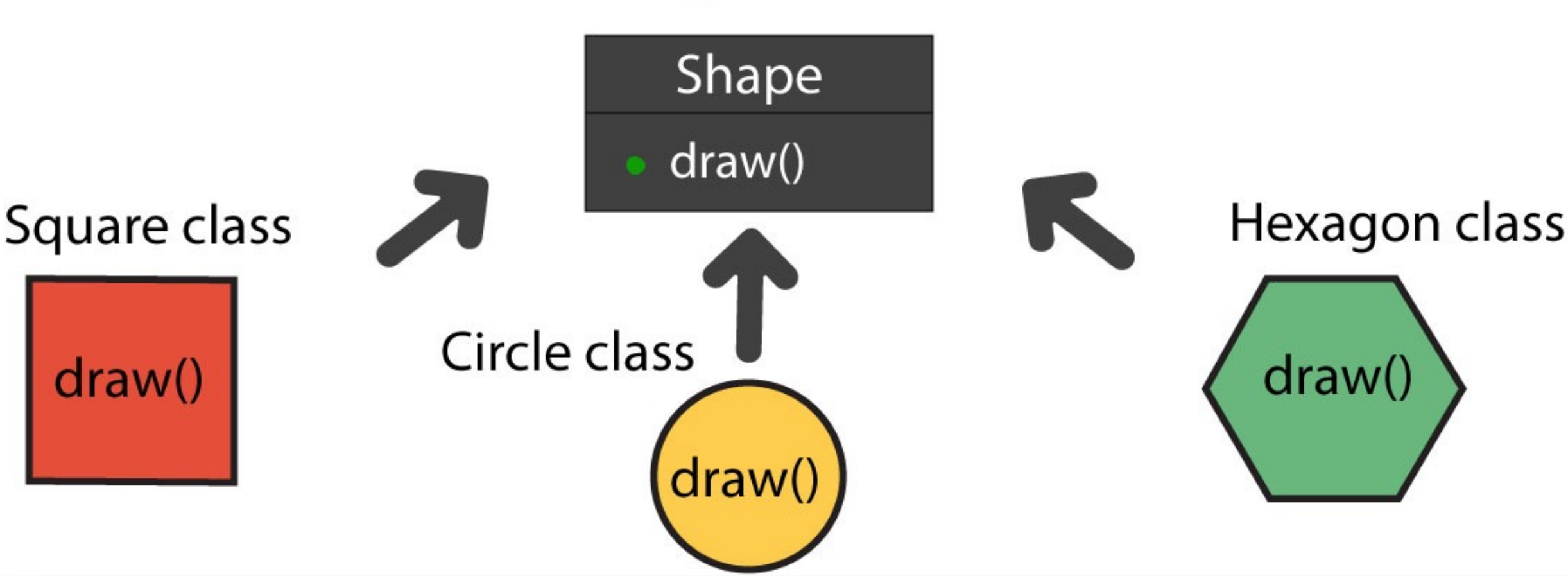
CYDEO

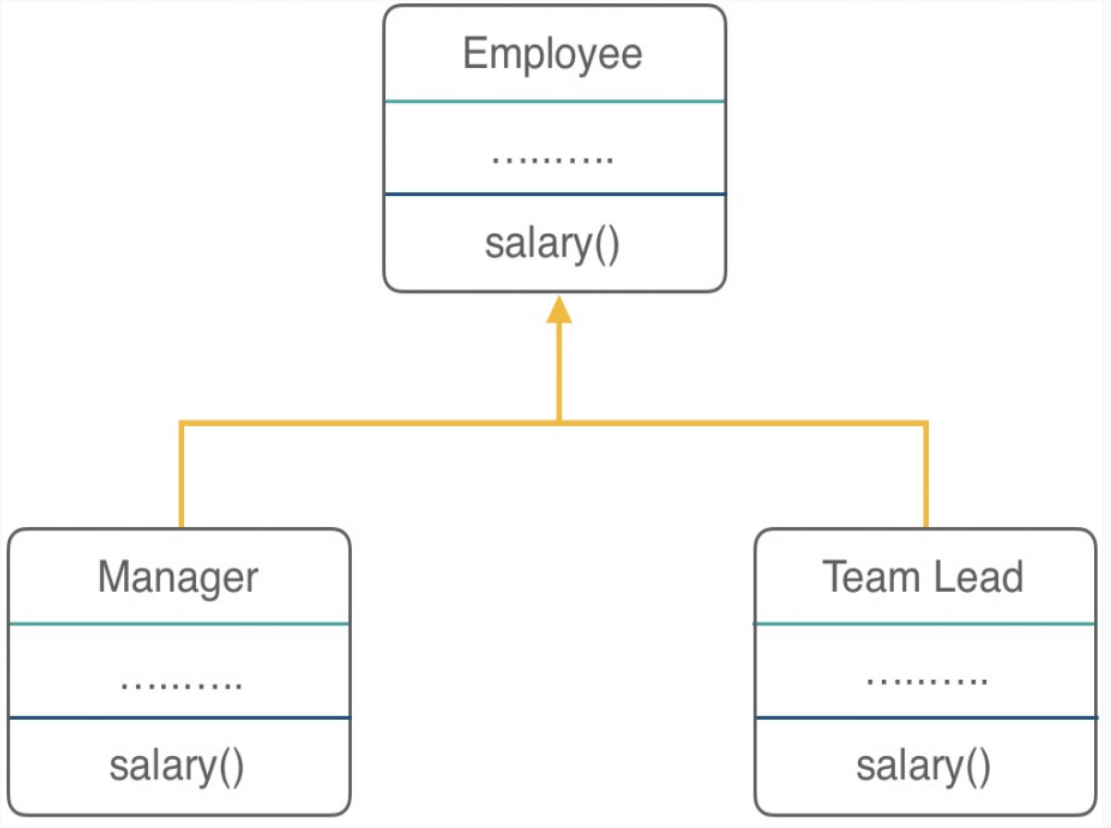
Method Overriding

What Is Method Overriding?



Method Overriding

- Giving different implementations to the method
- One method having multiple different implementations
- Overriding a method must take place in subclass
- Less memory usage and Improves the reusability of our code



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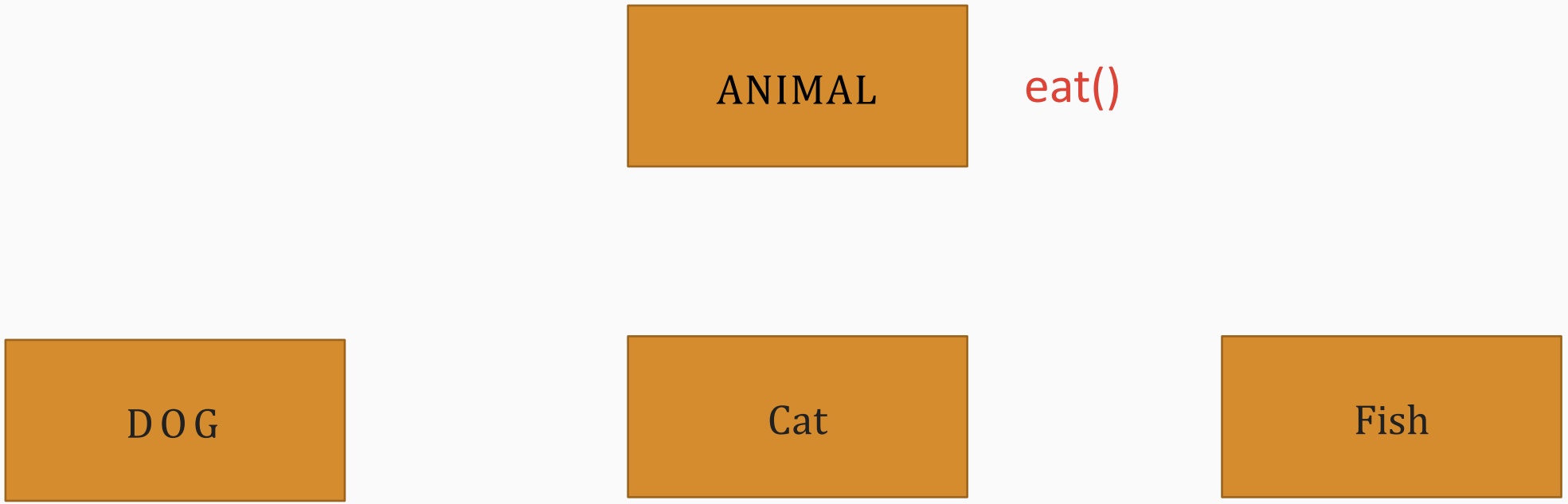
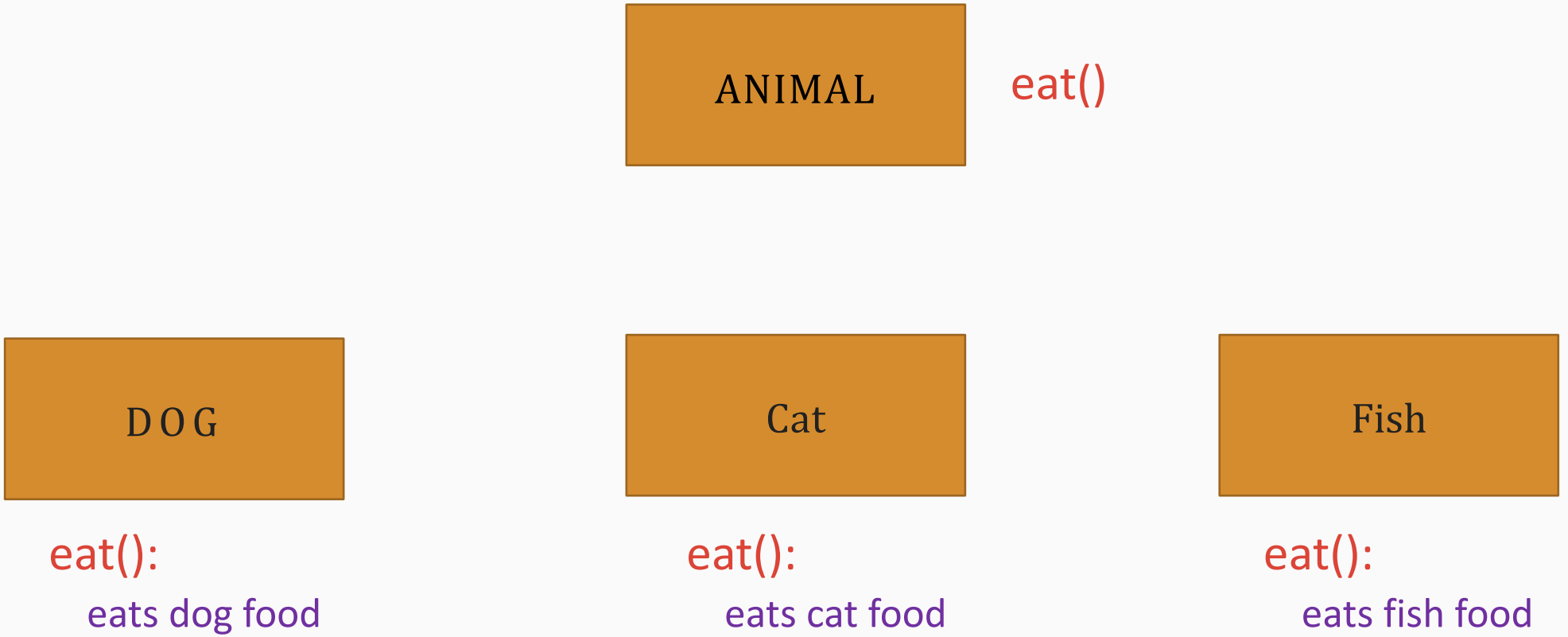
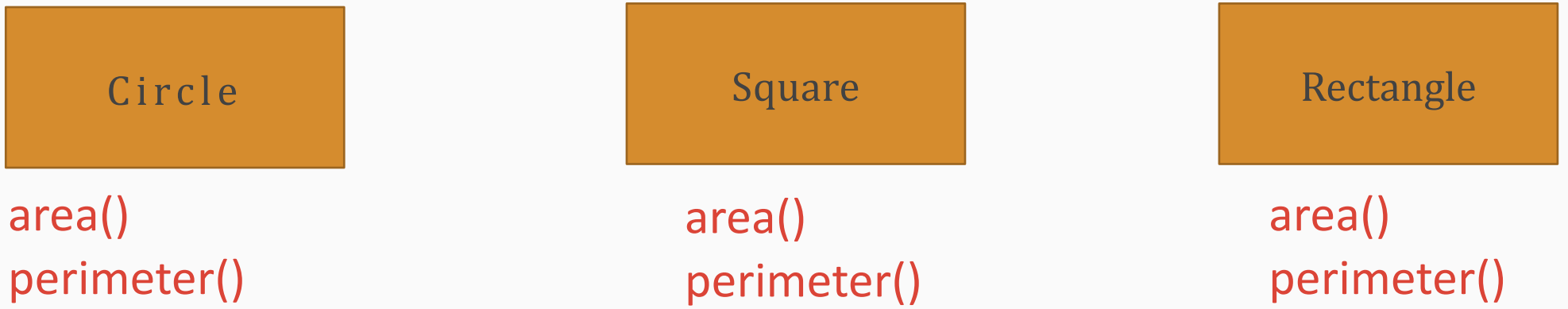


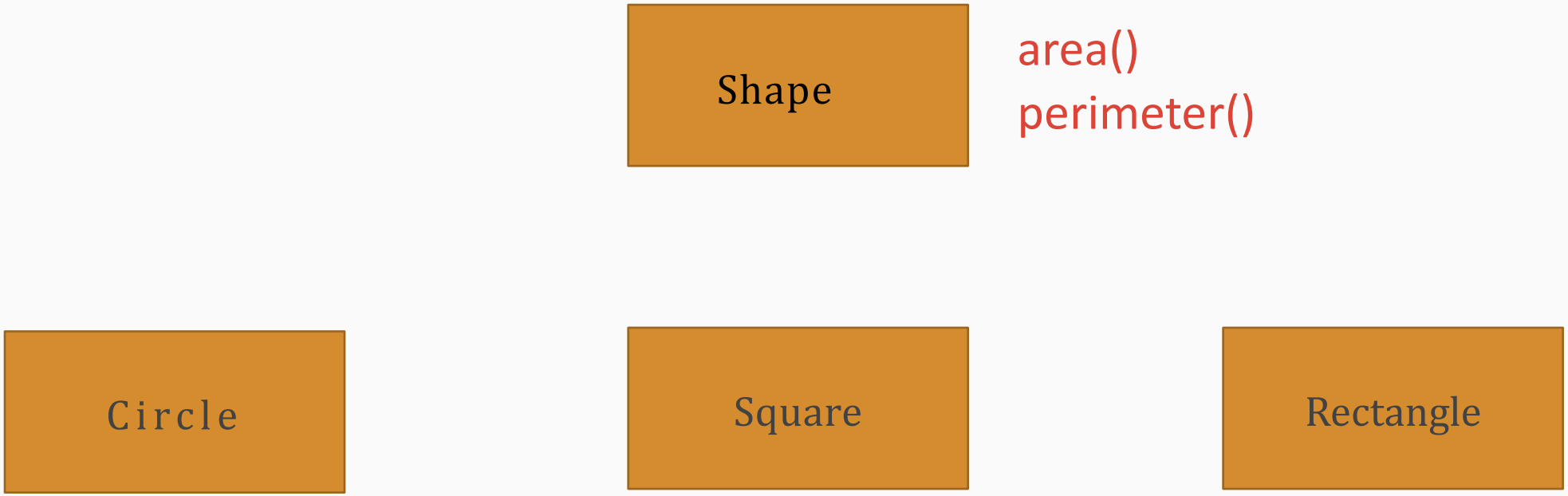
Method Overriding



Method Overriding



Method Overriding



Method Overriding

Shape

area()
perimeter()

Circle

area():
radius * radius * pi

perimeter():
2 * radius * pi

Square

area():
side * side

perimeter():
side * 4

Rectangle

area():
width * length

perimeter():
2 * (width + length)

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Method Overriding Rules

- Must happen in the sub class
- Return type, method name and parameters of the overridden method must be same
- Access modifier of the overridden method needs to be same or more visible
- We can not override methods with private access modifier, or with static & final specifiers
- Only the instance methods (not private & not final) can be overridden

Method Overriding Example

```java
public class Shape{

    public double area(){
        return 0;
    }

    public double perimeter(){
        return 0;
    }

}
```

```java
public class Circle extends Shape{

    public double radius;
    public static double pi = 3.14;

    @Override
    public double area(){
        return radius * radius * pi;
    }

    @Override
    public double perimeter(){
        return 2 * radius * pi;
    }

}
```

Overriding vs Overloading

Method Overloading	Method Overriding
Method overloading is performed within class	Method overriding occurs in two classes that have IS-A relationship
parameter must be different	parameter must be same
Access specifier can be changed	Access specifier must not be more restrictive than original method
private and final methods can be overloaded	private and final methods can not be overridden
Return type of method does not matter, it can be same or different	Return type must be same in method overriding