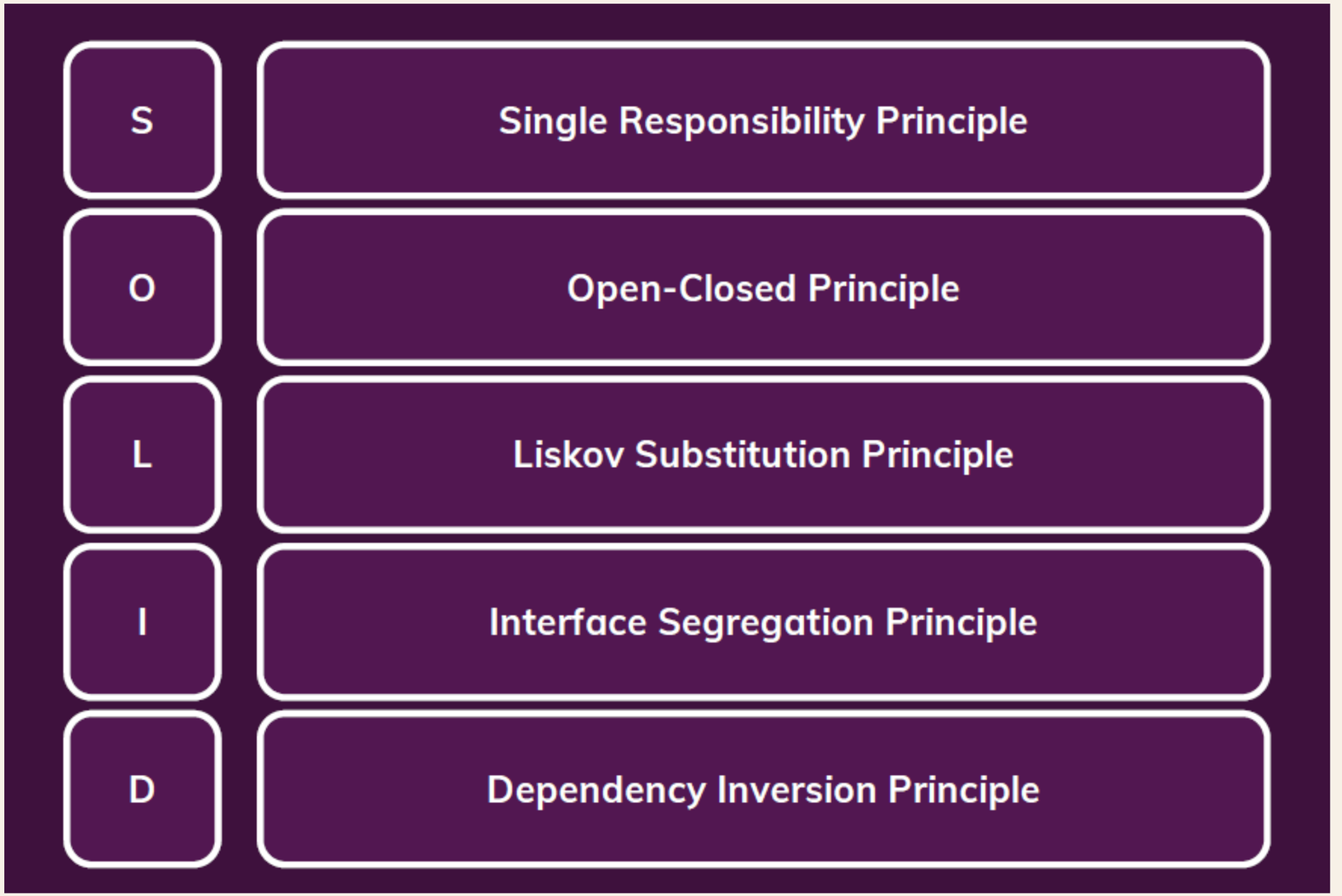
SOLID PRINCIPLES



Single Responsibility Principle

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

Single Responsibility Principle

```java
package com.ilp.entity;

import java.util.ArrayList;

public class Account {
    private String accountId;
    private SubscriptionType subscriptionType;
    private ArrayList<Profiles> profiles=new ArrayList<Profiles>();

    public Account(String accountId, SubscriptionType subscriptionType, ArrayList<Profiles> profiles) {
        this.accountId = accountId;
        this.subscriptionType = subscriptionType;
        this.profiles = profiles;
    }

    public String getAccountId() {
        return accountId;
    }

    public SubscriptionType getSubscriptionType() {
        return subscriptionType;
    }

    public ArrayList<Profiles> getProfiles() {
        return profiles;
    }
}
```

Open Closed Principle

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

Open Closed Principle

```java
package com.ilp.entity;

import com.ilp.interfaces.Subscription;


public abstract class SubscriptionType implements Subscription {
    private int deviceLimit;

    public SubscriptionType(int deviceLimit) {
        this.deviceLimit = deviceLimit;
    }

    public int getDeviceLimit() {
        return deviceLimit;
    }

//    public void stream1080pVideo() {
//    }

}
```

```java
package com.ilp.interfaces;

public interface Subscription {

    String getSubscriptionName();
    int getPrice();
}
```

Open Closed Principle

```java
package com.ilp.entity;

public class BasicSubscription extends SubscriptionType {
    public BasicSubscription(int deviceLimit) {
        super(deviceLimit);
    }

    @Override
    public String getSubscriptionName() {
        // TODO Auto-generated method stub
        return "Basic";
    }

    @Override
    public int getPrice() {
        // TODO Auto-generated method stub
        return 149;
    }

}
```

```java
package com.ilp.entity;

import com.ilp.interfaces.VideoStreaming;

public class PremiumSubscription extends SubscriptionType implements VideoStreaming {
    public PremiumSubscription(int deviceLimit) {
        super(deviceLimit);
    }

    @Override
    public String getSubscriptionName() {
        // TODO Auto-generated method stub
        return "premium";
    }

    @Override
    public int getPrice() {
        // TODO Auto-generated method stub
        return 249;
    }
    @Override
    public void stream1080pVideo() {
        System.out.println("Streaming 1080p video");
    }

}
```

Liskov Substitution Principle

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

Liskov Substitution Principle

```java
package com.ilp.entity;
import com.ilp.interfaces.Subscription;
public abstract class SubscriptionType implements Subscription {
    private int deviceLimit;

    public SubscriptionType(int deviceLimit) {
        this.deviceLimit = deviceLimit;
    }

    public int getDeviceLimit() {
        return deviceLimit;
    }

}
```

```java
package com.ilp.entity;
import com.ilp.interfaces.*;

public class StandardSubscription extends SubscriptionType implements  VideoStreaming{
    public StandardSubscription(int deviceLimit) {
        super(deviceLimit);
    }

    @Override
    public String getSubscriptionName() {
        // TODO Auto-generated method stub
        return "standard";
    }

    @Override
    public int getPrice() {
        // TODO Auto-generated method stub
        return 199;
    }

    @Override
    public void stream1080pVideo() {
        // TODO Auto-generated method stub
        System.out.println("1080p streaming");

    }

}
```

Liskov Substitution Principle

```java
package com.ilp.entity;

import com.ilp.interfaces.VideoStreaming;

public class PremiumSubscription extends SubscriptionType implements VideoStreaming {
    public PremiumSubscription(int deviceLimit) {
        super(deviceLimit);
    }

    @Override
    public String getSubscriptionName() {
        // TODO Auto-generated method stub
        return "premium";
    }

    @Override
    public int getPrice() {
        // TODO Auto-generated method stub
        return 249;
    }
    @Override
    public void stream1080pVideo() {
        System.out.println("Streaming 1080p video");
    }

}
```

```java
package com.ilp.utility;
import java.util.ArrayList;

public class NetflixUtility {

        public static void main(String[] args) {
            // Creating profiles
            Profiles profile1 = new Profiles("1", "Profile1");
            Profiles profile2 = new Profiles("2", "Profile2");

            // Creating subscription type
            SubscriptionType standardSubscription = new StandardSubscription(3);

            // Creating account with multiple profiles and the subscription type
            ArrayList<Profiles> profiles = new ArrayList<>();
            profiles.add(profile1);
            profiles.add(profile2);

            Account account = new Account("A1", standardSubscription, profiles);

            // Creating a customer with the account

            Customer customer = new Customer("C1", "Customer1", account);

            // Displaying information
            DisplayCustomer.displayCustomerInfo(customer);

        }
}
```

Interface Segregation Principle

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

Interface Segregation Principle

```java
package com.ilp.interfaces;

public interface VideoStreaming {
        public void stream1080pVideo();
}
```

```java
package com.ilp.entity;

public class BasicSubscription extends SubscriptionType {
    public BasicSubscription(int deviceLimit) {
        super(deviceLimit);
    }

    @Override
    public String getSubscriptionName() {
        // TODO Auto-generated method stub
        return "Basic";
    }

    @Override
    public int getPrice() {
        // TODO Auto-generated method stub
        return 149;
    }

}
```

Interface Segregation Principle

```java
package com.ilp.entity;
import com.ilp.interfaces.*;

public class StandardSubscription extends SubscriptionType implements  VideoStreaming{
    public StandardSubscription(int deviceLimit) {
        super(deviceLimit);
    }

    @Override
    public String getSubscriptionName() {
        // TODO Auto-generated method stub
        return "standard";
    }

    @Override
    public int getPrice() {
        // TODO Auto-generated method stub
        return 199;
    }

    @Override
    public void stream1080pVideo() {
        // TODO Auto-generated method stub
        System.out.println("1080p streaming");

    }

}
```

```java
package com.ilp.entity;

import com.ilp.interfaces.VideoStreaming;

public class PremiumSubscription extends SubscriptionType implements VideoStreaming {
    public PremiumSubscription(int deviceLimit) {
        super(deviceLimit);
    }

    @Override
    public String getSubscriptionName() {
        // TODO Auto-generated method stub
        return "premium";
    }

    @Override
    public int getPrice() {
        // TODO Auto-generated method stub
        return 249;
    }
    @Override
    public void stream1080pVideo() {
        System.out.println("Streaming 1080p video");
    }

}
```

Dependency Inversion Principle

You should depend upon abstractions, not concretions.

Dependency Inversion Principle

```java
package com.ilp.interfaces;

public interface Subscription {
    public String getName();
    public int getprice();

}
```

```java
package com.ilp.entity;

import com.ilp.interfaces.Subscription;

public class BasicSubscription extends SubscriptionType implements Subscription {


    @Override
    public String getName() {
        // TODO Auto-generated method stub
        return "Basic";
    }

    @Override
    public int getprice() {
        // TODO Auto-generated method stub
        return 199;
    }

}
```

Dependency Inversion Principle

```java
package com.ilp.entity;

import com.ilp.interfaces.Subscription;

public class StandardSubscription extends SubscriptionType implements Subscription {



    @Override
    public String getName() {
        // TODO Auto-generated method stub
        return "standard";
    }

    @Override
    public int getprice() {
        // TODO Auto-generated method stub
        return 149;

    }

}
```

```java
package com.ilp.utility;

import com.ilp.entity.BasicSubscription;
import com.ilp.interfaces.Subscription;

public class SubscriptionType {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        Subscription subscription=new BasicSubscription();


        System.out.println("subscriptiontype=" + subscription.getName());

    }

}
```

THANK YOU