Variables

Outline

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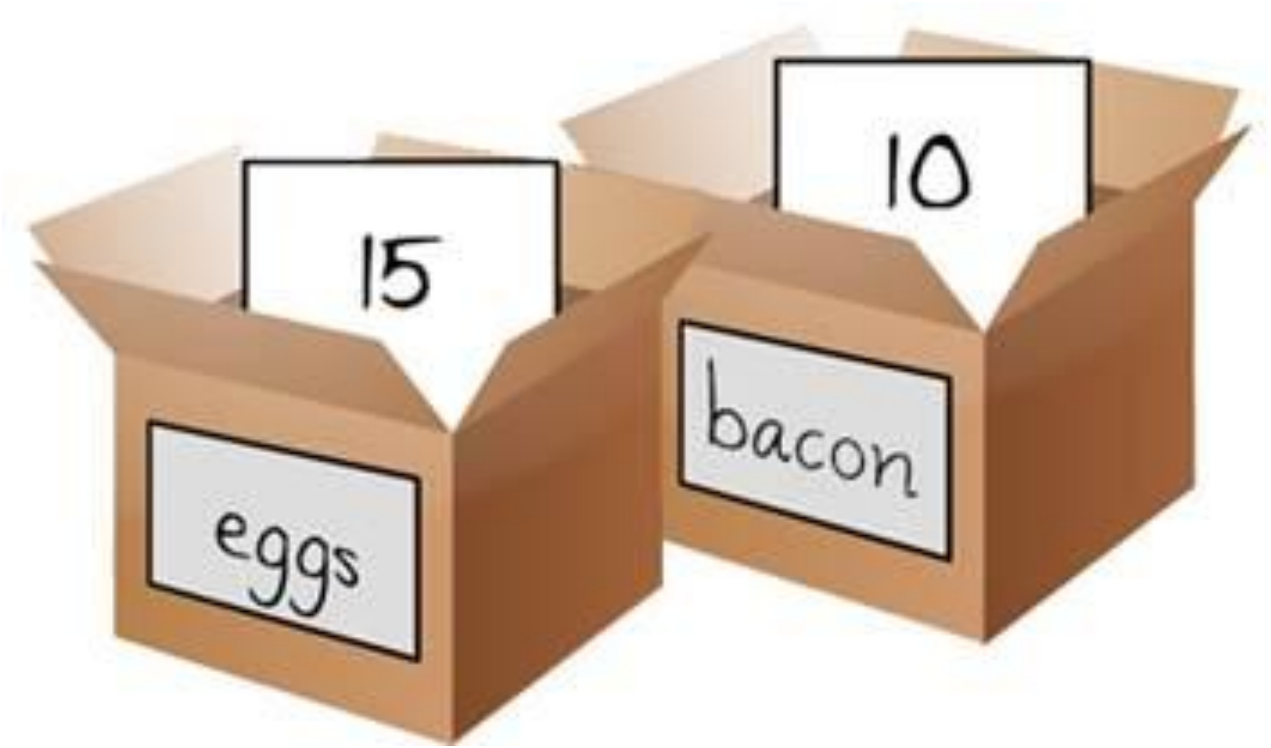
1. What is variable?



video

2. Ruby variables

- Global variable - $ sign
  - ➔ Available everywhere within your Ruby script
- Local variable
  - ➔ It depends on the scope (create new scope with new class, new module, new method)
- Class variable - @@ sign
  - ➔ Available from the class definition and any sub-classes. Not available from anywhere outside.
- Instance variable - @ sign
  - ➔ Available only within a specific object, across all methods in a class instance. Not available directly from class definitions.
- Constants - Begin with a capital letter

3. Ruby variable scope

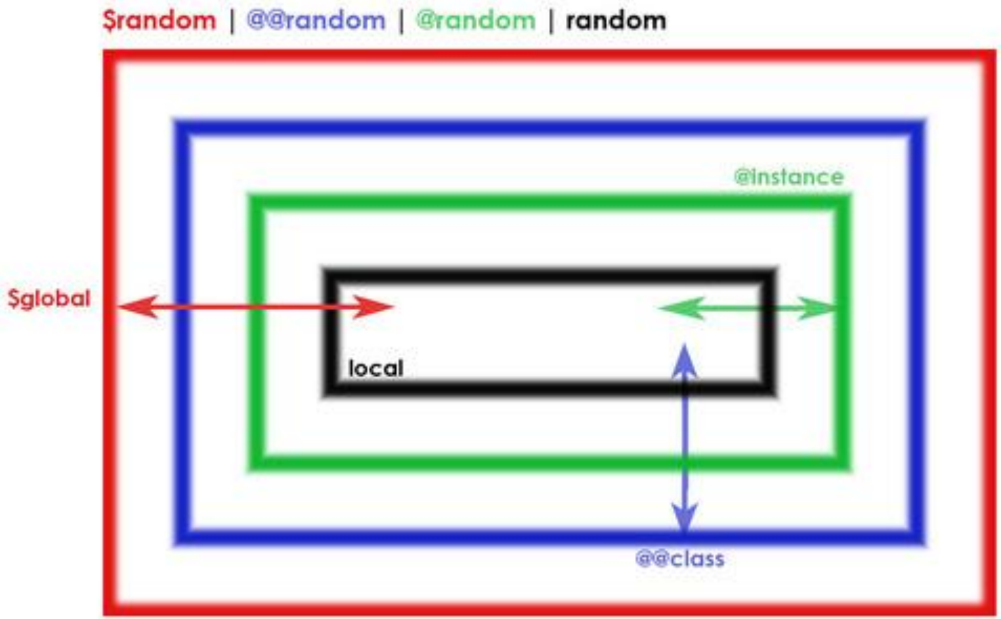
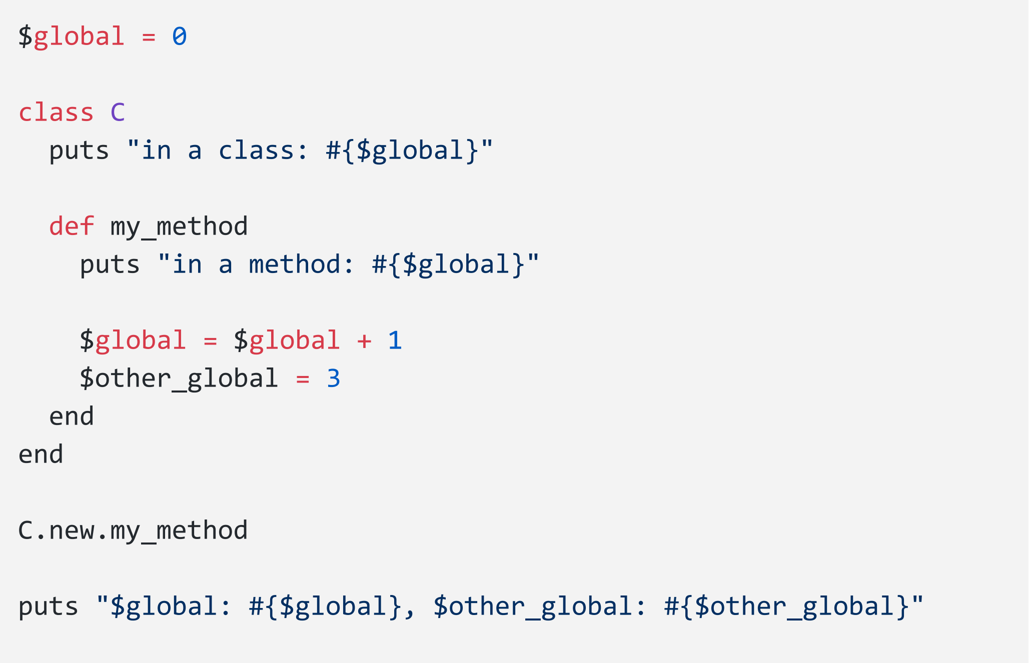
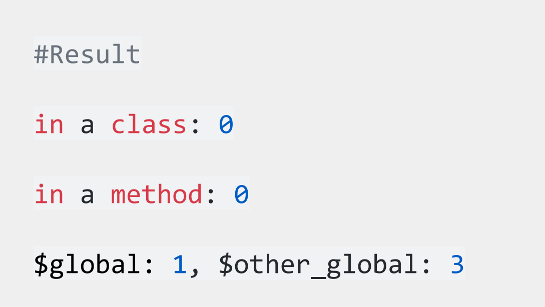


Image reference: https://www.sitepoint.com/understanding-scope-in-ruby/

4. Practice - Global variables

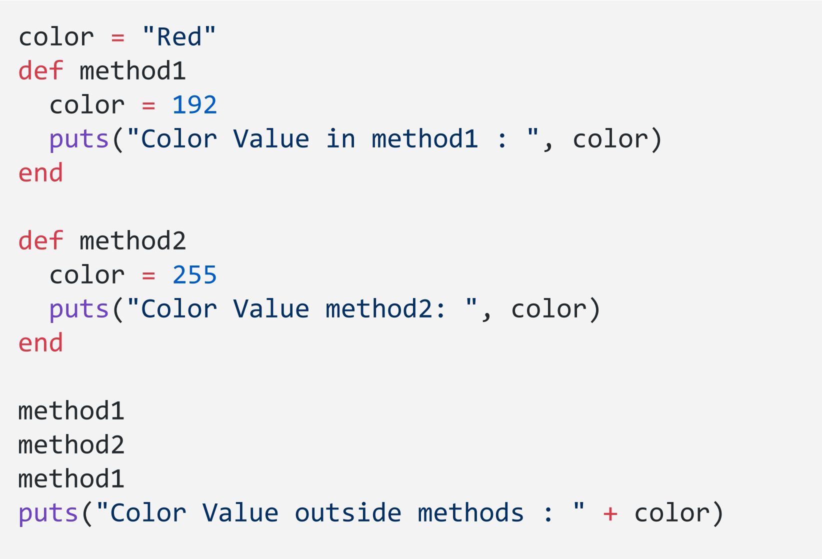


```ruby
$global = 0

class C
  puts "in a class: #{$global}"

  def my_method
    puts "in a method: #{$global}"

    $global = $global + 1
    $other_global = 3
  end
end

C.new.my_method

puts "$global: #{$global}, $other_global: #{$other_global}"
```

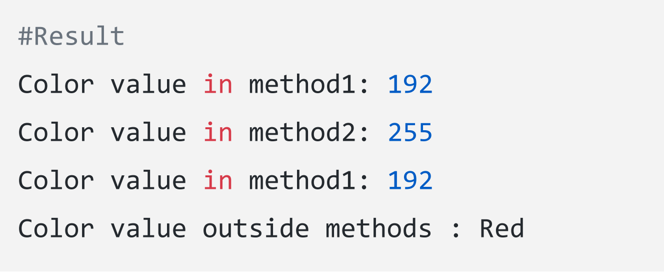


```
#Result

in a class: 0

in a method: 0

$global: 1, $other_global: 3
```

4. Practice - Local variable

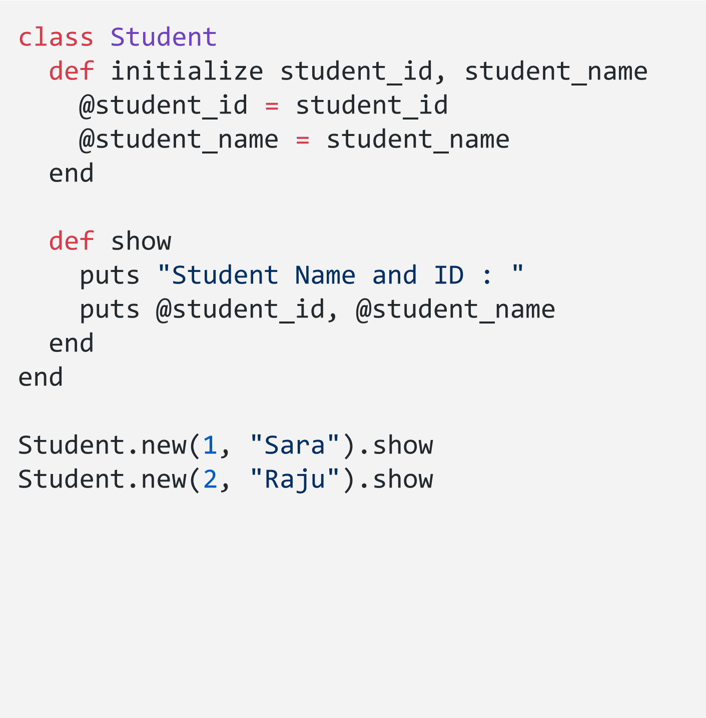


```ruby
color = "Red"
def method1
  color = 192
  puts("Color Value in method1 : ", color)
end

def method2
  color = 255
  puts("Color Value method2: ", color)
end

method1
method2
method1
puts("Color Value outside methods : " + color)
```

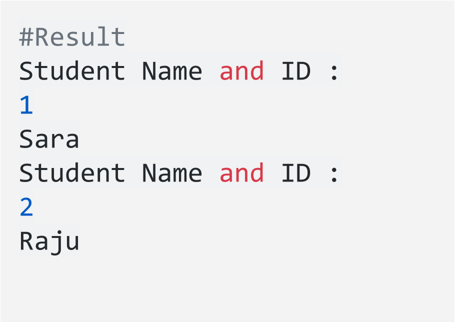


```
#Result
Color value in method1: 192
Color value in method2: 255
Color value in method1: 192
Color value outside methods : Red
```

4. Practice - Instance variable



```ruby
class Student
  def initialize student_id, student_name
    @student_id = student_id
    @student_name = student_name
  end

  def show
    puts "Student Name and ID : "
    puts @student_id, @student_name
  end
end

Student.new(1, "Sara").show
Student.new(2, "Raju").show
```



```
#Result
Student Name and ID :
1
Sara
Student Name and ID :
2
Raju
```

4. Practice - Class variables

```ruby
class Polygon
  @@sides = 10

  def set_sides sides
    @@sides = sides
  end

  def get_sides
    @@sides
  end

  def self.sides
    @@sides
  end
end
```

```ruby
puts Polygon.sides

p1 = Polygon.new
p1.set_sides 20
puts p1.get_sides

p2 = Polygon.new
p2.set_sides 30
puts p2.get_sides
puts p1.get_sides
puts Polygon.sides
```

```
#Result
10
20
30
30
30
```

4. Practice - Constant variables

```
NAME = "LIENQUAN"
NAME = "PUBG"

Name = "LIENQUAN"
Name = "PUBG"
```

```
#Result
(irb):2: warning: already initialized constant NAME
(irb):1: warning: previous definition of NAME was
here
 => "PUBG"
(irb):2: warning: already initialized constant Name
(irb):1: warning: previous definition of Name was
here
 => "PUBG"
```

5. Exercise

Look at the following programs...

```ruby
x = 0
3.times do
  x += 1
end
puts x
```

```ruby
y = 0
3.times do
  y += 1
  x = y
end
puts x
```

What does x print to the screen in each case? Do they both give errors? Are the errors different? Why?

5. Exercise

The first prints 3 to the screen.

The second throws an error undefined local variable or method because x is not available as it is created within the scope of the do/end block.

References

- http://ruby-doc.org/
- http://annaershova.github.io/blog/2015/10/26/variable-in-ruby/
- http://rosettacode.org/wiki/99_Bottles_of_Beer#Ruby
- https://www.w3resource.com/ruby/ruby-variables-constants.php
- https://github.com/awesome-academy/RubyExample_TFW

Question & Answer?

THANK YOU

you're my cup<T>...
you're my cup<'t>...!