

Discussion 06

Inheritance, Midterm Review

Aditya Balasubramanian

`aditbala [at] berkeley [dot] edu`

Slides available at `teaching.aditbala.com`

Announcements

- Lab 4 due TODAY (7/12)
- Homework 3 due TOMMOROW (7/13)
- CATS checkpoint due TODAY (7/12)
 - Must add partners on okpy
- Midterm is on THURSDAY 6 - 9 (7/14)
 - Please read the entirety of the [Midterm Logistics Piazza post](#).
 - To request a remote exam, see [this Piazza post](#).
- Mid-Semester Survey at end (15 min at end)

Inheritance



```
class Dog():
    def __init__(self, name, owner):
        self.name = name
        self.owner = owner
    def eat(self, thing):
        print(self.name + " ate a " + str(thing) + "!")
    def talk(self):
        print(self.name + " says woof!")

class Cat():
    def __init__(self, name, owner, lives=9):
        self.name = name
        self.owner = owner
        self.lives = lives
    def eat(self, thing):
        print(self.name + " ate a " + str(thing) + "!")
    def talk(self):
        print(self.name + " says meow!")
```

What's the problem?

- Too much repeated code
- How to avoid this problem?
- Inheritance!

```
class Dog(Pet): # Dog inherits the Pet class - as in, all Dogs are Pets
    ...
```

Now with Inheritance!

```
class Pet():
    def __init__(self, name, owner):
        self.name = name
        self.owner = owner
    def eat(self, thing):
        print(self.name + " ate a " + str(thing) + "!")
    def talk(self):
        print(self.name)

class Dog(Pet): # Inherits all methods/variables from the Animal class
    def talk(self):
        print(self.name + ' says woof!')
```

Inheritance - super()

- `super()` will refer to methods in the parent class

```
class Cat(Pet): # Inherits all methods/variables from the Animal class
    def __init__(self, name, owner, lives = 9):
        super().__init__(name, owner)
        # same as calling Pet.__init__(self, name, owner) from here
        self.lives = 9
    def talk(self):
        print(self.name + ' says meow!')
```

Practice!

Mid-Semester Survey

<http://go.cs61a.org/mid-sem-survey>

Thank you

Attendance Form -> <https://tinyurl.com/adit-disc06>

Anon Feedback -> <https://tinyurl.com/adit-anon>