BEWD - Classes and Objects

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AGENDA

- Creating classes & objects
- Lab time

HASHES TO CLASSES

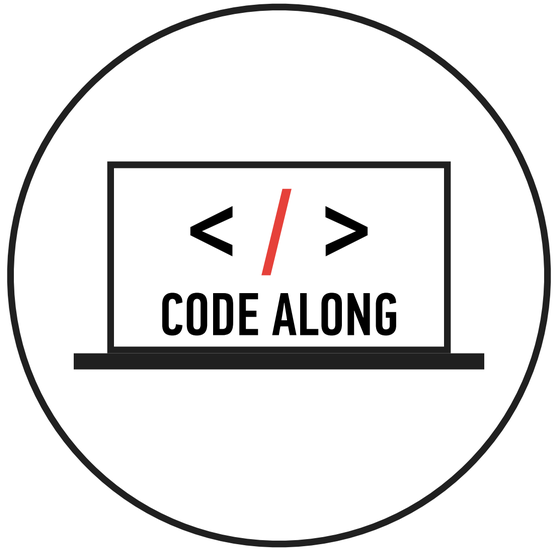
HASHES PROS AND CONS

What are some pros and cons of using hashes?

CLASSES & OBJECTS

CLASSES TO THE RESCUE

- What is a class?
- What is an object?
- Why / when to use them?



Creating Objects

CREATING OBJECTS

RECAP

ADDING VARIABLES TO A CLASS

```
# Hashes
story = {}
story[:title] = "Piglets probed over parliament terror plot"
story[:title] #=> Returns your value

# With an object
class Story
  attr_accessor :title
end

story = Story.new
story.title = "Piglets probed over parliament terror plot"
story.title #=> Returns your value
```

CREATING OBJECTS

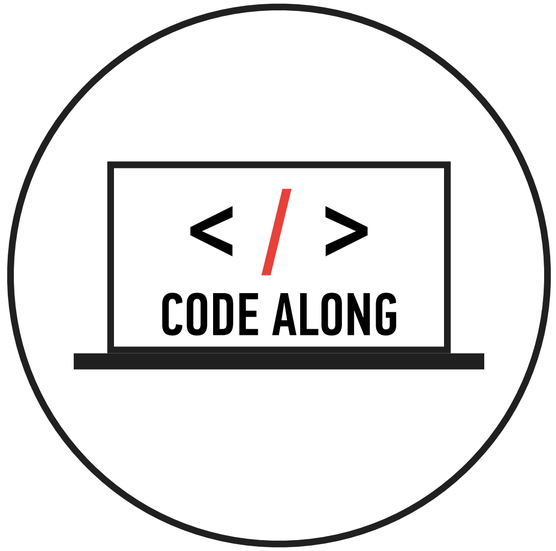
RECAP

ADDING METHODS TO A CLASS

```
class Story
  attr_accessor :title, :category, :upvotes
  def upvote!
    @upvotes += 1
  end
end

story = Story.new
story.title = "Piglets probed over parliament terror plot"
story.category = "bacon"
story.upvotes = 1

story.upvote!
story.upvotes #=> 2
```



Apartment

APARTMENT

RECAP

- The **initialize** method is invoked when Apartment.new is called
- The **to_s** method called automatically on objects interpolated in a string (e.g. with puts)
- **to_s** can be overridden:

```
class My_Class
  def to_s
    "The puts method was called."
  end
end

>> my_object = My_Class.new
>> puts my_object
The puts method was called.
=> nil
```

APARTMENT

RECAP

- Classes allow us to keep code DRY.

- In object oriented programs variables have **scope** (key scopes are local vs @instance).
- attr_accessor allows a variable to be accessed outside of a method

- We can create class methods by using self.method_name.
- Class methods (e.g. Apartment.new) can be called on a class (which is an object too!)

CLASSES & OBJECTS

TOO MANY CLASSES IN ONE .RB FILE

```
# blt.rb
class BLT
  #…
end

class Bacon
  #…
end

class Lettuce
  #…
end

class Tomato
  #…
end
```

CLASSES & OBJECTS

EVERYONE GETS A FILE!

```
# blt.rb
require_relative 'bacon'
require_relative 'lettuce'
require_relative 'tomato'

class BLT
  #…
end
```

CLASSES & OBJECTS

CREATING A LINK BETWEEN CLASSES IN SEPARATE .RB FILES

- require (we've seen this when working with APIs)
- require_relative
- $LOAD_PATH.unshift(File.dirname(__FILE__))
  (use to load files in irb)

Apartment Objects

RESOURCES

CHEAT SHEET

CLASSES & OBJECTS

```
# Create A Class

class class_name
   #variables and method for this class.
end


# Creating Objects

class GA_course
   def initialize (course_name)
      @course_name = course_name
   end

   def announce_course
      puts "GA has a course on #{@course_name}"
   end
end

my_course = GA_course.new("BEWD")
other_course = GA_course.new("UXD")

my_course.announce_course
other_course.announce_course

#=> GA has a course on BEWD
#=> GA has a course on UXD
```

VARIABLE SCOPE

Scope	Example	Explanation
Local	name	Available in the same method
Instance	@name	Unique value for each instance of a class available from any method in that class.
Class	@@name	Same shared value for all instances of a class, available from any method of that class.
Global	$name	Same shared value for all code running within a single Ruby program.

- What is Object Oriented Programming [video]
  http://www.youtube.com/watch?feature=endscreen&v=SS-9y0H3Si8&NR=1

- What is Object Oriented Programming [Book Chapter]
  http://ruby.bastardsbook.com/chapters/oops/

- Introduction to Objects [Ruby Monk]
  http://rubymonk.com/learning/books/1-ruby-primer/chapters/6-objects/lessons/35-introduction-to-objects

- Building your Own class [Ruby Monk]
  http://rubymonk.com/learning/books/1-ruby-primer/chapters/7-classes/lessons/40-building-your-own-class