SOLID Principles

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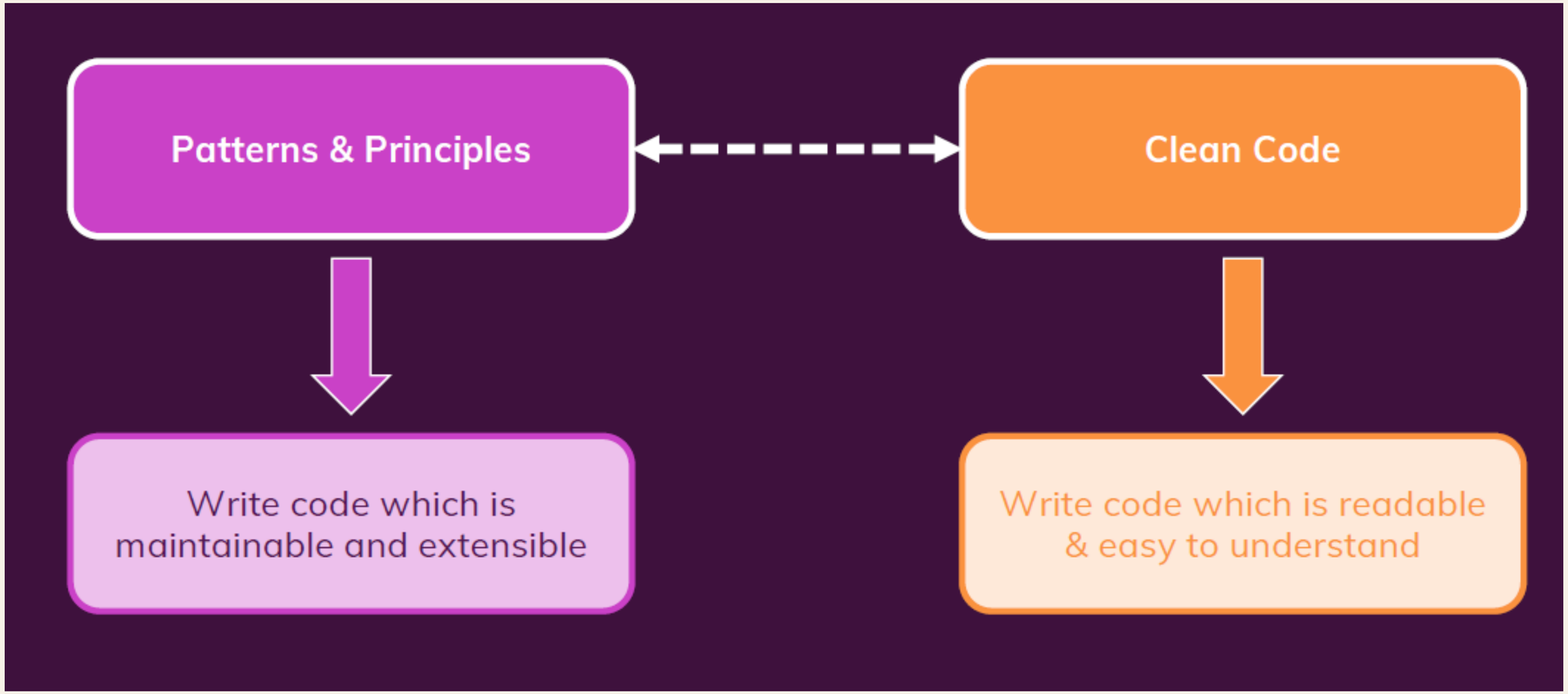
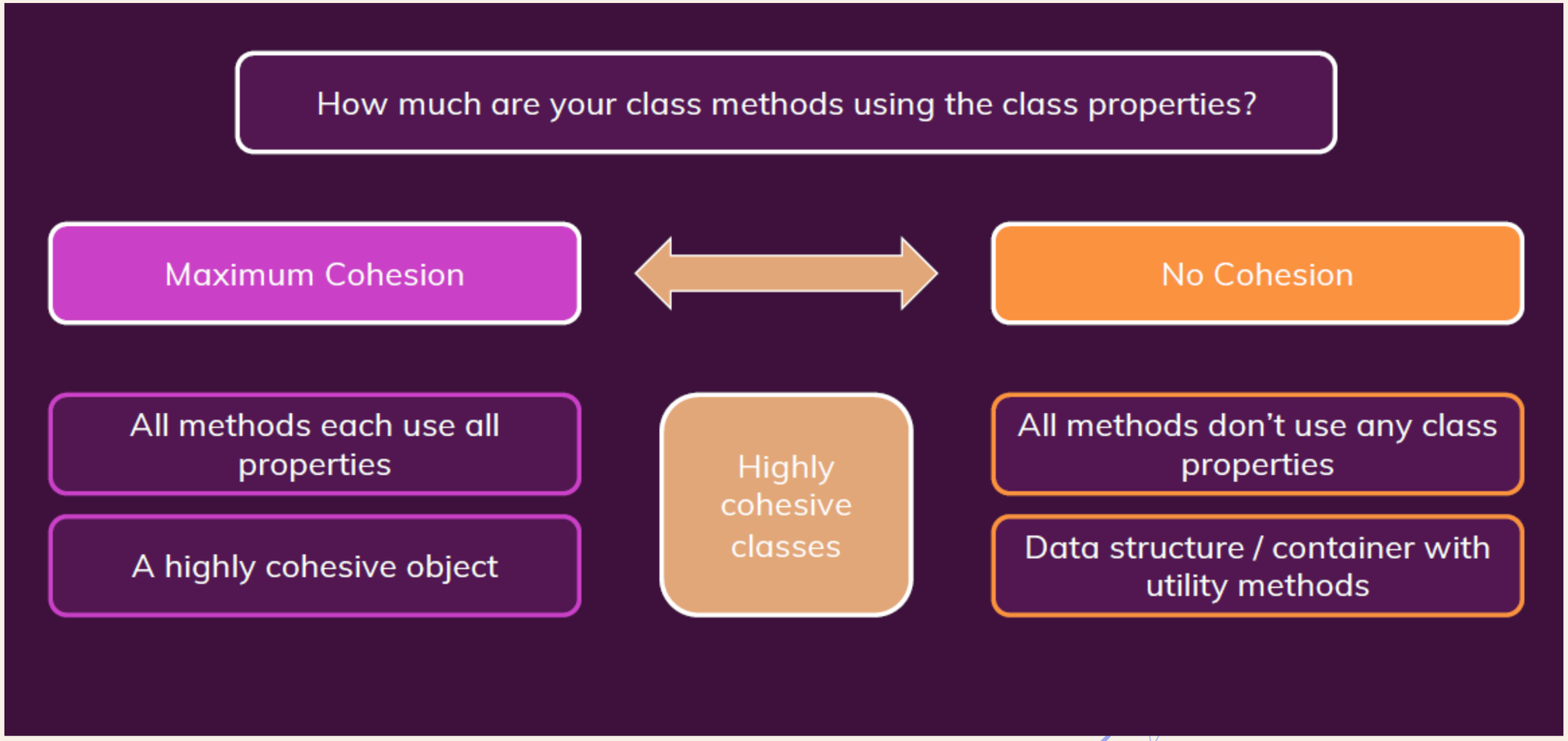
Clean Code and Principle Patterns

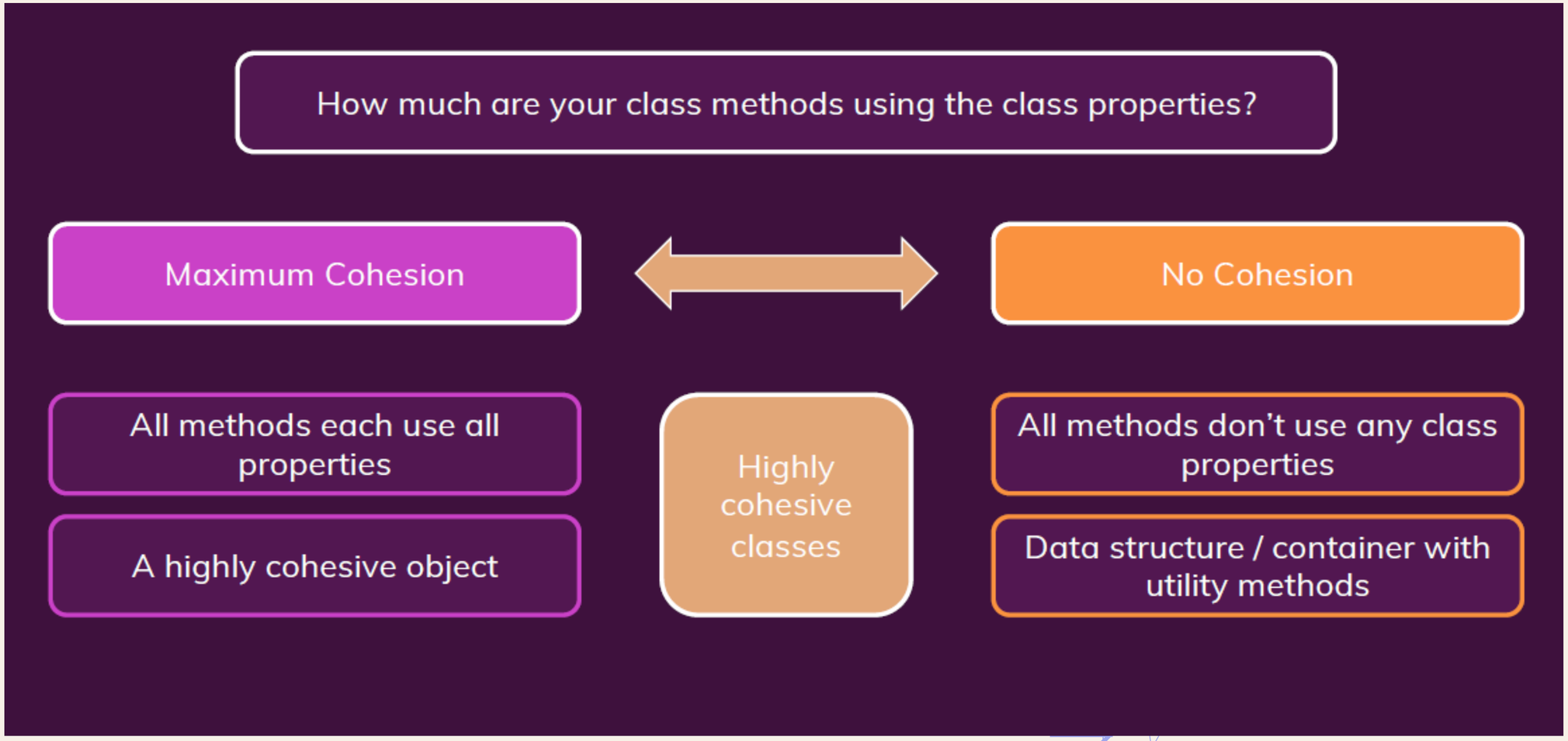


Classes should be small

Cohesion


How much are your class methods using the class properties?
Maximum Cohesion
No Cohesion
All methods each use all properties
A highly cohesive object
Highly cohesive classes
All methods don't use any class properties
Data structure / container with utility methods

Cohesion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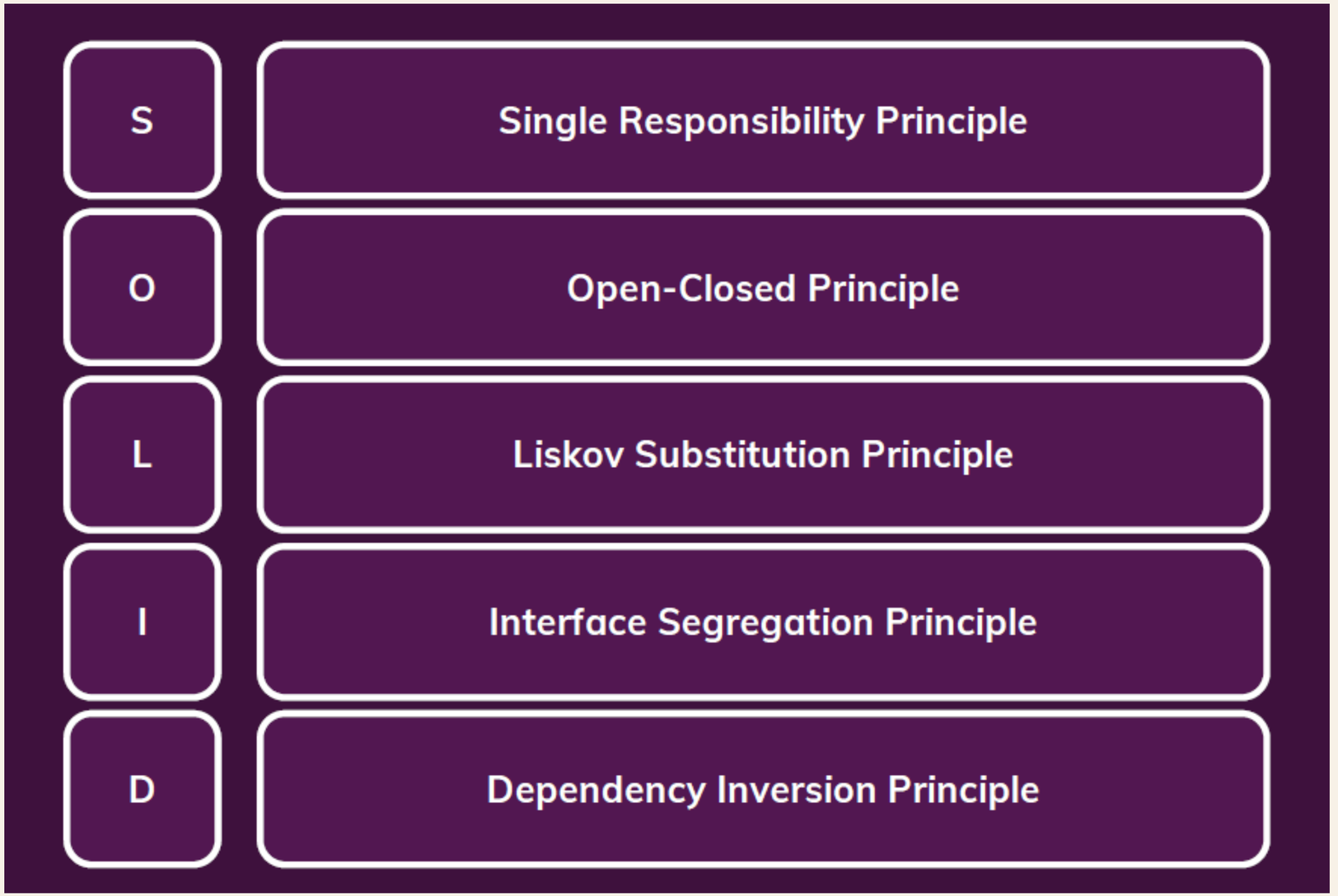

Single Responsibility Principle

Classes should have a single responsibility – a class shouldn't change for more than one reason.

Single Responsibility Principle

```
public class Shop {
    private PlayerInventory playerInventory;

    public Shop(PlayerInventory playerInventory) {
        this.playerInventory = playerInventory;
    }
}
```

```
class Shop {
        private PlayerInventory playerInventory;

        buyDiamonds(data:any){};
        buyHearts(data:any){};
    }
```

Open Closed Principle

A class should be open for extension but closed for modification.

Open Closed Principle

```
class Shop {
        private PlayerInventory playerInventory;

        buyDiamonds(data:any){};
        buyHearts(data:any){};
    }
```

```
class Shop {
        private PlayerInventory playerInventory;
    }


class buyDiamondswithcoin extends shop implement purchase(){
        buyDiamond(data:any){
                ////
                }
}

class buyHeartswithDiamond extends shop implement purchase(){
        buyHearts(data:any){
                ////
                }
}
```

Liskov Substitution Principle

Objects should be replaceable with instances of their subclasses without altering the behavior.

Liskov Substitution Principle

```
class Shop {
        private PlayerInventory playerInventory;

        buyDiamonds(data:any){};
        buyHearts(data:any){};
    }
```

Liskov Substitution Principle

```
class Shop {
        private PlayerInventory playerInventory;
    }


class buyDiamondswithcoin extends shop implement purchase(){
        buyDiamond(data:any){
                ////
                }
}

class buyHeartswithDiamond extends shop implement purchase(){
        buyHearts(data:any){
                ////
                }
}
```

Interface Segregation Principle

Many client-specific interfaces are better than one general purpose interface.

Interface Segregation Principle

```
interface purchaseDiamond{
      buyDiamond()
}
interface purchaseHeart{
      buyHearts()
}
class buyDiamondswithcoin extends shop implement purchaseDiamond(){
        buyDiamond(data:any){
                ////
                 }
}

class buyHeartswithDiamond extends shop implement purchaseHeart(){
        buyHearts(data:any){
                ////
                 }
}
```

Dependency Inversion Principle

You should depend upon abstractions, not concretions.

Dependency Inversion Principle

```
class Shop {
        private PlayerInventory playerInventory;

        buyDiamonds(data:any){};
        buyHearts(data:any){};
    }
```

```
interface purchaseDiamond{
        buyDiamond()
}
interface purchaseHeart{
        buyHearts()
}
class buyDiamondswithcoin extends shop implement purchaseDiamond(){
          buyDiamond(data:any){
                  ////
                   }
}

class buyHeartswithDiamond extends shop implement purchaseHeart(){
          buyHearts(data:any){
                  ////
                   }
}
```