Ruby Monstas

Session 12

Agenda

- Recap / Questions
- Classes / Objects and OOP
- Exercises

Recap

Questions

Blocks

Symbols

Ranges

Classes & Objects

Object-oriented programming

We know them already!

We saw them already in the past.

```
my_array = Array.new

my_hash = Hash.new
```

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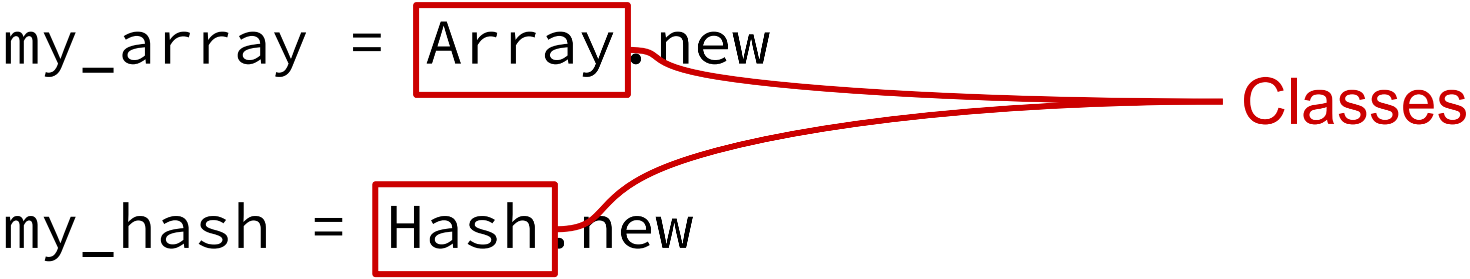

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Classes

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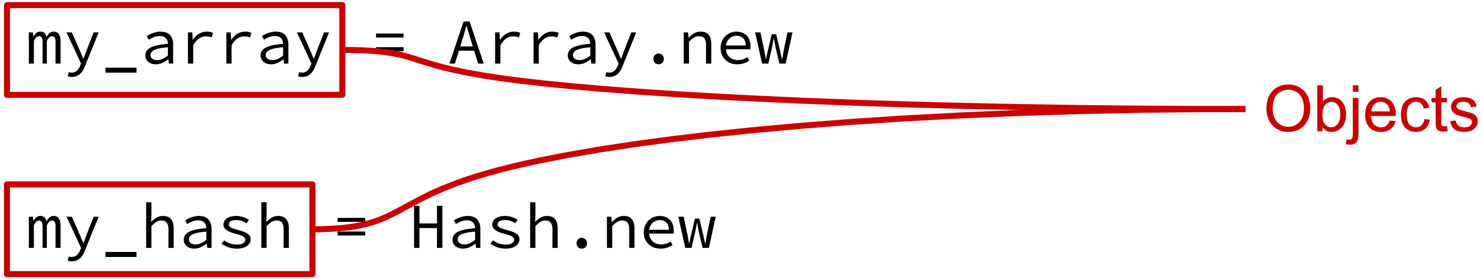

```
my_array = Array.new

my_hash = Hash.new
```

Objects

The class method

We can ask all our objects what class they are.

```
irb> "Hello World!".class
=> String

irb> { name: "Ferdinand", location: "Zurich"
}.class
=> Hash
```

Classes vs. Objects

So what are classes and what are objects?

Classes are **ideas**, and **objects** are manifestations of these ideas, or actual **things**.

Example: Class Person

Let’s dive into an example. We have a Person class (idea), which can have many person objects (manifestations)

```
irb> lucy = Person.new("Lucy")
=> #<Person:0x007f8b8289a868>
irb> lucy.name
=> "Lucy"
```

Example: Class Person

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

  def name
    @name
  end
end
```

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irb> lucy.name
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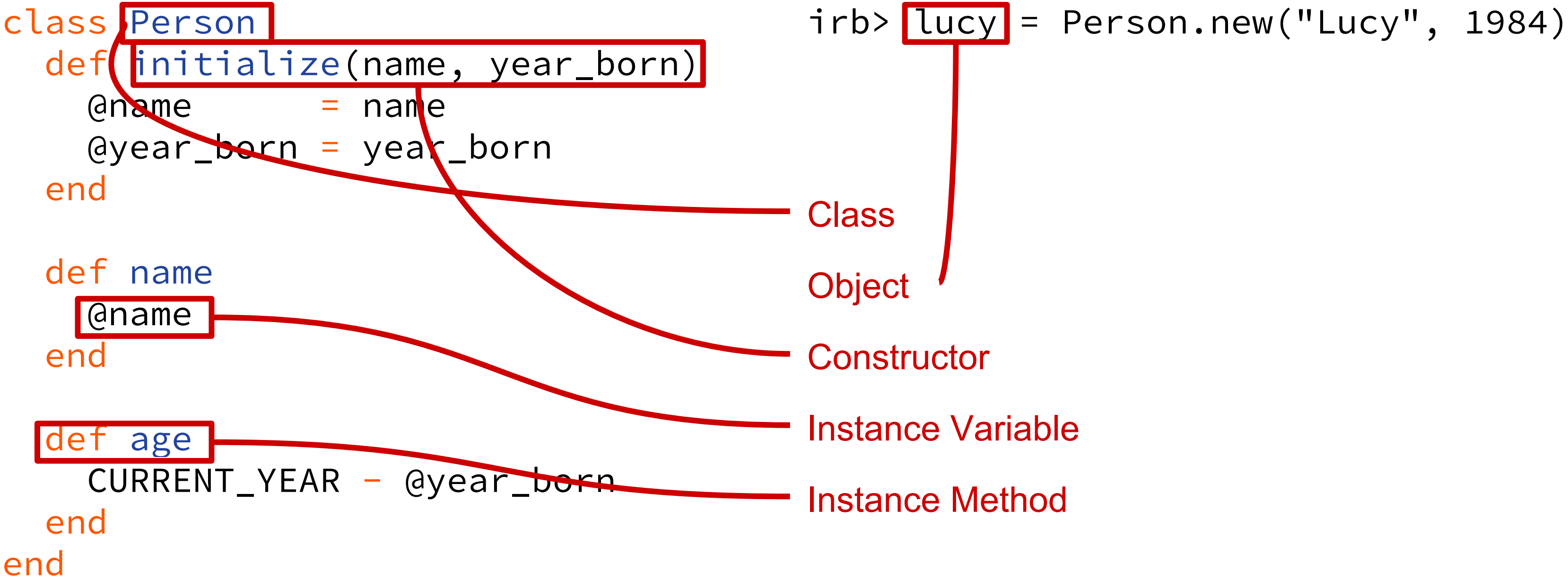
```

Example: Class Person



```
class Person
  def initialize(name, year_born)
    @name      = name
    @year_born = year_born
  end

  def name
    @name
  end

  def age
    CURRENT_YEAR - @year_born
  end
end
```

```
irb> lucy = Person.new("Lucy", 1984)
```

Class

Object

Constructor

Instance Variable

Instance Method

Example: Class Person

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class Person
  def initialize(name, year_born)
    @name      = name
    @year_born = year_born
  end

  def name
    @name
  end

  def age
    CURRENT_YEAR - @year_born
  end
end
```
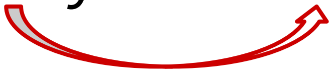

```
irb> lucy = Person.new("Lucy", 1984)
=> #<Person:0x007f8b8289a868>

irb> lucy.name
=> "Lucy"

irb> lucy.age
=> 31
```

Instance

Objects that are created from classes are also called **an instance**. Therefore objects are **instantiated** from a class.

```
irb> lucy = Person.new("Lucy", 1984)
```



is an instance of

Instance

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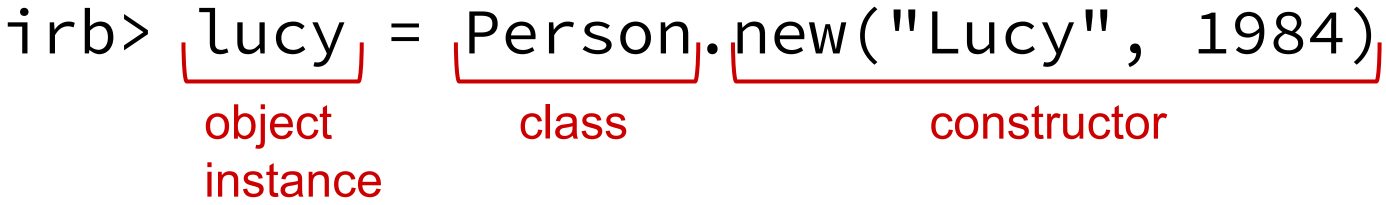

```
irb> lucy = Person.new("Lucy", 1984)
```

Summary

Classes are introduced with `class` keyword

Classes are ideas, objects are things

Every object knows its class

Objects offer methods which are defined in classes

Each instance (object) has “unique” data in it that it operates on

Time to practice

Let’s get to it!