61A Lecture 15

Announcements

Object-Oriented Programming

Object-Oriented Programming

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A method for organizing programs

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A method for organizing programs

- Data abstraction

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- Data abstraction
- Bundling together information and related behavior

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- Each object has its own local state

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- Each object has its own local state
- Each object also knows how to manage its own local state, based on method calls

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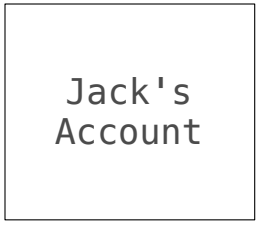

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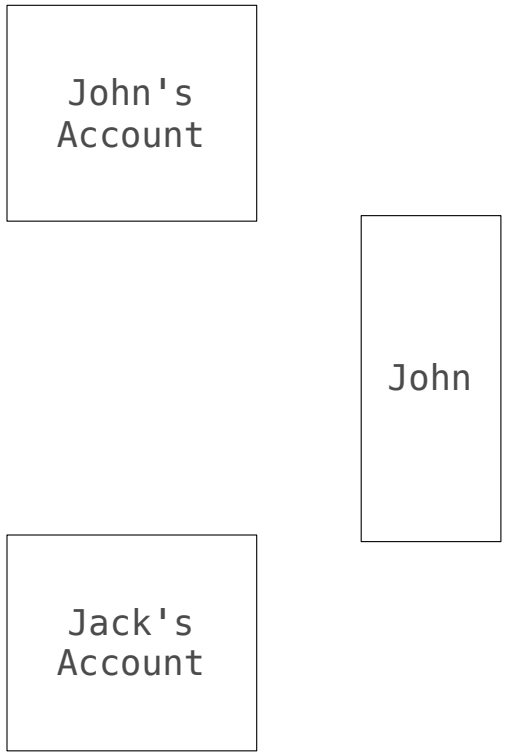

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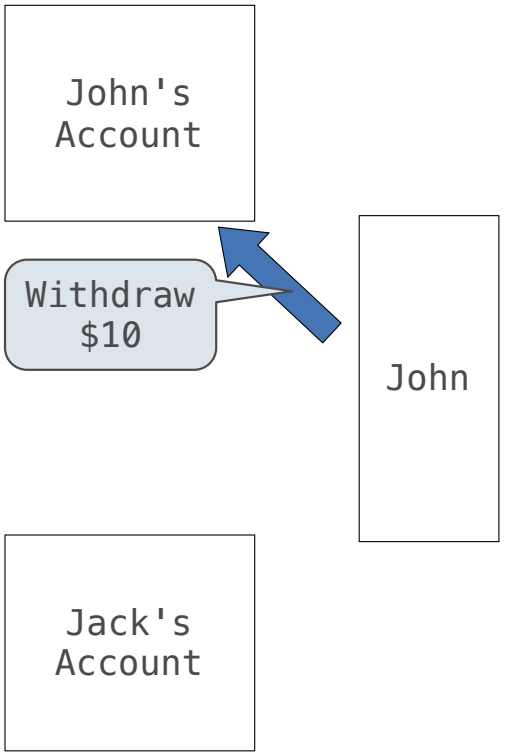

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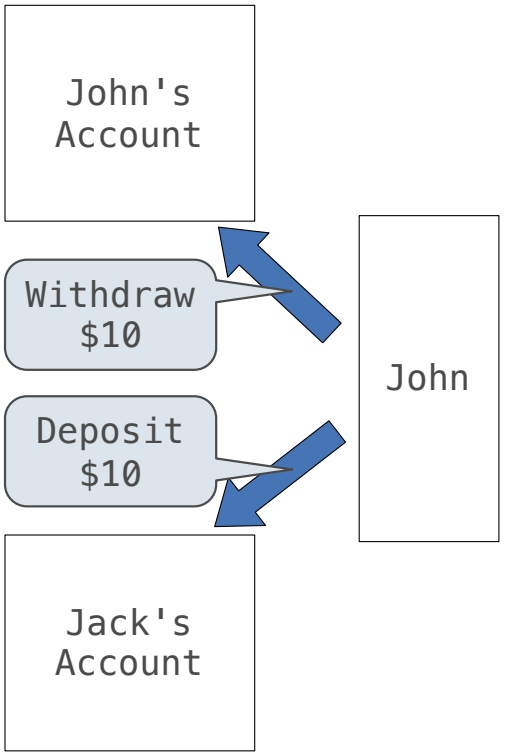

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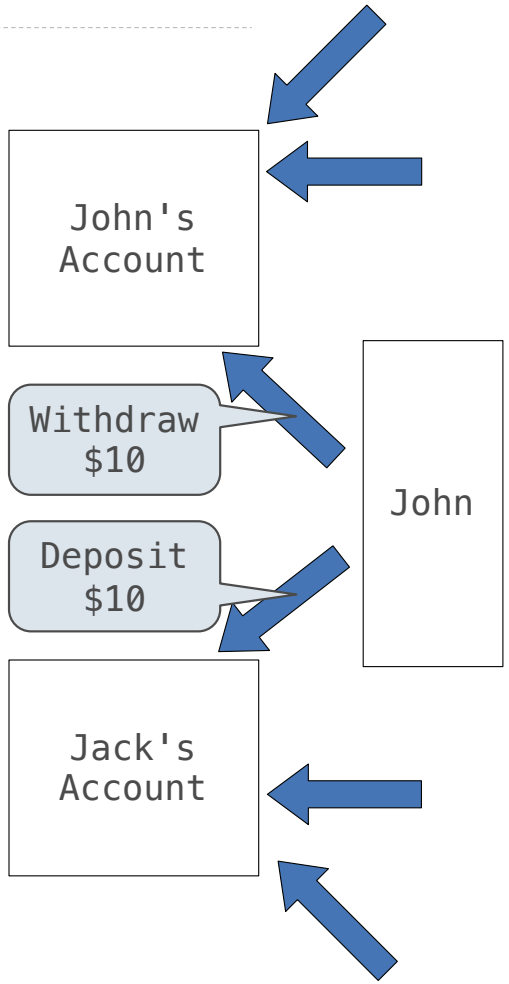

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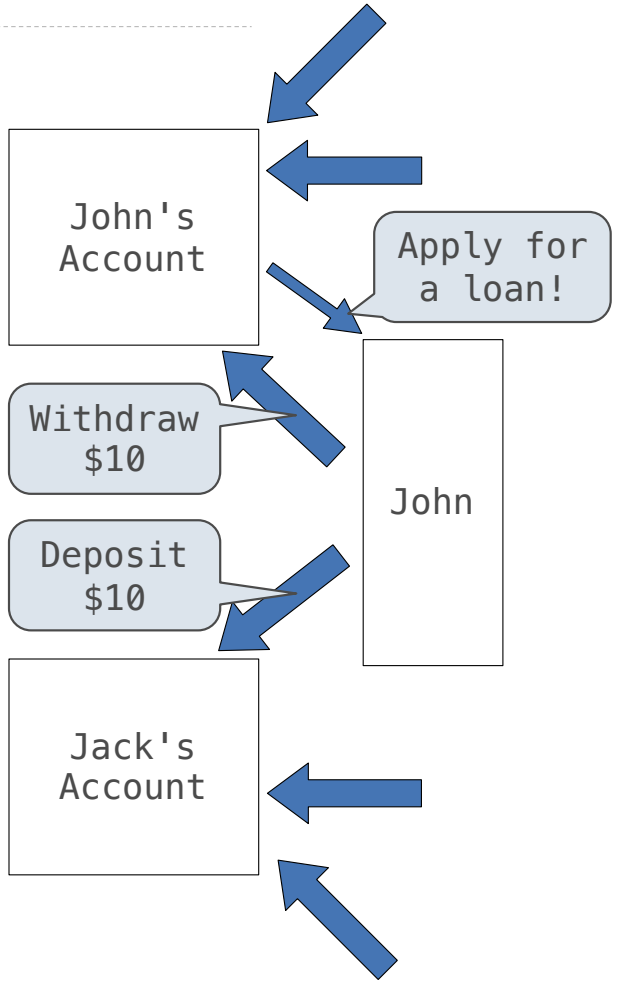

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>>> a.holder
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Idea: All bank accounts should have withdraw and deposit behaviors that all work in the same way

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>>> a.deposit(15)
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Idea: All bank accounts have a balance and an account holder; the Account class should add those attributes to each newly created instance

Idea: All bank accounts should have withdraw and deposit behaviors that all work in the same way

Better idea: All bank accounts share a withdraw method and a deposit method

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Class Statements

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    <suite>
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>>> Clown.nose
'big and red'
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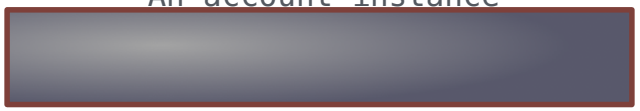

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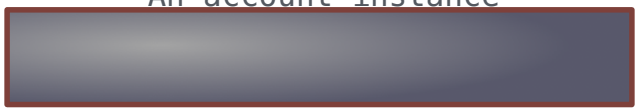

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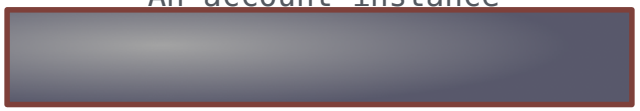

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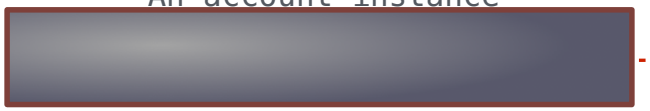

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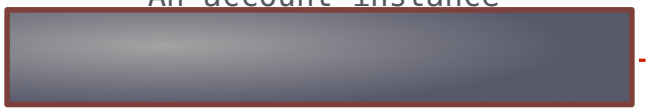

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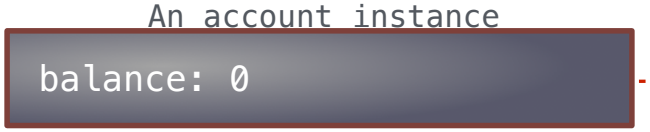

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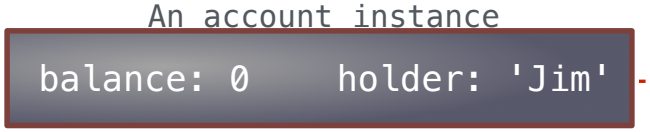

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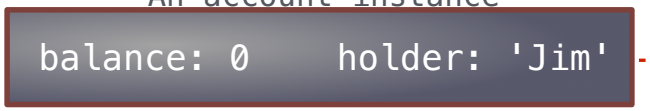

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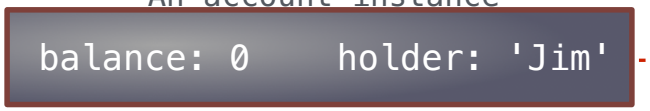

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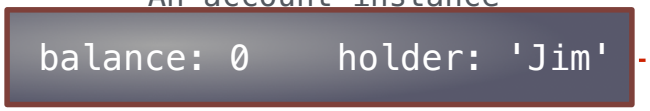

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True
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```
class Account:
```

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```
            def __init__(self, account_holder):
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```
            self.balance = 0
```

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```
        self.holder = account_holder
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```
        return self.balance
```

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```
    def withdraw(self, amount):
```

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```
        if amount > self.balance:
```

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```
            return 'Insufficient funds'
```

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```
        self.balance = self.balance - amount
```

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Bound to self

Invoked with one argument

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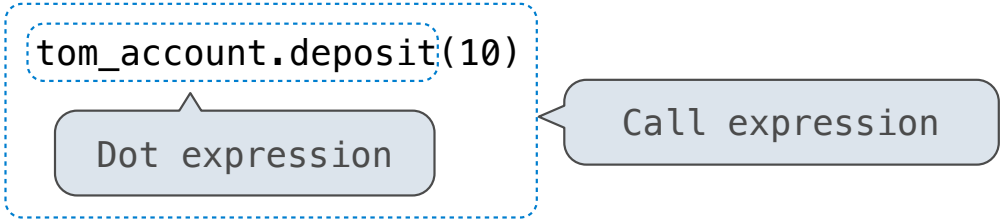

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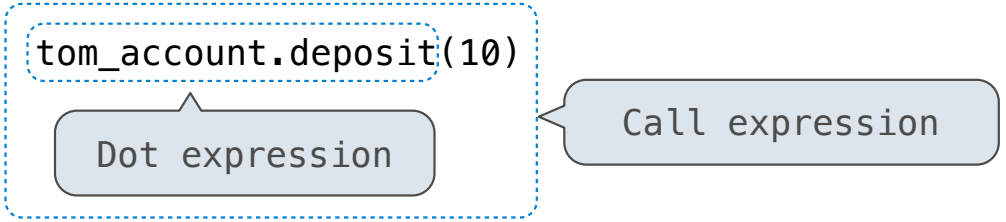

(Demo)

Attributes

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Accessing Attributes

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Function: all arguments within parentheses

Method: One object before the dot and other arguments within parentheses

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4. That value is returned unless it is a function, in which case a bound method is returned instead

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