

Object Oriented Ruby

A Brief Intro

Defining a Class

```
class Person
  # Constructor
  def initialize(name)
    @name = name
  end
end
```

Instance variables start with @

Defining a Class

```
class Person
  def initialize(name) # Constructor
    @name = name
  end

  def name # Getter
    @name
  end

  def name=(n) # Setter
    @name = n
  end
end
```

Defining a Class

attr_accessor automatically generates the getter and setter:

```
class Person
  attr_accessor :name
  def initialize(name) # Constructor
    @name = name
  end
end
```

Subclasses

```
class Shape
end

class Rectangle < Shape
  def initialize(width, height)
    @width = width
    @height = height
  end

  def area
    @width * @height
  end

  def perimeter
    2 * (@width + @height)
  end
end

class Circle < Shape
  def initialize(radius)
    @radius = radius
  end

  def area
    Math::PI * @radius**2
  end

  def perimeter
    2 * Math::PI * @radius
  end
end
```

Polymorphism

```
class Animal
  attr_accessor :name
  def initialize(name)
    @name = name
  end
end

class Cat < Animal
  def talk
    "Meow"
  end
end

class Bird < Animal
  def talk
    "Tweet"
  end
end

class Dog < Animal
  def talk
    "Woof"
  end
end
```

Including a Module

```
class Person
  include Comparable
  attr_accessor :height
  attr_reader :name
  def <=> (other)
    @height <=> other.height
  end

  def initialize(name, height)
    @name = name
    @height = height
  end
end
```

Requires <=> to be implemented

