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SOLID Principles

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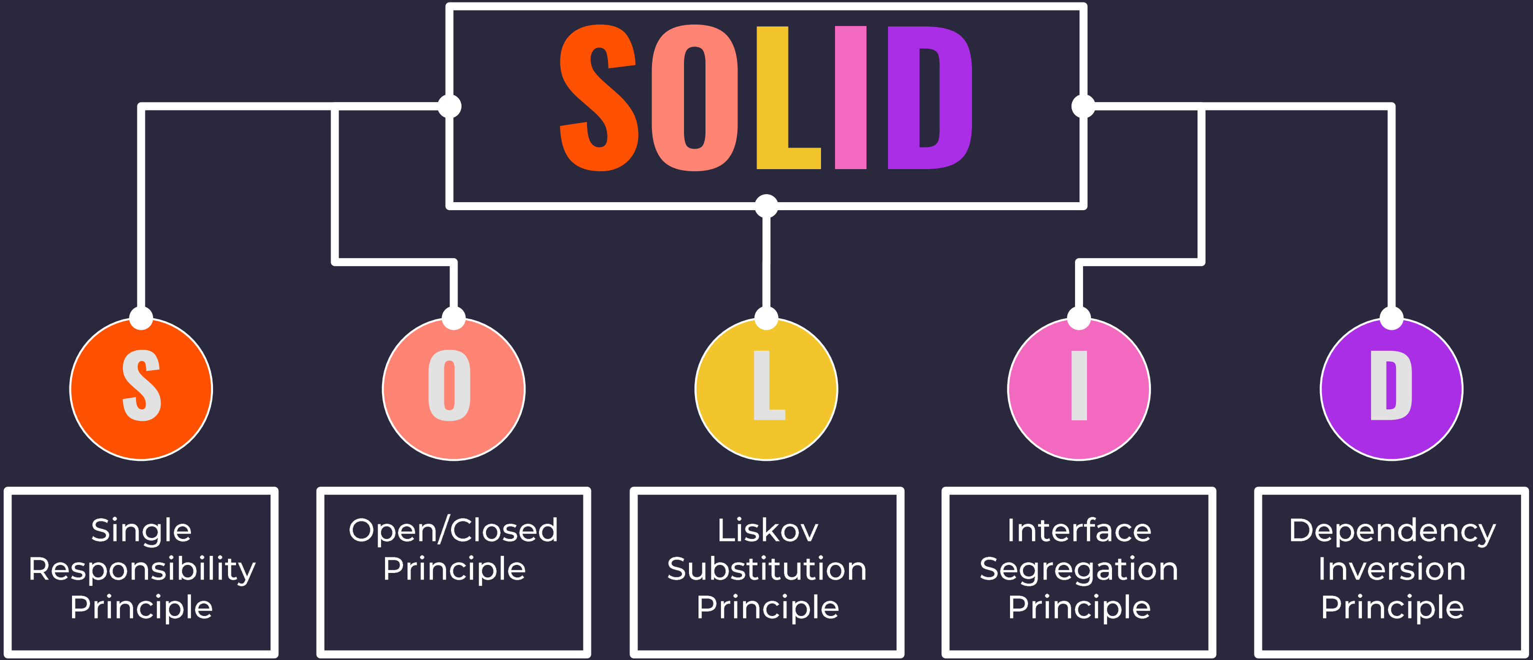
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Single Responsibility Principle
Open/Closed Principle
Liskov Substitution Principle
Interface Segregation Principle
Dependency Inversion Principle

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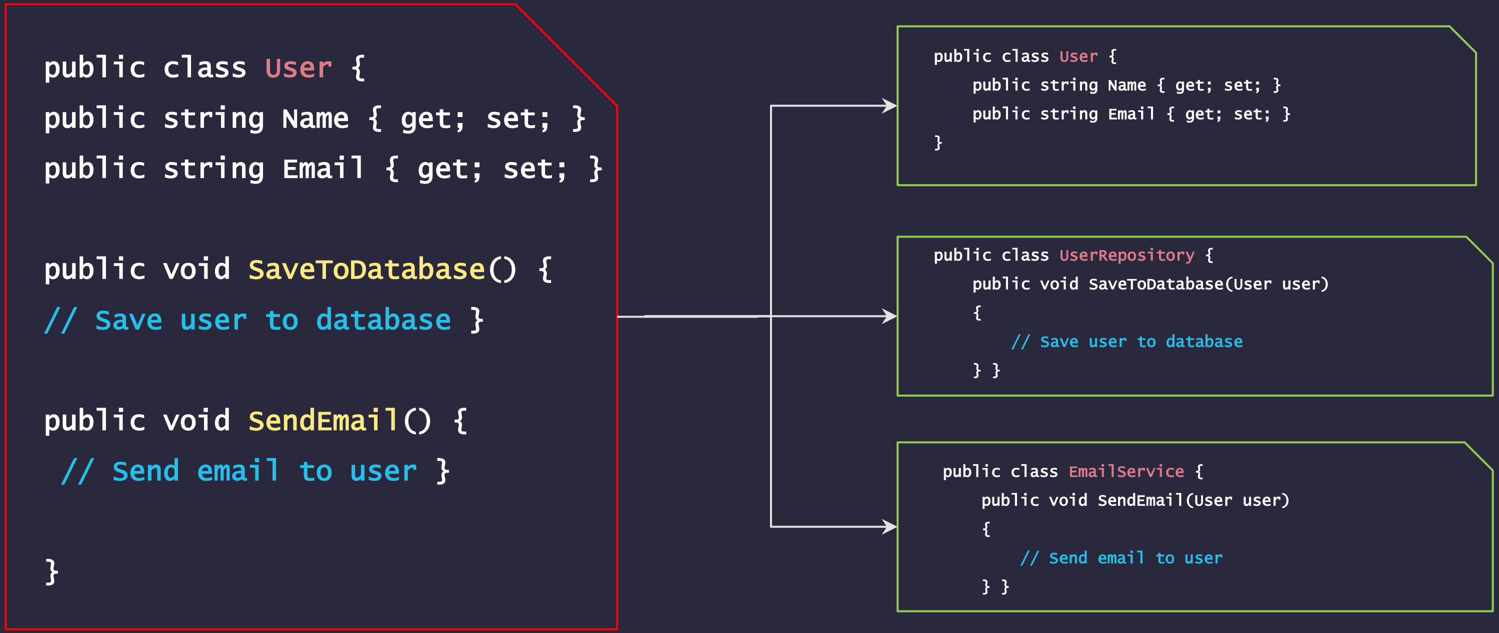
Single Responsibility Principle

Uncle Bob:

"There should never be more than one reason for a class to change."

Single Responsibility Principle



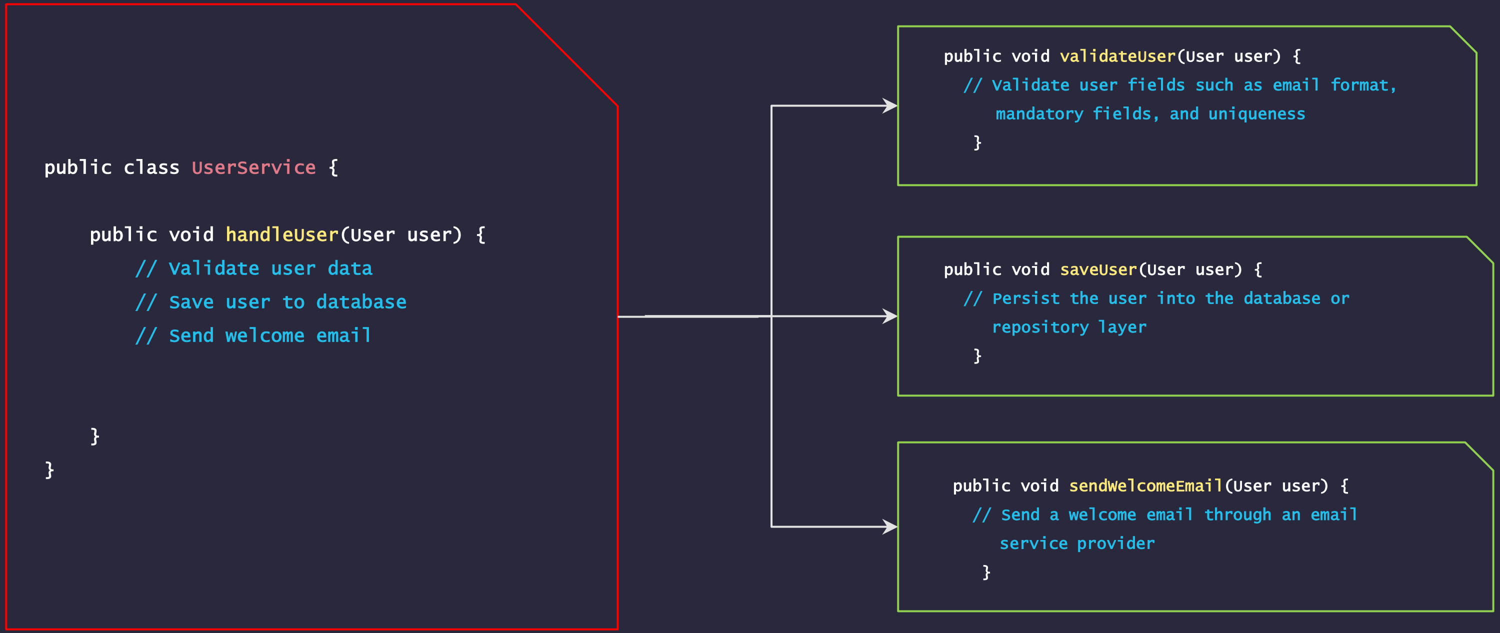
```
public class User {
public string Name { get; set; }
public string Email { get; set; }

public void SaveToDatabase() {
// Save user to database }

public void SendEmail() {
 // Send email to user }

}
```

```
public class User {
    public string Name { get; set; }
    public string Email { get; set; }
}
```

```
public class UserRepository {
    public void SaveToDatabase(User user)
    {
        // Save user to database
    } }
```

```
public class EmailService {
    public void SendEmail(User user)
    {
        // Send email to user
    } }
```

Single Responsibility Principle



```
public class UserService {

    public void handleUser(User user) {
        // Validate user data
        // Save user to database
        // Send welcome email


    }
}
```

```
public void validateUser(User user) {
  // Validate user fields such as email format,
     mandatory fields, and uniqueness
   }
```

```
public void saveUser(User user) {
  // Persist the user into the database or
     repository layer
   }
```

```
public void sendWelcomeEmail(User user) {
  // Send a welcome email through an email
     service provider
   }
```

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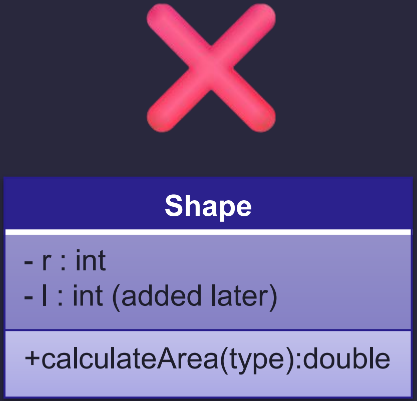
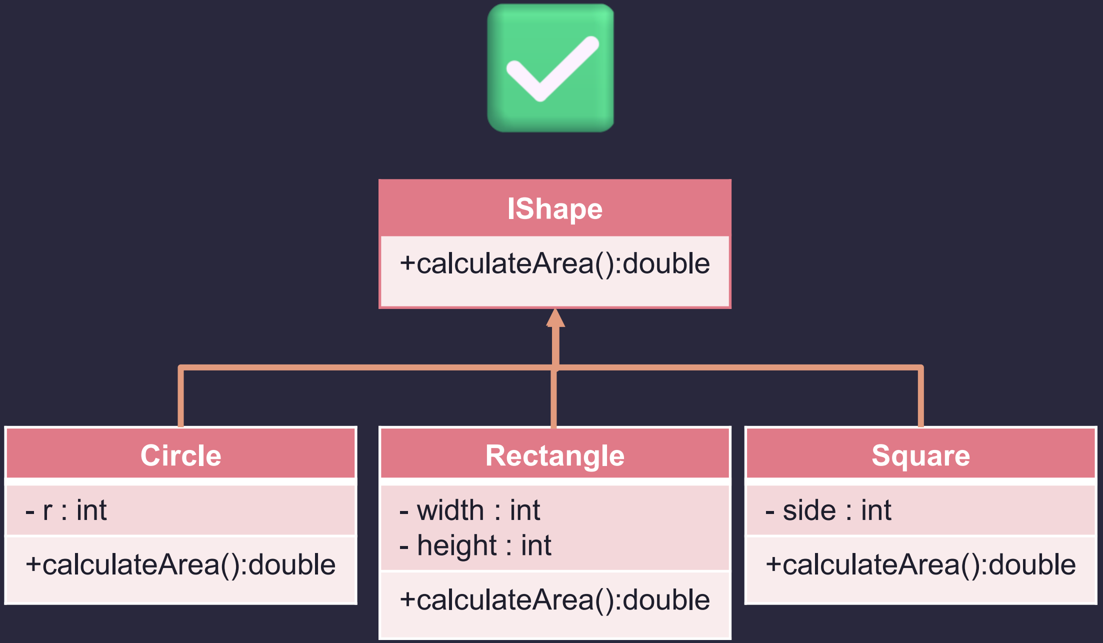
Open/Closed Principle

"The open-closed principle states that software entities (classes, modules, functions, and so on) should be open for extension but closed for modification."

Open/Closed Principle





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Liskov Substitution Principle

"Objects of a superclass should be replaceable with objects of its subclasses without affecting the correctness of the program."

OR

"If you have class B inherits from class A then class A should be replaceable by class B without any changes."

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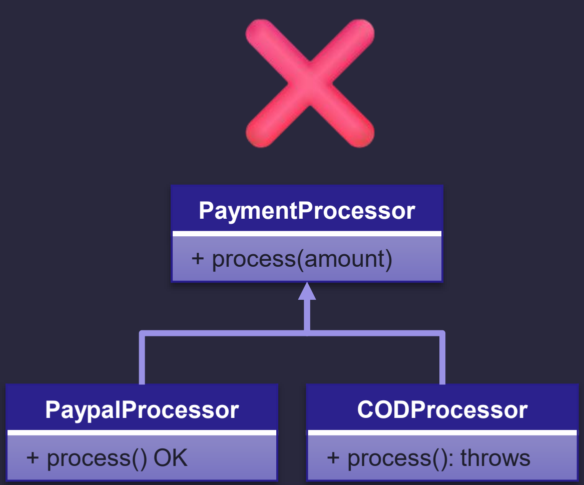
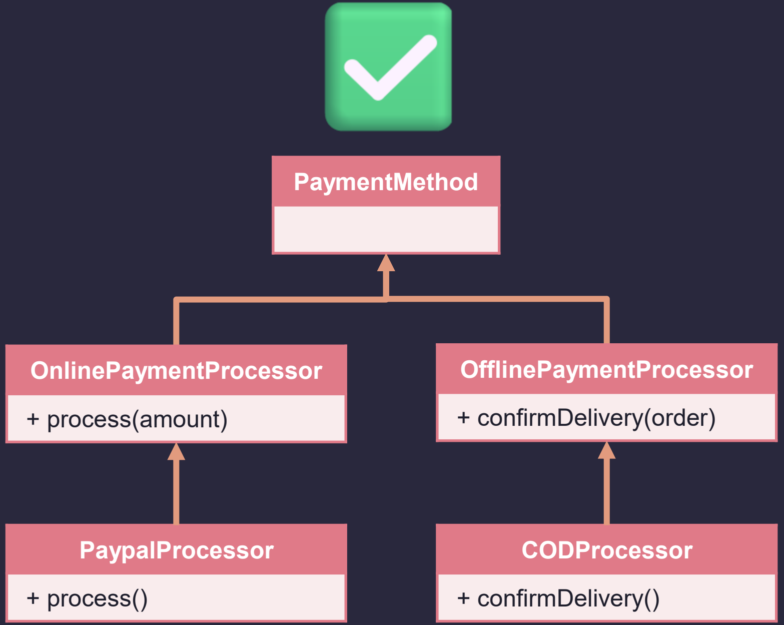
Liskov Substitution Principle





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Interface Segregation Principle

"Clients should not be forced to depend on methods they do not use."

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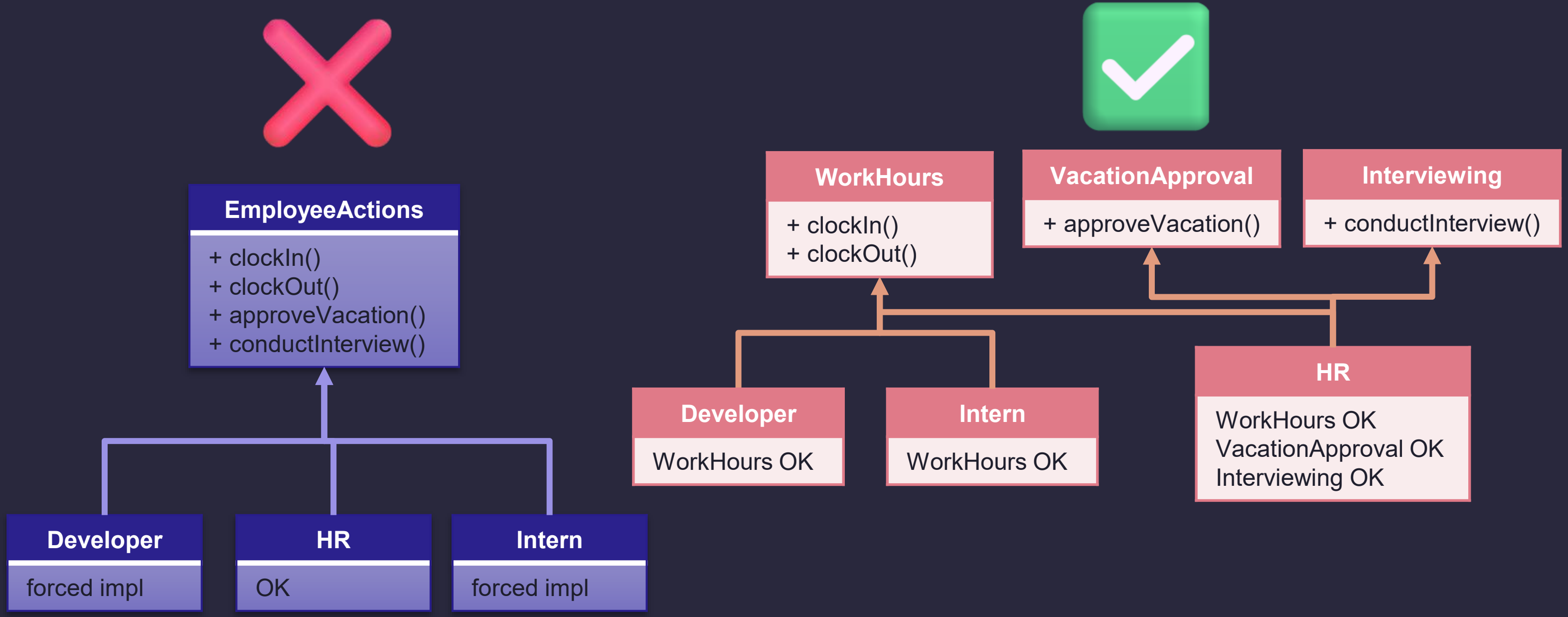
Interface Segregation Principle



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Dependency Inversion Principle

"High-level modules should not depend on low-level modules. Both should depend on abstractions."

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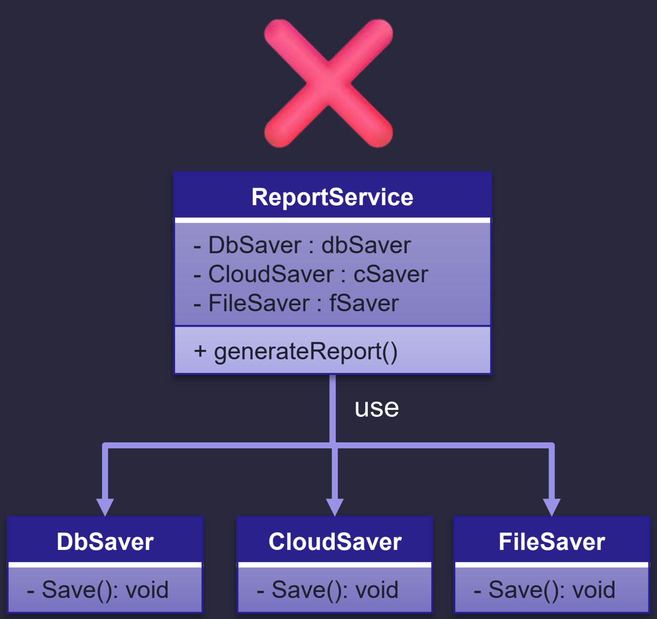
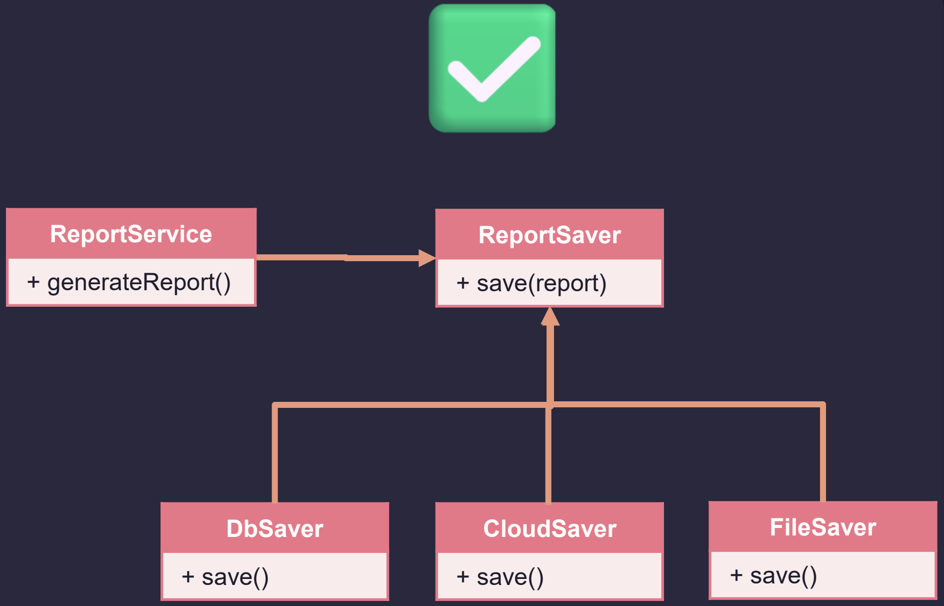
Dependency Inversion Principle





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THANKS !