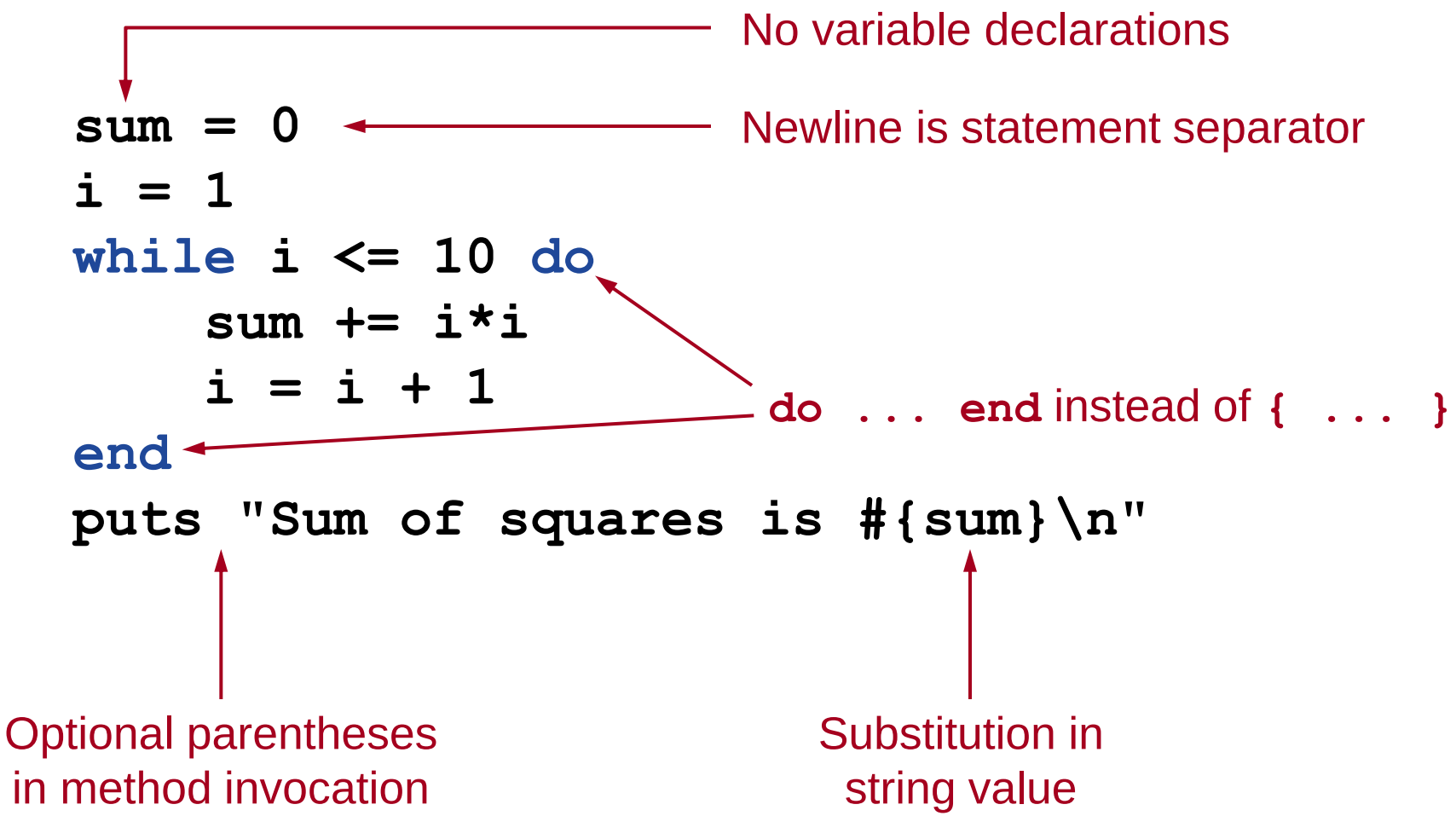
Basic Ruby Syntax



Variable Names and Scopes

`foo`	**Local variable**
`$foo`	**Global variable**
`@foo`	**Instance variable in object**
`@@foo`	**Class variable**
`MAX_USERS`	**“Constant” (by convention)**

Ruby String Syntax

- **Single quotes (only `\'` and `\\`)**

```
'Bill\'s "personal" book'
```

- **Double quotes (many escape sequences)**

```
"Found #{count} errors\nAborting job\n"
```

- **`%q` (similar to single quotes)**

```
%q<Nesting works: <b>Hello</b>>
```

- **%Q (similar to double quotes)**

```
%Q|She said "#{greeting}"\n|
```

- **"Here documents"**

```
<<END
First line
Second line
END
```

Arrays and Hashes

```
x = Array.new
x << 10
x[0] = 99
y = ["Alice", 23, 7.3]
x[1] = y[1] + y[-1]


person = Hash.new
person["last_name"] = "Rodriguez"
person[:first_name] = "Alice"
order = {:item => "Corn Flakes", :weight => 18}
order = {item: "Corn Flakes", weight: 18}
```

Ruby Statements

```
if x < 10 then
    ...
elsif x < 20
    ...
else
    ...
end
```

```
while x < 10 do
    ...
end
```

```
array = [14, 22, 34, 46, 92]
for value in array do
    ...
end
```

Factorial

```
def fac(x)
  if x <= 1 then
    return 1
  end
  return x*fac(x-1)
end
```

Arguments: Defaults, Variable

```
def inc(value, amount=1)
  value+amount
end

def max(first, *rest)
  result = first
  for x in rest do
    if (x > result) then
      result = x
    end
  end
  return result
end
```

Keyword Arguments

```
def create_widget(size, properties)
    ...
end

create_widget(6, {:id => "table22", :class => "Cart"})
create_widget(6, :id => "table22", :class => "Cart")
create_widget(6, id: "table22", class: "Cart")
```

Blocks, Iterators, Yield

```
odd_numbers(3) do |i|
    print(i, "\n")
end
```

Block: code passed to method

```
def odd_numbers(count)
    number = 1
    while count > 0 do
        yield(number)
        number += 2
        count -= 1
    end
end
```

Iterator

Invoke method's block

Iterators are Reusable

```
def sum_odd(count)
    sum = 0
    odd_numbers(count) do |i|
        sum += i
    end
    return sum
end

def odd_numbers(count)
    number = 1
    while count > 0 do
        yield(number)
        number += 2
        count -= 1
    end
end
```

Equivalent Code

```
array = [14, 22, 34, 46, 92]
for value in array do
    print(value, "\n")
end
```

```
array = [14, 22, 34, 46, 92];
array.each do |value|
    print(value, "\n")
end
```

Simple Class

```
class Point
  def initialize(x, y)
    @x = x
    @y = y
  end

  def x
    @x
  end

  def x=(value)
    @x = value
  end
end
```

```
p = Point.new(3,4)
puts "p.x is #{p.x}"
p.x = 44
```

Module Example

```
class MyClass
  include Enumerable
  ...
  def each
    ...
  end
end
```

New methods available in MyClass:

`min`, `max`, `sort`, `map`, `select`, ...