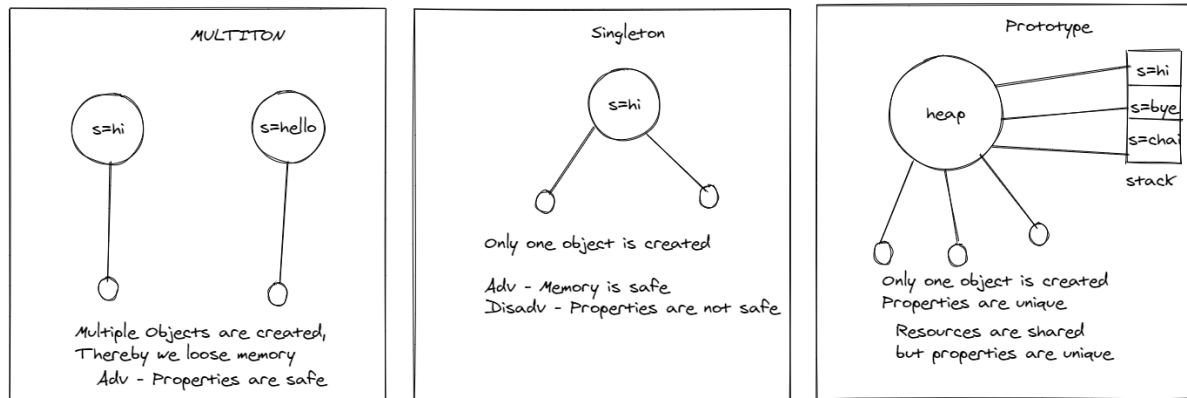


Day 7

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🏷️ Tags	Java

Cloneable

- Shallow Copy
 - Properties are unique
 - Resources are shared



```
package ga.veee.day7;

public class ObjectCreationDemo {
    public static void main(String[] args) throws Exception {
        MyBusinessLogic myb = MyBusinessLogic.createObject();
        myb.str = "first object...";
        MyBusinessLogic myb2 = MyBusinessLogic.createObject();
        myb2.str = "second object...";

        myb.setDataLogic(DataLogic.createObject());
        System.out.println(myb.getDataLogic());
        myb.setDataLogic(DataLogic.createObject());
        System.out.println(myb.getDataLogic());

        myb.setDataLogic(DataLogic.createObject());
        myb.setDataLogic(DataLogic.createObject());

        System.out.println(myb.str);
    }
}

class MyBusinessLogic implements Cloneable {
    String str;
    DataLogic dataLogic;
}
```

```

    public final DataLogic getDataLogic() {
        return dataLogic;
    }

    public final void setDataLogic(DataLogic dataLogic) {
        this.dataLogic = dataLogic;
    }

    private MyBusinessLogic() {
        System.out.println("cons called...");
    }

    private static MyBusinessLogic myb;

    synchronized public static MyBusinessLogic createObject() throws Exception {
        if (myb == null) {
            myb = new MyBusinessLogic();
        }
        return myb.createClone();
    }

    public MyBusinessLogic createClone() throws Exception {
        return (MyBusinessLogic) super.clone();
    }
}

class DataLogic implements Cloneable {
    private DataLogic() {
        System.out.println("DataLogic cons called...");
    }

    private static DataLogic myb;

    synchronized public static DataLogic createObject() throws Exception {
        if (myb == null) {
            myb = new DataLogic();
        }
        return myb.createClone();
    }

    public DataLogic createClone() throws Exception {
        return (DataLogic) super.clone();
    }
}

//My Resources are shared but still properties are unique...

```

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Template method Pattern

- Parent class should be abstract
- Which demonstrate the abstract class
- Abstract class can extend another abstract class

- Can have abstract and non-abstract method
- Non Abstract Method should be final
- May have abstract method
-

```
package ga.veee.day7;

public class TemplateMethodDemo {
    public static void main(String[] args) {
        Dominos dominos = new UdhayPizza();

        dominos.dominosProcess();
    }
}

abstract class Dominos {
    final public void processToCook() { //template methods - parts
        System.out.println("domino chief cook has defined the process...");
    }

    final public void processAddIngredients() { //template method-parts
        System.out.println("domomis chief cook has made the ingredients...");
    }

    final public void processPacking() { //template methods - parts
        System.out.println("dominos has defined the packing process...");
    }

    final private void processCollection() { //template methods - parts
        System.out.println("dominos has defined the collection and profit sharing process...");
    }

    public abstract void cookPizza();

    public abstract void deliverPizza();


    final public void dominosProcess() { //template method- whole
        cookPizza();
        deliverPizza();
        processCollection();
    }
}

class UdhayPizza extends Dominos {
    @Override
    public void cookPizza() {
        System.out.println("pizza cooking started...");
        processToCook();
        processAddIngredients();
        System.out.println("pizza ready.....");
    }

    @Override
    public void deliverPizza() {
        processPacking();
        System.out.println("pizza delivered....");
    }
}
```

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Inheritance

- Relationship between classes
- Kind of

Command Pattern

Association

Layer of indirection

Complexity

Transparency

```
package ga.veee.day7;

public class CommandDemo {
    public static void main(String[] args) {
        Tv tv = new Tv();
        SetTopBox setTopBox = new SetTopBox();
        VGame vGame = new VGame();
        SoundSystem soundSystem = new SoundSystem();

        FatherNewsChannelCommand fncc = new FatherNewsChannelCommand(tv, setTopBox, vGame, soundSystem);
        MotherSerialChannelCommand msc = new MotherSerialChannelCommand(tv, setTopBox, vGame, soundSystem);
        FatherVGameCommand fvc = new FatherVGameCommand(tv, setTopBox, vGame, soundSystem);

        UniversalRemote uvr = new UniversalRemote();

        uvr.setCommand(1, fvc);
        uvr.setCommand(2, msc);
        uvr.setCommand(3, fncc);

        uvr.executeCommand(3); // this is what my parents will do...
    }
}

class UniversalRemote {
    Command c[] = new Command[5];

    public UniversalRemote() {
        for (int i = 0; i < 5; i++) {
            c[i] = new DummyCommand();
        }
    }

    public void setCommand(int slot, Command command) {
        this.c[slot] = command;
    }
}
```

```

    }

    public void executeCommand(int slot) {
        this.c[slot].execute();
    }
}

class DummyCommand extends Command {
    @Override
    public void execute() {
        System.out.println("I am dummy yet to be operational...");
    }
}

abstract class Command {
    public Command() {
        // TODO Auto-generated constructor stub
    }

    private Tv tv;
    private SetTopBox setTopBox;
    private VGame vGame;
    private SoundSystem soundSystem;

    public Command(Tv tv, SetTopBox setTopBox, VGame vGame, SoundSystem soundSystem) {
        this.tv = tv;
        this.setTopBox = setTopBox;
        this.vGame = vGame;
        this.soundSystem = soundSystem;
    }

    public final Tv getTv() {
        return tv;
    }

    public final SetTopBox getSetTopBox() {
        return setTopBox;
    }

    public final VGame getvGame() {
        return vGame;
    }

    public final SoundSystem getSoundSystem() {
        return soundSystem;
    }

    public abstract void execute();
}

class FatherNewsChannelCommand extends Command {
    public FatherNewsChannelCommand(Tv tv, SetTopBox setTopBox, VGame vGame, SoundSystem soundSystem) {
        super(tv, setTopBox, vGame, soundSystem);
    }

    @Override
    public void execute() {
        System.out.println("logic of Father news channel command started.....");
        //business logic
        getTv().tvOn();
        getTv().av1Mode();
        getSetTopBox().newsChannel();
        getSoundSystem().highSound();
        System.out.println("Enjoy the news pappa.....");
    }
}

```

```

}

class MotherSerialChannelCommand extends Command {
    public MotherSerialChannelCommand(Tv tv, SetTopBox setTopBox, VGame vGame, SoundSystem soundSystem) {
        super(tv, setTopBox, vGame, soundSystem);
    }

    public void execute() {
        System.out.println("logic of Mother news channel command started.....");
        getTv().tvOn();
        getTv().av1Mode();
        getSetTopBox().serialChannel();
        getSoundSystem().lowSound();
        System.out.println("Enjoy the serial channel mamma");
    }
}

class FatherVGameCommand extends Command {
    public FatherVGameCommand(Tv tv, SetTopBox setTopBox, VGame vGame, SoundSystem soundSystem) {
        super(tv, setTopBox, vGame, soundSystem);
    }

    public void execute() {
        System.out.println("logic of father tennis game command started.....");
        getTv().tvOn();
        getTv().vgameMode();
        getSoundSystem().highSound();
        System.out.println("Enjoy the tennis game pappa.....");
    }
}

class Tv {
    public void tvOn() {
        System.out.println("tv on.....");
    }

    public void av1Mode() {
        System.out.println("av1 mode.....");
    }

    public void vgameMode() {
        System.out.println("v game mode.....");
    }
}

class SetTopBox {
    public void newsChannel() {
        System.out.println("news channel started.....");
    }

    public void serialChannel() {
        System.out.println("serial channel started.....");
    }
}

class SoundSystem {
    public void highSound() {
        System.out.println("high volume.....");
    }

    public void lowSound() {
        System.out.println("low volume.....");
    }
}

```

```
class VGame {
    public void playTennis() {
        System.out.println("vgame tennis started...");
    }
}
```

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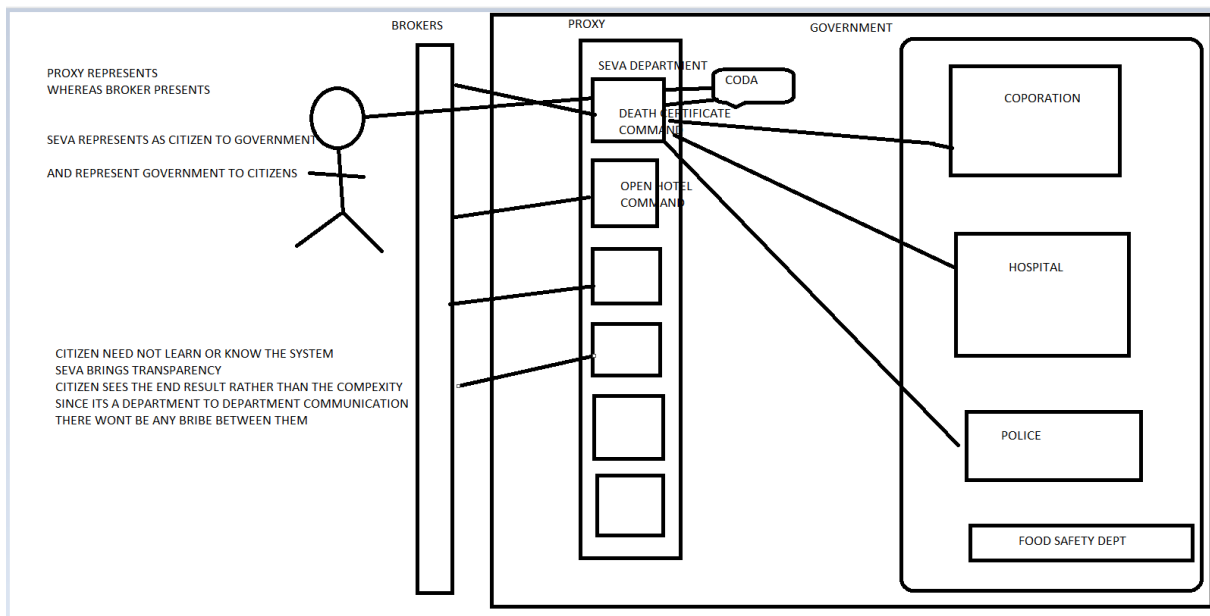
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