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## Overriding Methods in Python

### Overriding Methods in Python

Method overriding occurs when a **child class** provides its own version of a **method** that already exists in the **parent class**.

The **child's method** "overrides" the parent's method when called from the child object.

#### Why use it?

- To **customize behavior** of inherited methods.
- Allows **polymorphism** (same method name, different behavior in different classes).

#### Basic Solved Example:

```
class Animal:
```

```
    def sound(self):
        print("Some generic animal sound")
```

```
class Dog(Animal):
```

```
    def sound(self): # Overriding parent method
        print("Dog barks")
```

```
class Cat(Animal):
```

```
    def sound(self): # Overriding parent method
        print("Cat meows")
```

```
a = Animal()
```

```
d = Dog()
```

```
c = Cat()
```

```
a.sound() # Calls Animal's method
```

```
d.sound() # Calls Dog's overridden method
```

```
c.sound() # Calls Cat's overridden method
```

#### Output:

Some generic animal sound

Dog barks

Cat meows

#### Explanation:

1. Animal has a method sound().
2. Dog and Cat **override** sound() with their own behavior.
3. When we call d.sound() → Python uses **Dog's version**, not the parent's.

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**Important Notes:**

1. Method name in child must be the same as in parent.
2. Signature (parameters) can be same or compatible.
3. You can still call the parent's method using super() if needed.

```
class Dog(Animal):
    def sound(self):
        super().sound() # Call parent method
        print("Dog barks too")
```

**Output if called:**

Some generic animal sound  
Dog barks too

**NOTE:** Overriding in Python means redefining a method of a parent class in its child class to change how it works. It allows the child class to provide its own version of a method that already exists in the parent class.

- Works only with inheritance.
- The method name and parameters must be the same in both parent and child classes.
- When the method is called using the child object, the child's version runs. Used to change or extend the functionality of the parent class method.

