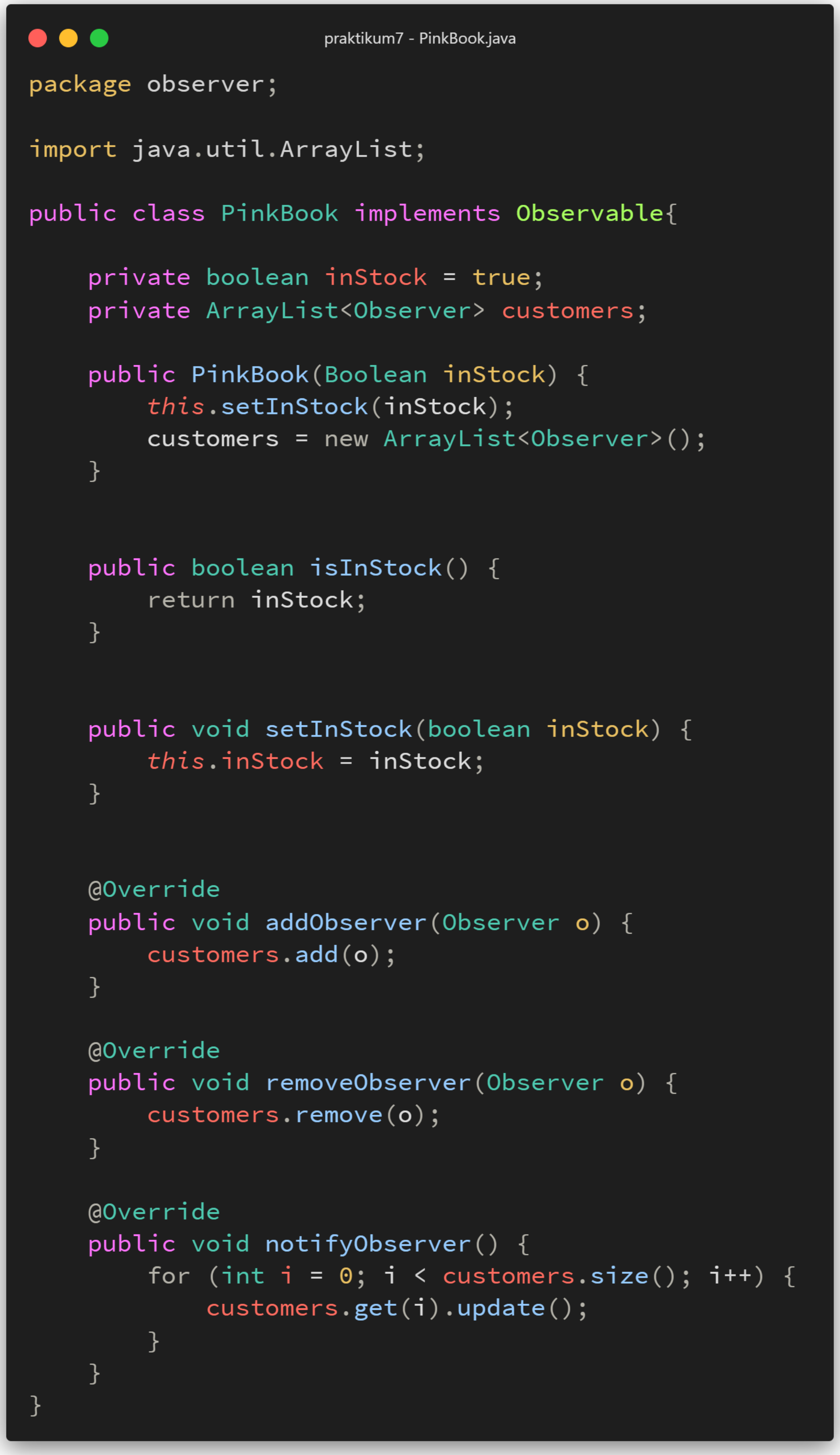
praktikum7 - Observer.java

```java
package observer;

public interface Observer {
    public void update();
}
```

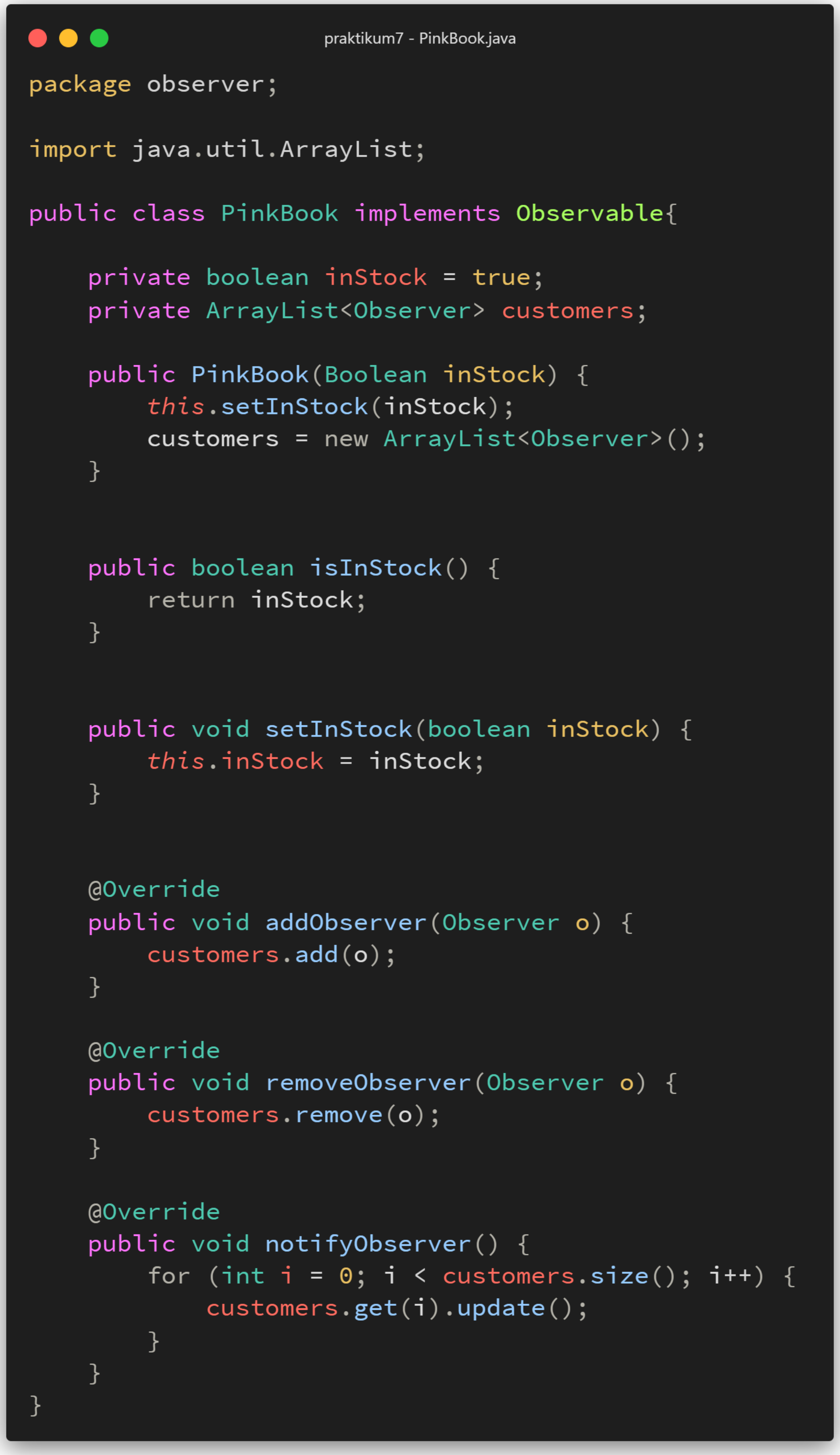


praktikum7 - Observable.java

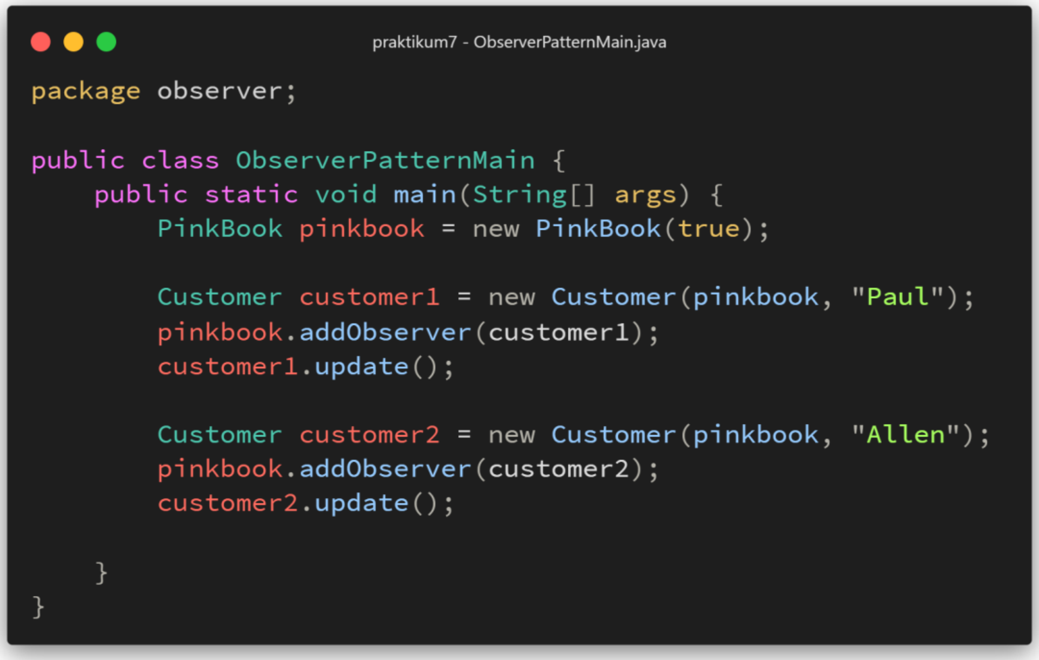
```java
package observer;

public interface Observable {
    void addObserver(Observer o);
    void removeObserver(Observer o);
    void notifyObserver();
}
```



```java
package observer;

import java.util.ArrayList;

public class PinkBook implements Observable{

    private boolean inStock = true;
    private ArrayList<Observer> customers;

    public PinkBook(Boolean inStock) {
        this.setInStock(inStock);
        customers = new ArrayList<Observer>();
    }


    public boolean isInStock() {
        return inStock;
    }


    public void setInStock(boolean inStock) {
        this.inStock = inStock;
    }


    @Override
    public void addObserver(Observer o) {
        customers.add(o);
    }

    @Override
    public void removeObserver(Observer o) {
        customers.remove(o);
    }

    @Override
    public void notifyObserver() {
        for (int i = 0; i < customers.size(); i++) {
            customers.get(i).update();
        }
    }
}
```

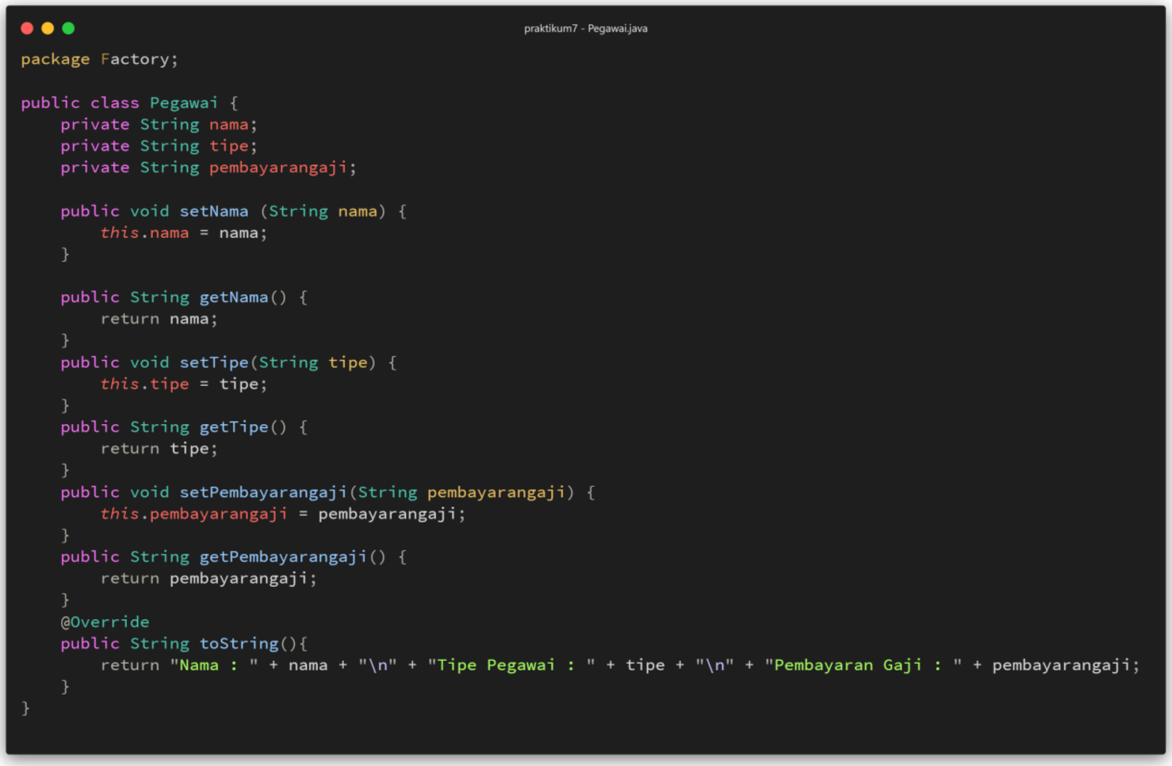


```java
package observer;

import java.util.ArrayList;

public class PinkBook implements Observable{

    private boolean inStock = true;
    private ArrayList<Observer> customers;

    public PinkBook(Boolean inStock) {
        this.setInStock(inStock);
        customers = new ArrayList<Observer>();
    }


    public boolean isInStock() {
        return inStock;
    }


    public void setInStock(boolean inStock) {
        this.inStock = inStock;
    }


    @Override
    public void addObserver(Observer o) {
        customers.add(o);
    }

    @Override
    public void removeObserver(Observer o) {
        customers.remove(o);
    }

    @Override
    public void notifyObserver() {
        for (int i = 0; i < customers.size(); i++) {
            customers.get(i).update();
        }
    }
}
```

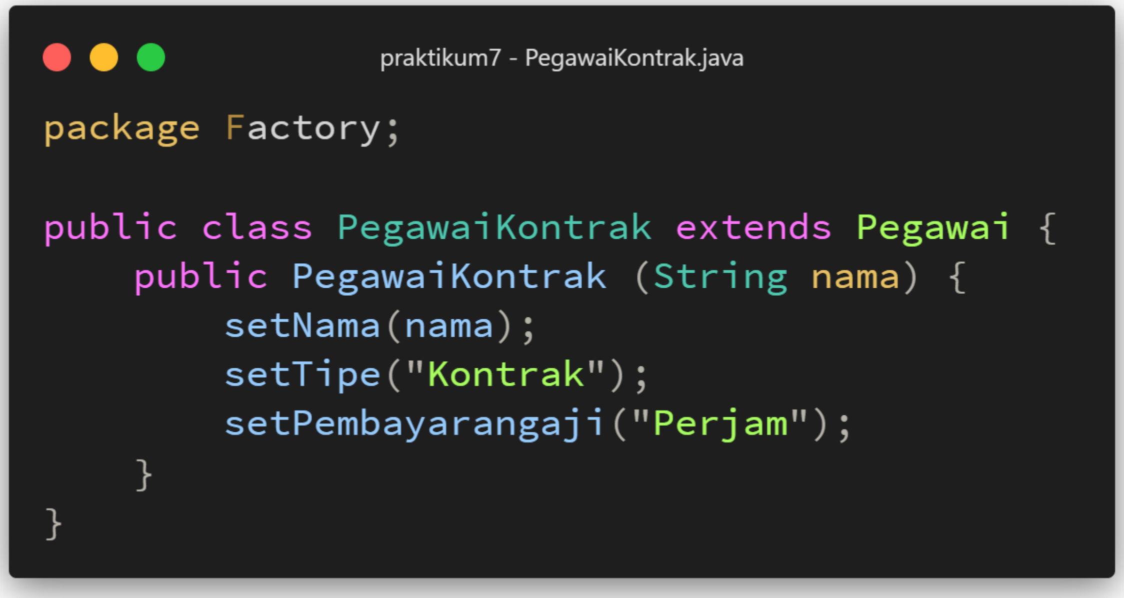

praktikum7 - ObserverPatternMain.java

```java
package observer;

public class ObserverPatternMain {
    public static void main(String[] args) {
        PinkBook pinkbook = new PinkBook(true);

        Customer customer1 = new Customer(pinkbook, "Paul");
        pinkbook.addObserver(customer1);
        customer1.update();

        Customer customer2 = new Customer(pinkbook, "Allen");
        pinkbook.addObserver(customer2);
        customer2.update();

    }
}
```

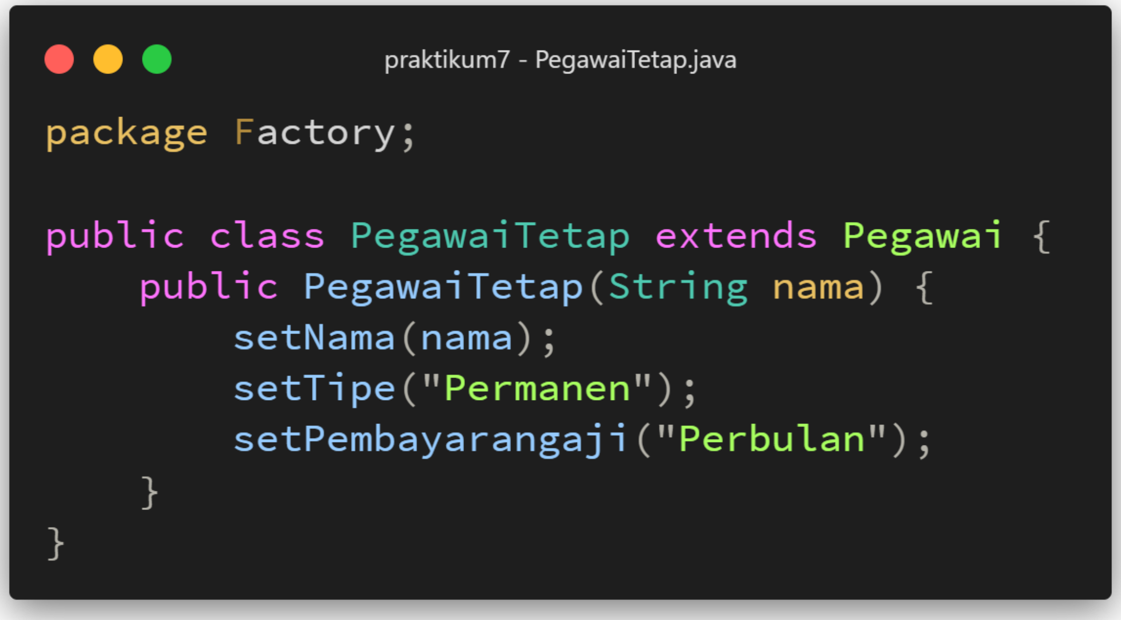
2. Factory Pattern


praktikum7 - Pegawai.java

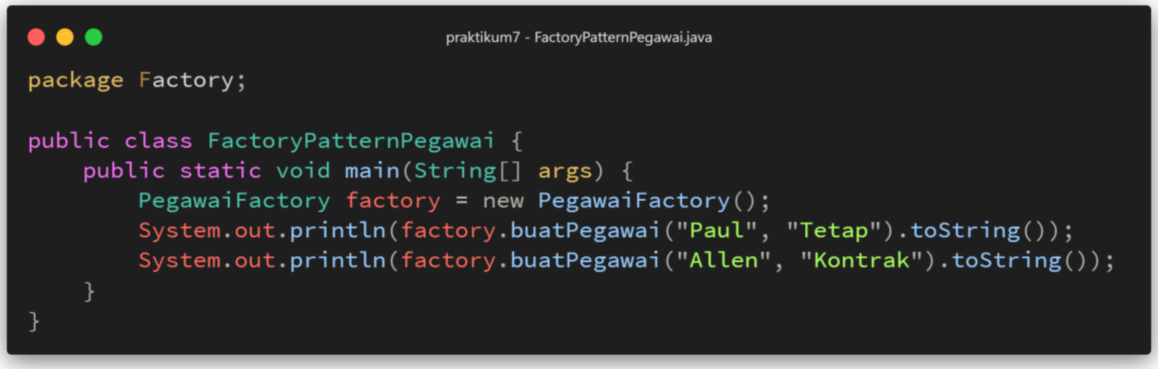
```java
package Factory;

public class Pegawai {
    private String nama;
    private String tipe;
    private String pembayarangaji;

    public void setNama (String nama) {
        this.nama = nama;
    }

    public String getNama() {
        return nama;
    }
    public void setTipe(String tipe) {
        this.tipe = tipe;
    }
    public String getTipe() {
        return tipe;
    }
    public void setPembayarangaji(String pembayarangaji) {
        this.pembayarangaji = pembayarangaji;
    }
    public String getPembayarangaji() {
        return pembayarangaji;
    }
    @Override
    public String toString(){
        return "Nama : " + nama + "\n" + "Tipe Pegawai : " + tipe + "\n" + "Pembayaran Gaji : " + pembayarangaji;
    }
}
```



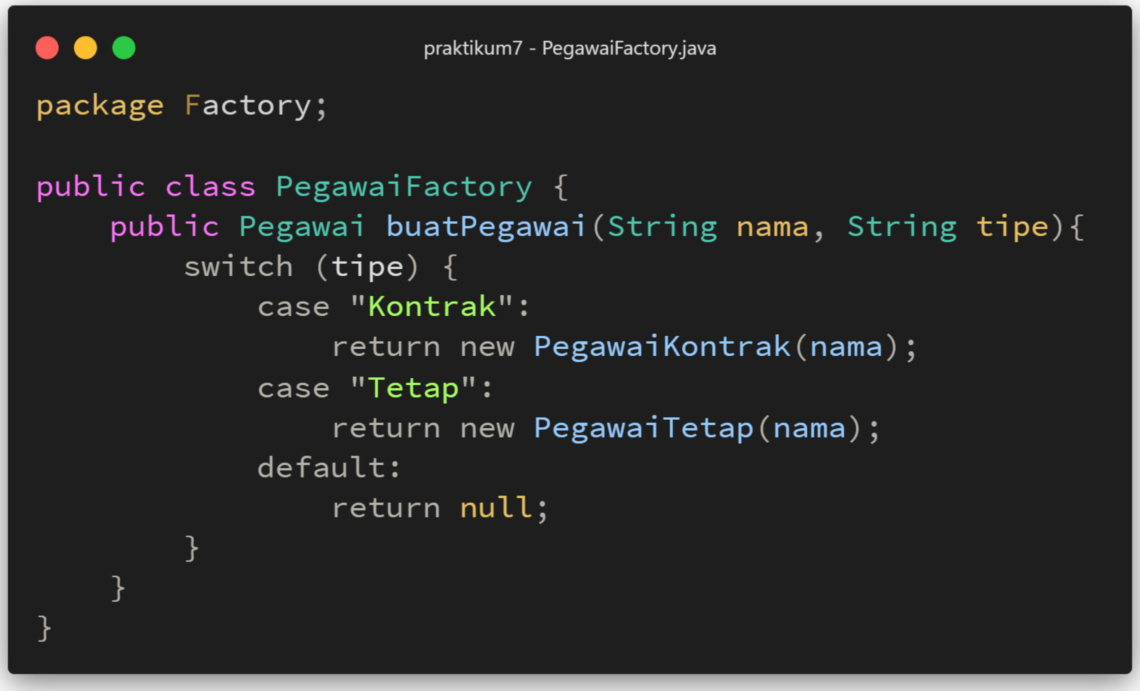
```java
package Factory;

public class PegawaiKontrak extends Pegawai {
    public PegawaiKontrak (String nama) {
        setNama(nama);
        setTipe("Kontrak");
        setPembayarangaji("Perjam");
    }
}
```



```java
package Factory;

public class PegawaiTetap extends Pegawai {
    public PegawaiTetap(String nama) {
        setNama(nama);
        setTipe("Permanen");
        setPembayarangaji("Perbulan");
    }
}
```

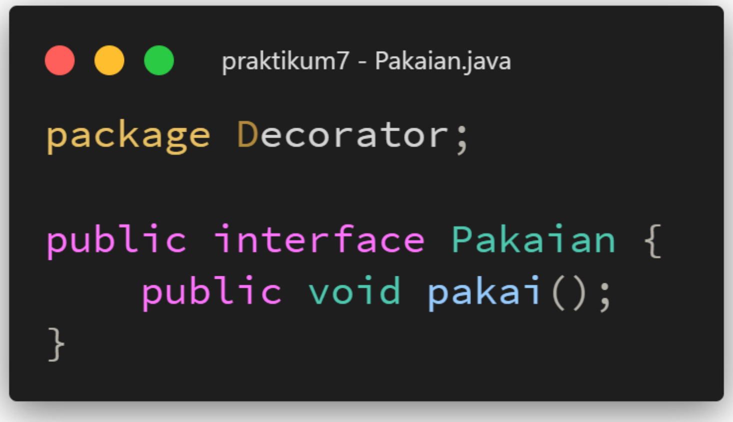


```java
package Factory;

public class FactoryPatternPegawai {
    public static void main(String[] args) {
        PegawaiFactory factory = new PegawaiFactory();
        System.out.println(factory.buatPegawai("Paul", "Tetap").toString());
        System.out.println(factory.buatPegawai("Allen", "Kontrak").toString());
    }
}
```

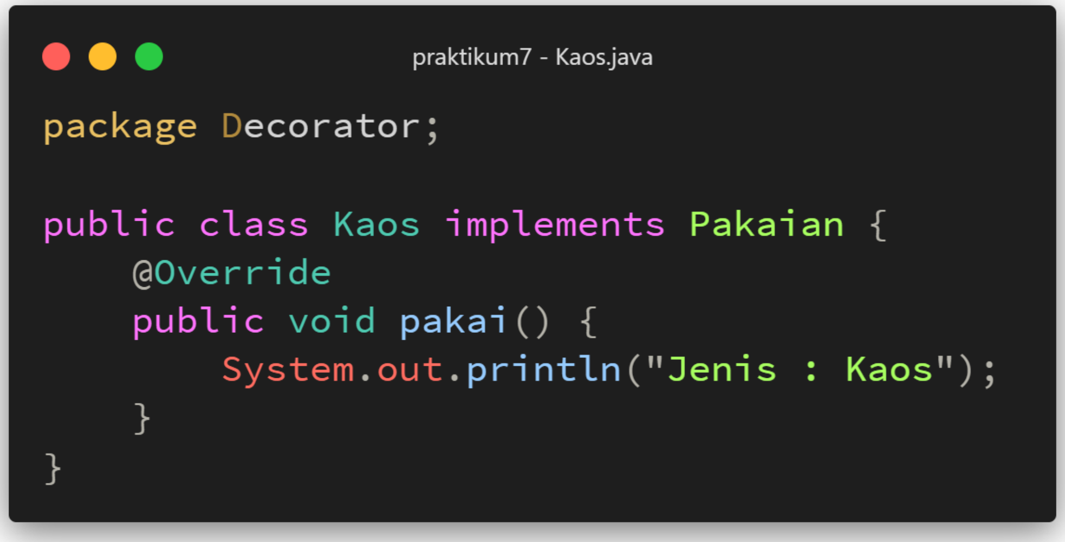


```java
package Factory;

public class PegawaiFactory {
    public Pegawai buatPegawai(String nama, String tipe){
        switch (tipe) {
            case "Kontrak":
                return new PegawaiKontrak(nama);
            case "Tetap":
                return new PegawaiTetap(nama);
            default:
                return null;
        }
    }
}
```

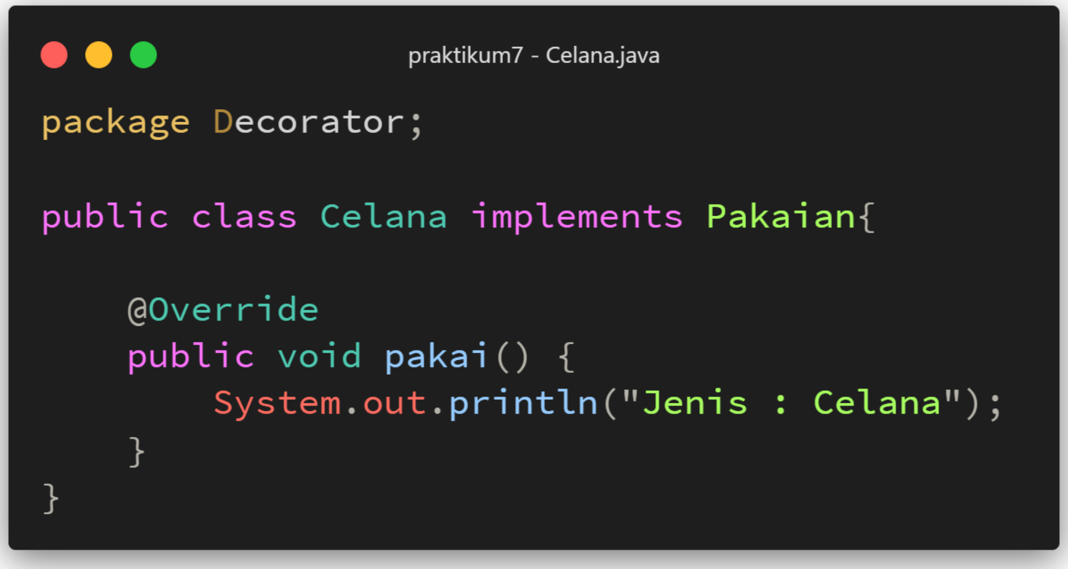
3. Decorator Pattern



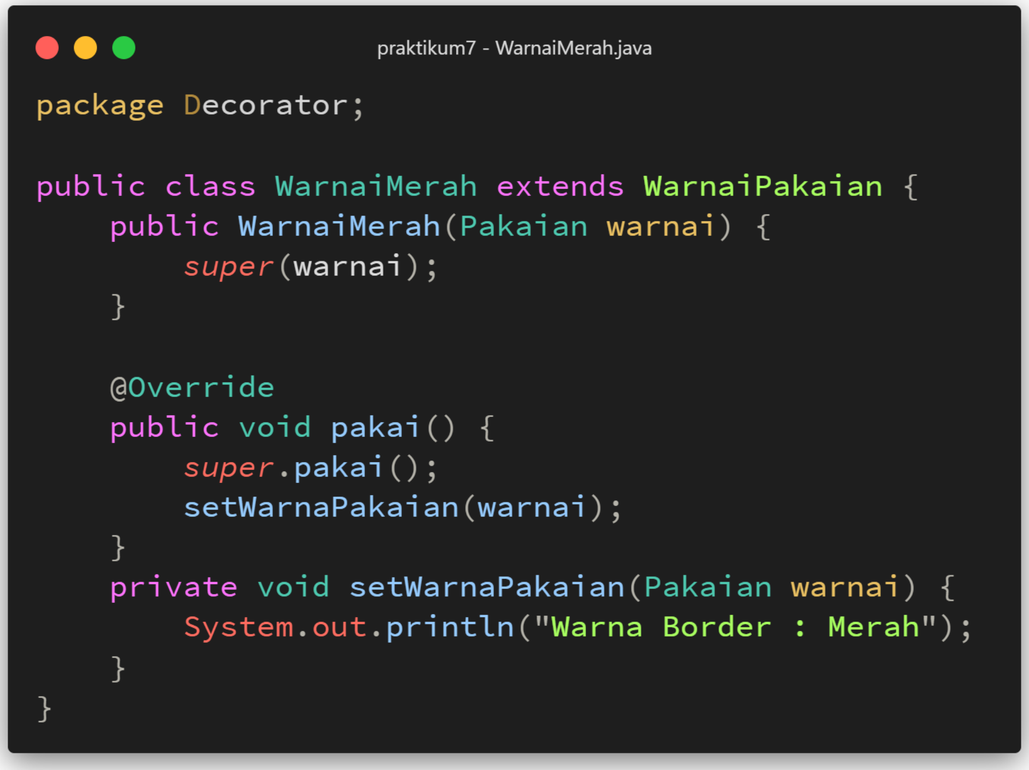
```java
package Decorator;

public interface Pakaian {
    public void pakai();
}
```


praktikum7 - Kaos.java

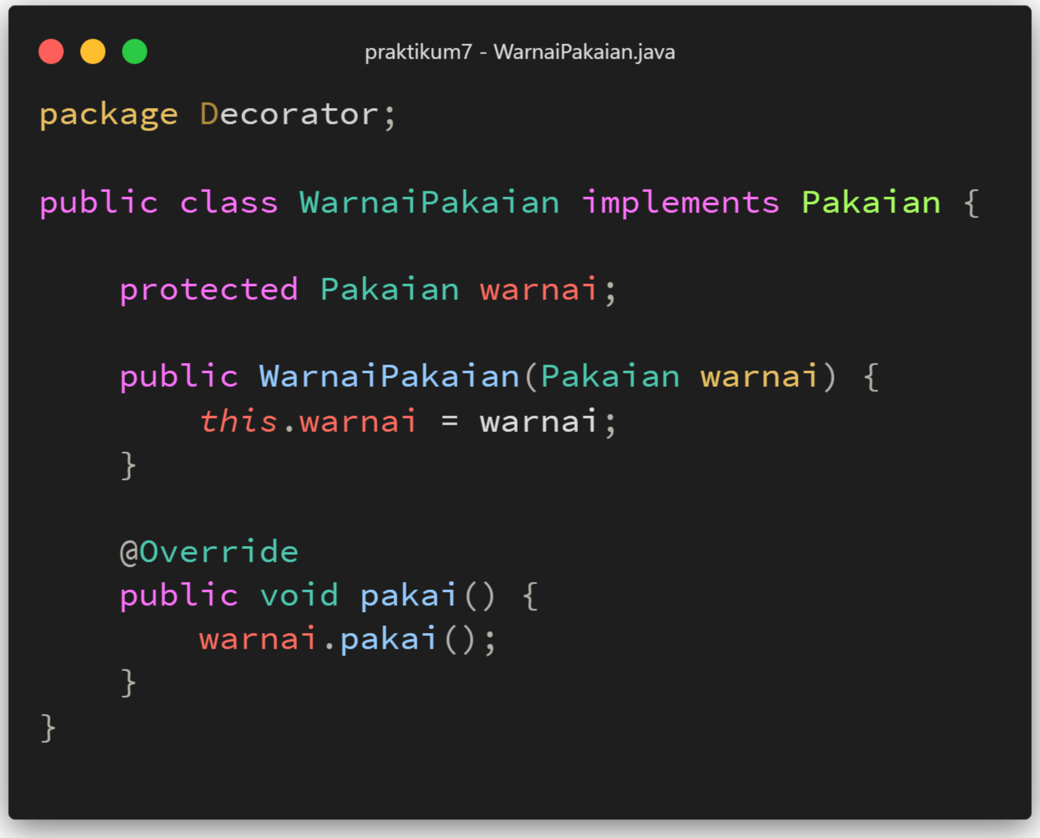
```java
package Decorator;

public class Kaos implements Pakaian {
    @Override
    public void pakai() {
        System.out.println("Jenis : Kaos");
    }
}
```


praktikum7 - Celana.java

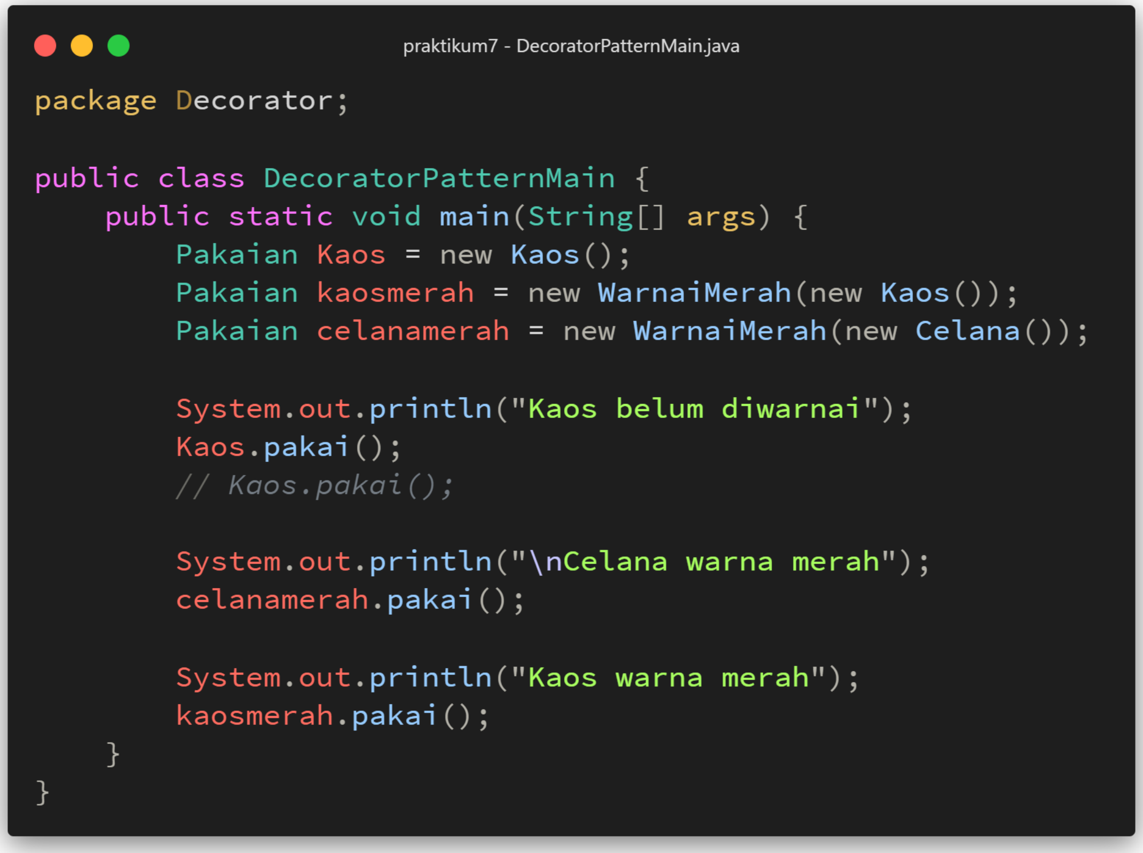
```java
package Decorator;

public class Celana implements Pakaian{

    @Override
    public void pakai() {
        System.out.println("Jenis : Celana");
    }
}
```



```java
package Decorator;

public class WarnaiMerah extends WarnaiPakaian {
    public WarnaiMerah(Pakaian warnai) {
        super(warnai);
    }

    @Override
    public void pakai() {
        super.pakai();
        setWarnaPakaian(warnai);
    }
    private void setWarnaPakaian(Pakaian warnai) {
        System.out.println("Warna Border : Merah");
    }
}
```



```java
package Decorator;

public class WarnaiPakaian implements Pakaian {

    protected Pakaian warnai;

    public WarnaiPakaian(Pakaian warnai) {
        this.warnai = warnai;
    }

    @Override
    public void pakai() {
        warnai.pakai();
    }
}
```



```java
package Decorator;

public class DecoratorPatternMain {
    public static void main(String[] args) {
        Pakaian Kaos = new Kaos();
        Pakaian kaosmerah = new WarnaiMerah(new Kaos());
        Pakaian celanamerah = new WarnaiMerah(new Celana());

        System.out.println("Kaos belum diwarnai");
        Kaos.pakai();
        // Kaos.pakai();

        System.out.println("\nCelana warna merah");
        celanamerah.pakai();

        System.out.println("Kaos warna merah");
        kaosmerah.pakai();
    }
}
```