

## Solid Principles

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Design Patterns

Chapter 1: Intro to Design

Someone has already solved your problems. In this chapter, you'll learn why you can exploit the wisdom and lessons learned by other developers who've been down the same design problem road and survived the trip.

```
classDiagram
    class Duck {
        quack()
        swim()
        display()
    }
    class MallardDuck {
        display()
    }
    class RedheadDuck {
        display()
    }
    Duck <|-- MallardDuck
    Duck <|-- RedheadDuck
```

The `display()` method is abstract, since all ducks.

lots of other types of ducks inherit from the `Duck` class.

How about an interface?

Joe realized that inheritance probably wasn't the answer, because he just got a memo that says that the executives now want to update the product every 6 months.

Encapsulate - Take what varies and "encapsulate" it so it won't affect the rest of your code.

Fewer unintended consequences from code changes and more flexibility in your systems.

HAS-A can be better than IS-A.

The HAS-A relationship is an interesting one: each duck has `FlyBehavior` and a `QuackBehavior`.

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