



Object-relational Mapping

Connecting SQL and Ruby

Temporary State

```
class OrangeTree
  def initialize
    @age = 5
    @height = 5
    @oranges = produce_oranges
  end

  def produce_oranges
    Array.new(3) {Orange.new}
  end
end
```

```
class Orange
  def initialize
    @diameter = rand(2..4)
  end
end
```

Temporary State

```
orange_tree = OrangeTree.new
```

```
⇒ #<OrangeTree 0x007fe1f1a4fb20  
  @age=5,  
  @height=5,  
  @oranges=[#<Orange:0x007fe1f1a4faa8 @diameter=2>,  
             #<Orange:0x007fe1f1a4fa80 @diameter=4>,  
             #<Orange:0x007fe1f1a4fa58 @diameter=3>]>
```

Temporary State

- We create objects to hold data
- Data is lost when our program has finished executing

Databases

- Like object-oriented programming, databases model the data in real world systems

Databases

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Create objects with the data in Ruby

Databases and Ruby

- How do objects in databases relate to Ruby?

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Modeling State	
Ruby	Database
Classes	Tables
Instances of classes	Rows
Instance variables	Fields

Databases and Ruby

dogs			
id	name	age	weight
1	Jada	4	50
2	Tenley	2	10

```
#<Dog:0x007fe1f1a2c3a0 @id=1, @name="Jada", @age=4, @weight=50>  
#<Dog:0x007fe1f1a28c00 @id=2, @name="Tenley", @age=2, @weight=10>
```

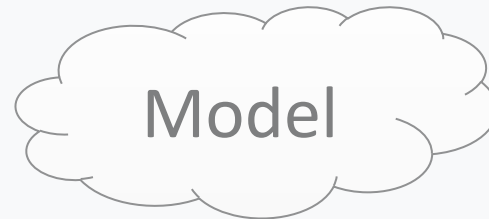
Translating from SQL to Ruby

- How do we move between Ruby and our database?

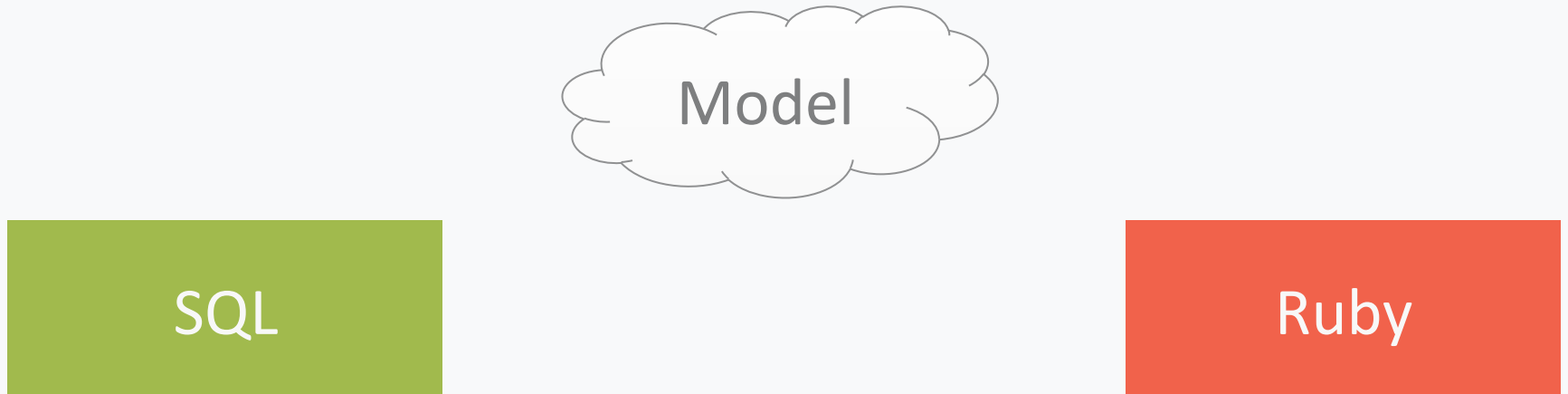
Translating from SQL to Ruby

- Object-relational mappers respond to Ruby methods, generate SQL queries, and return the results of the queries as Ruby objects

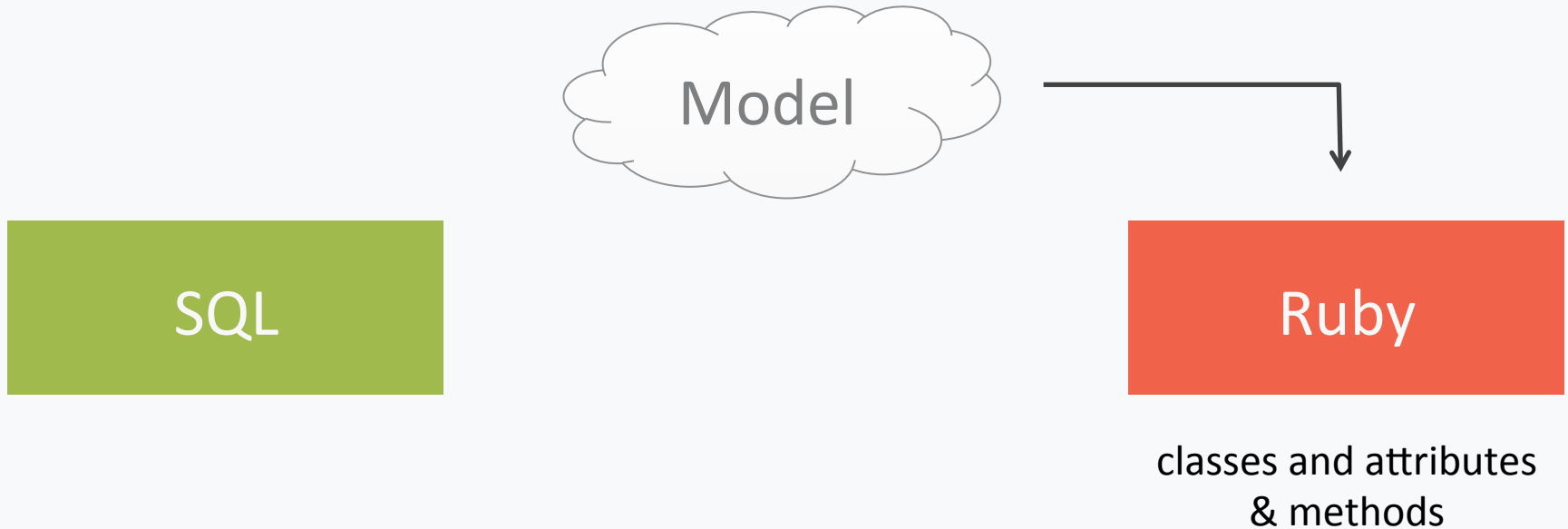
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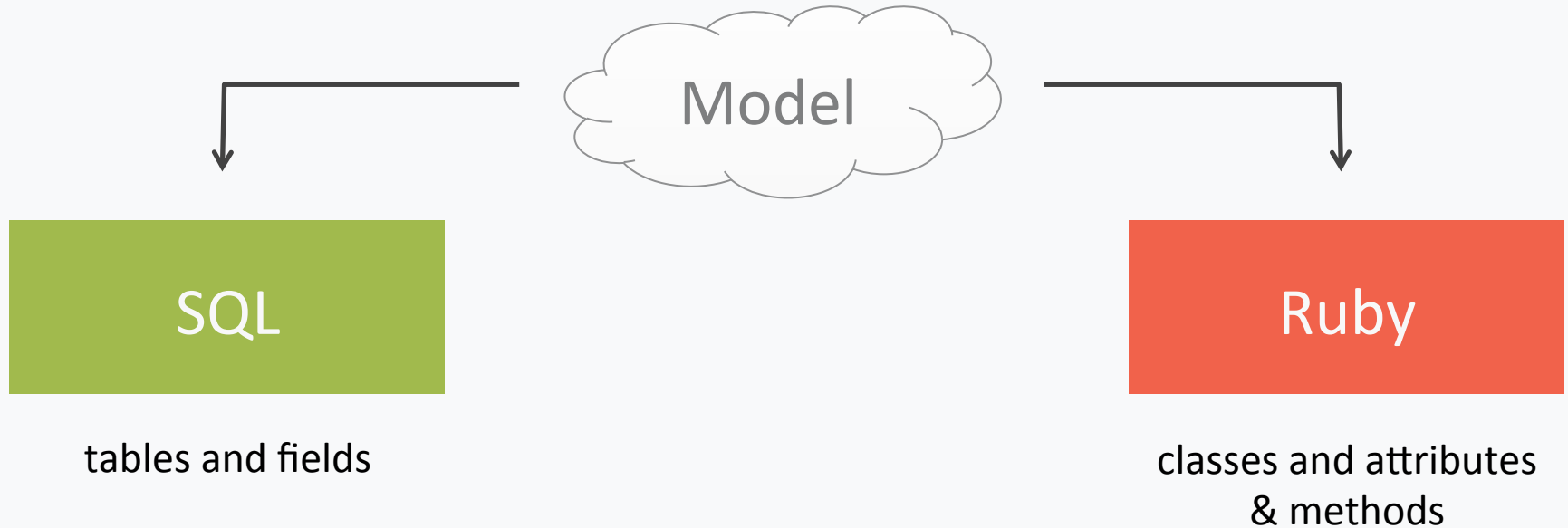
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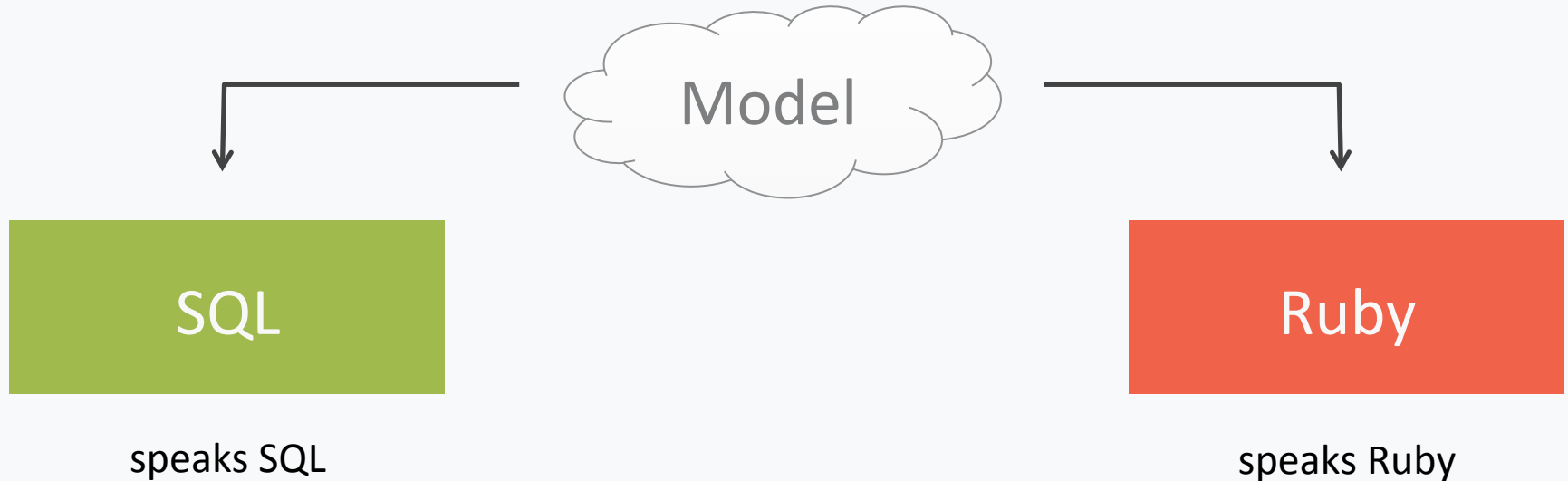
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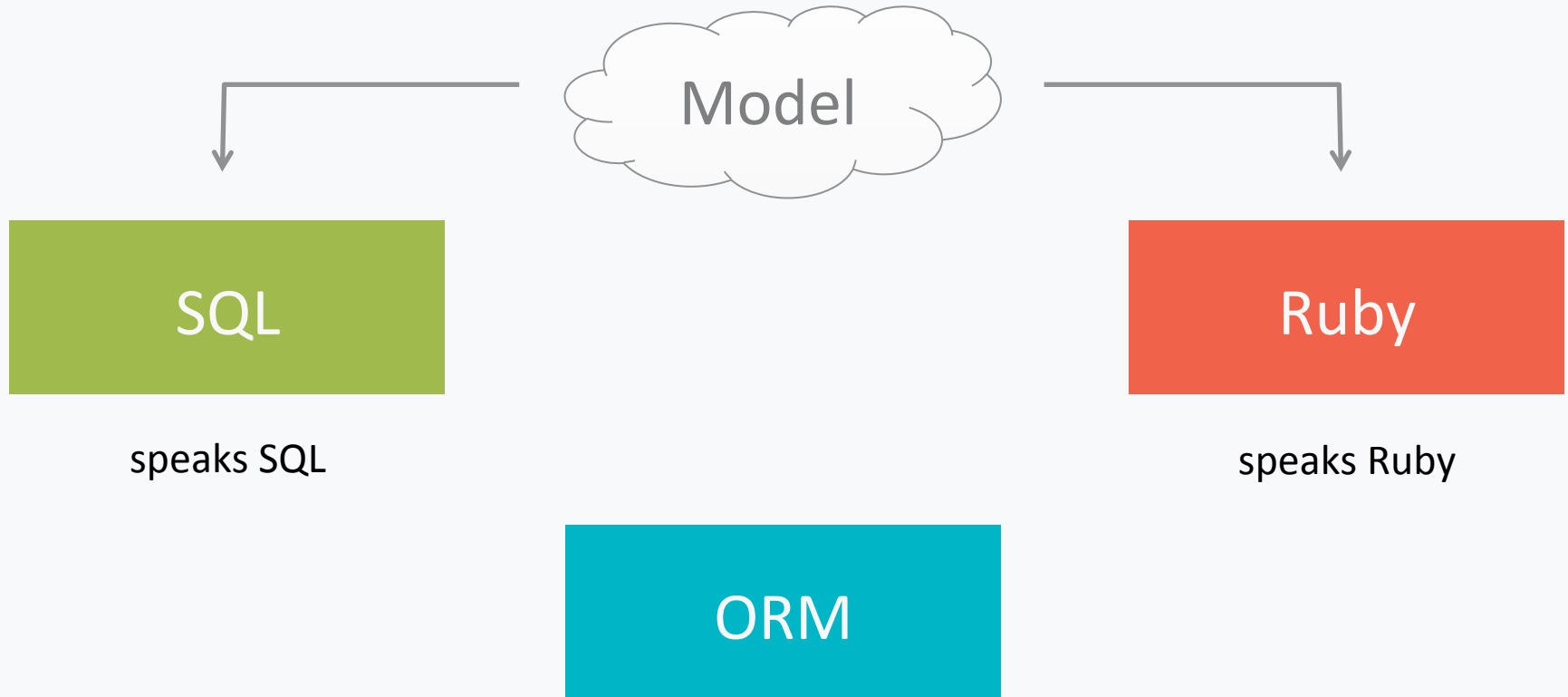
Translating from SQL to Ruby



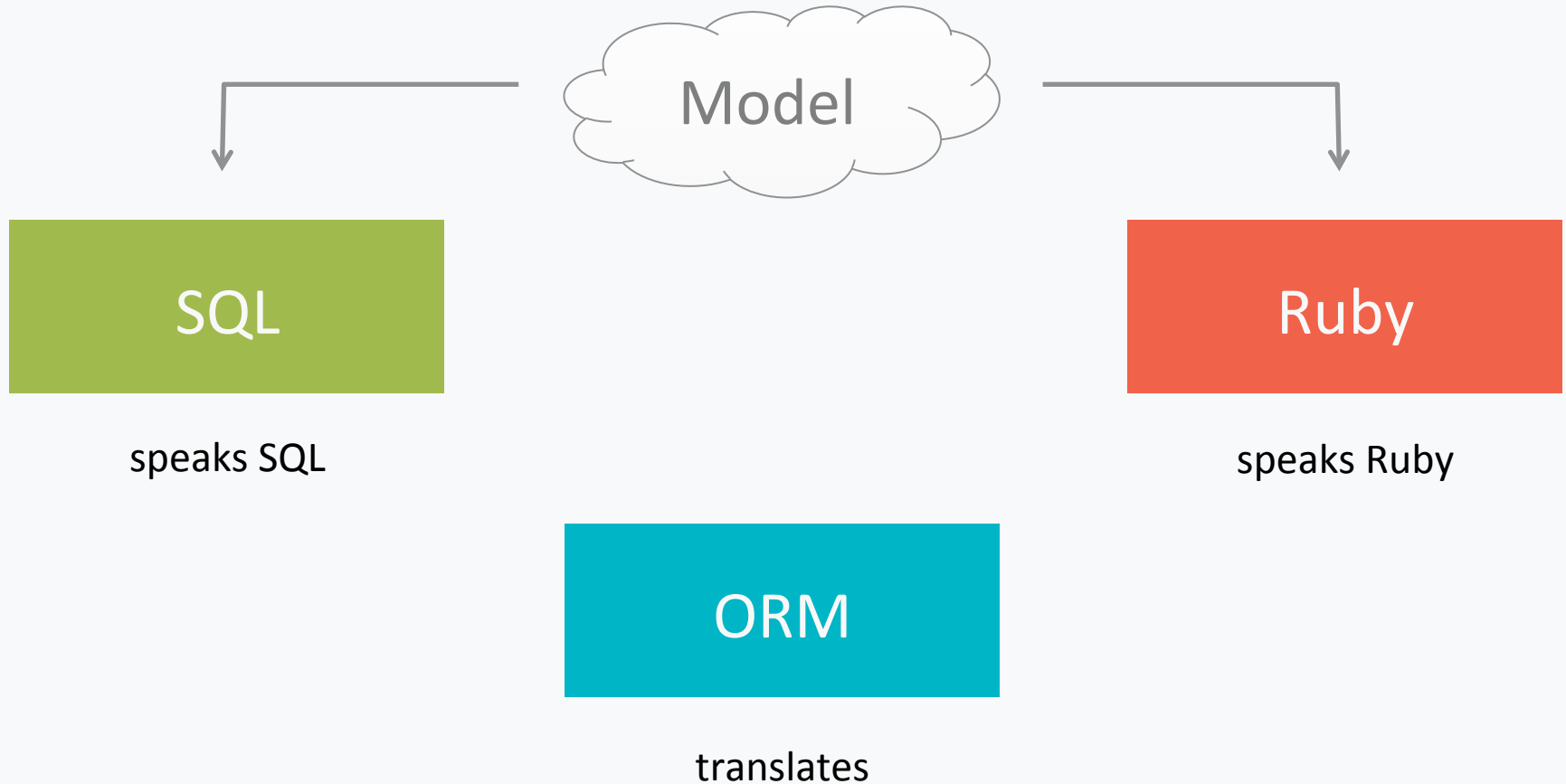
Translating from SQL to Ruby



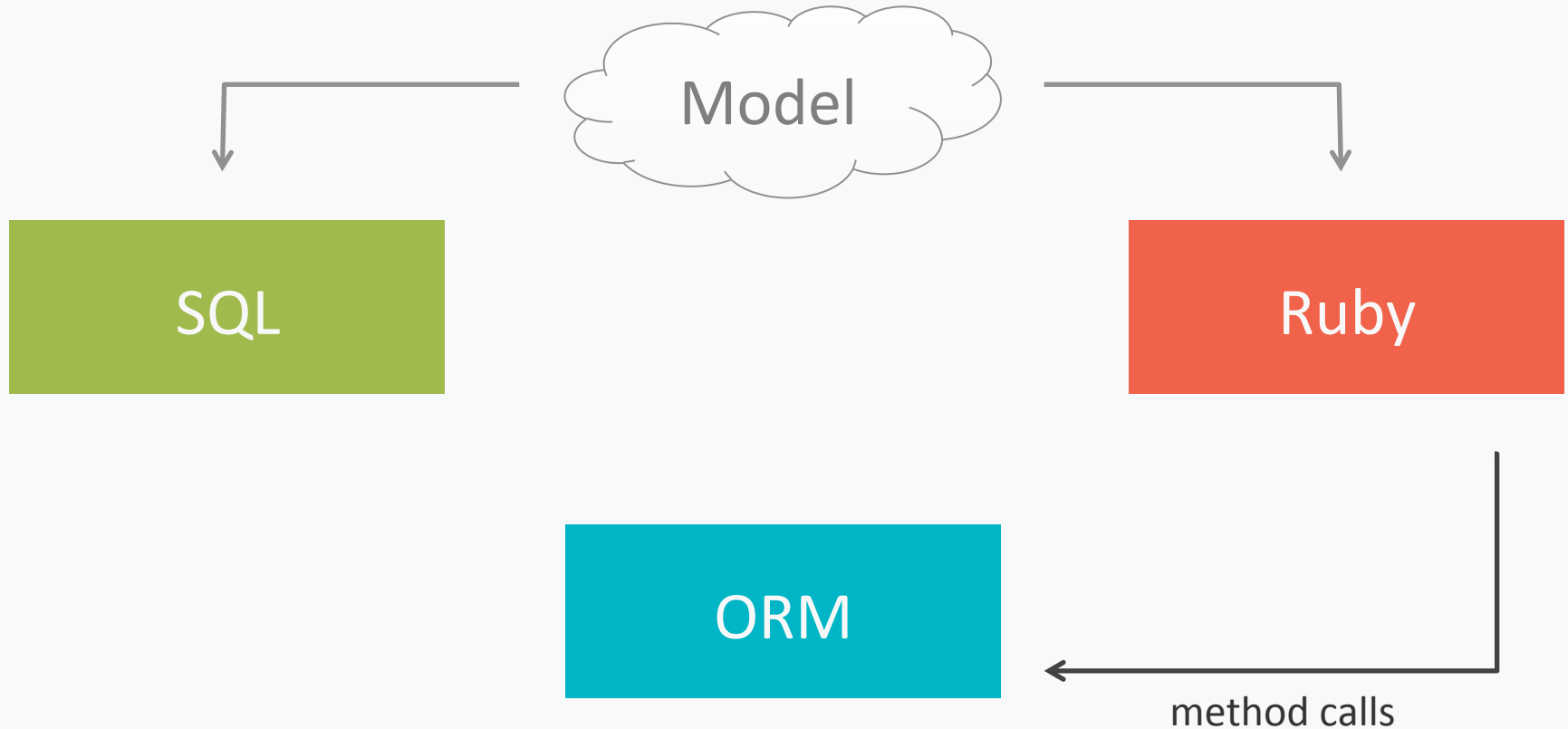
Translating from SQL to Ruby



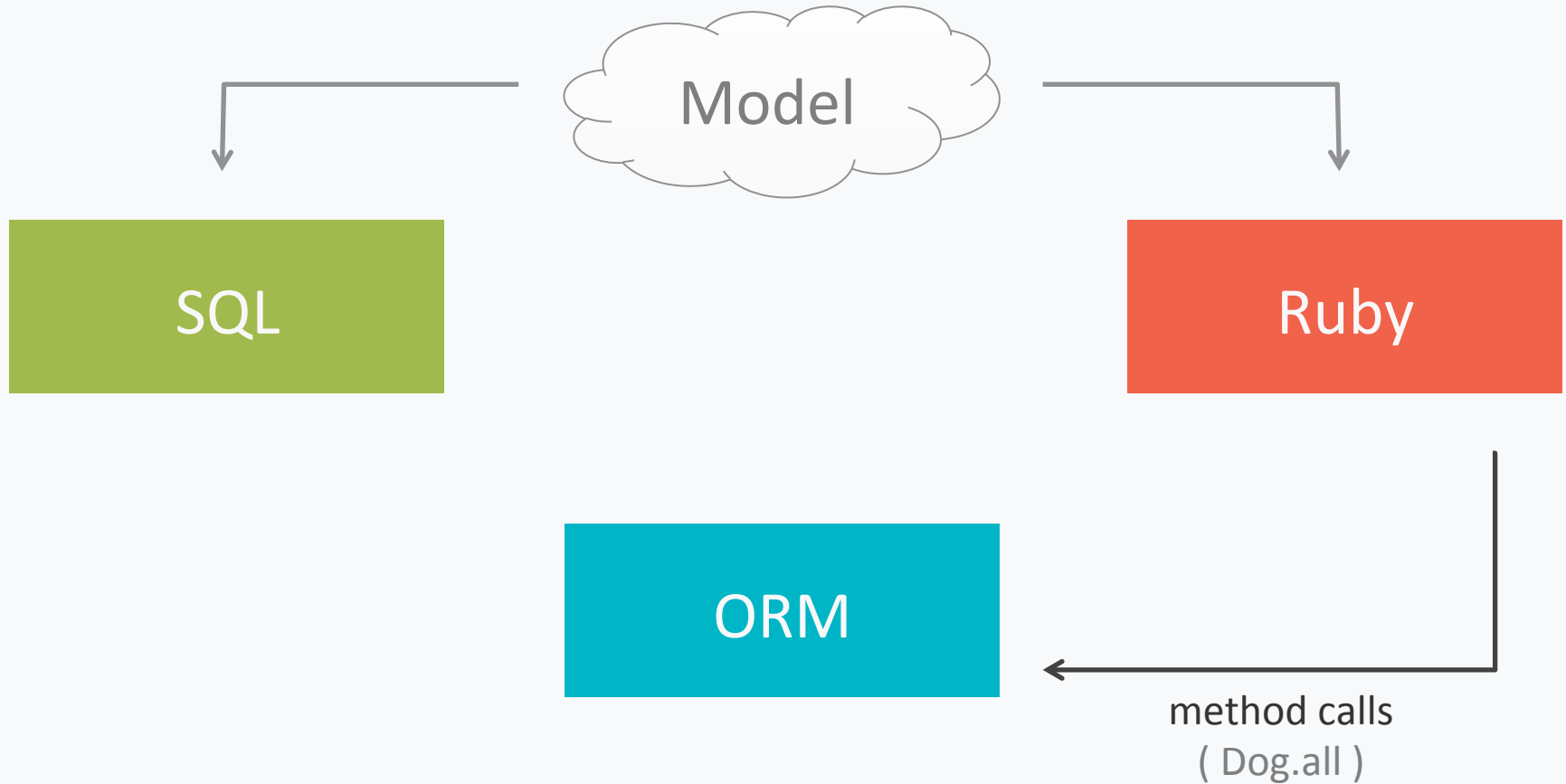
Translating from SQL to Ruby



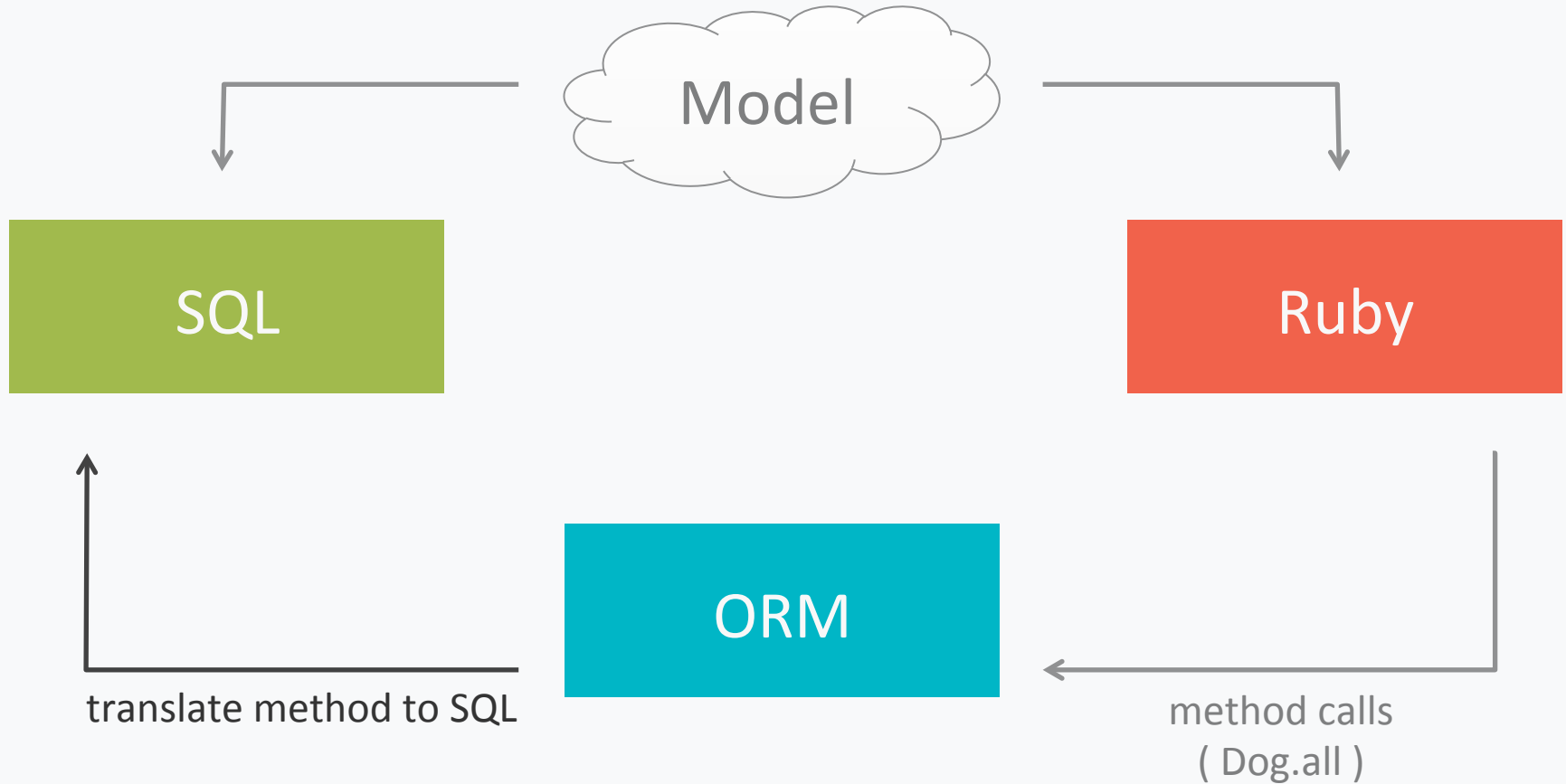
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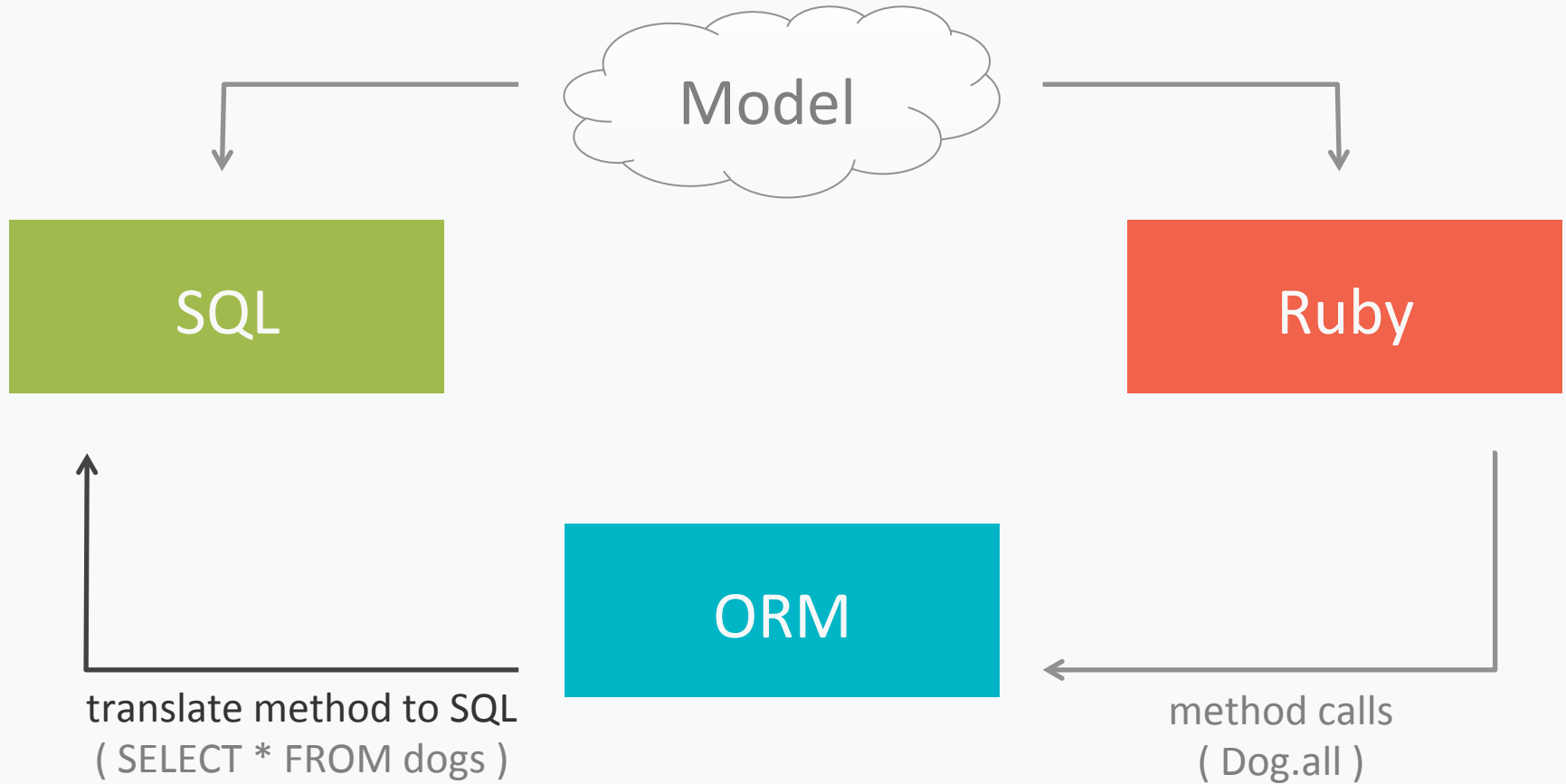
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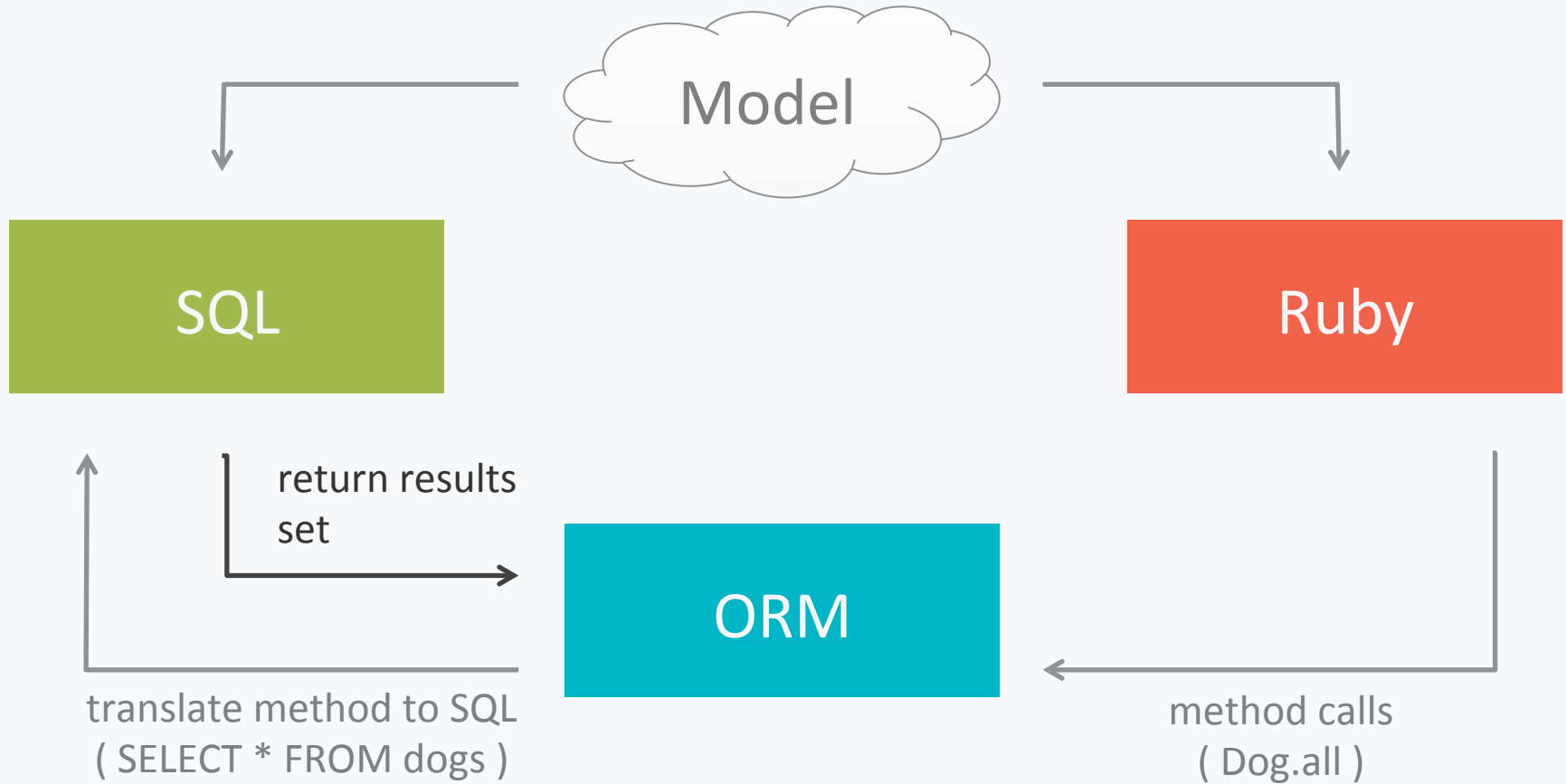
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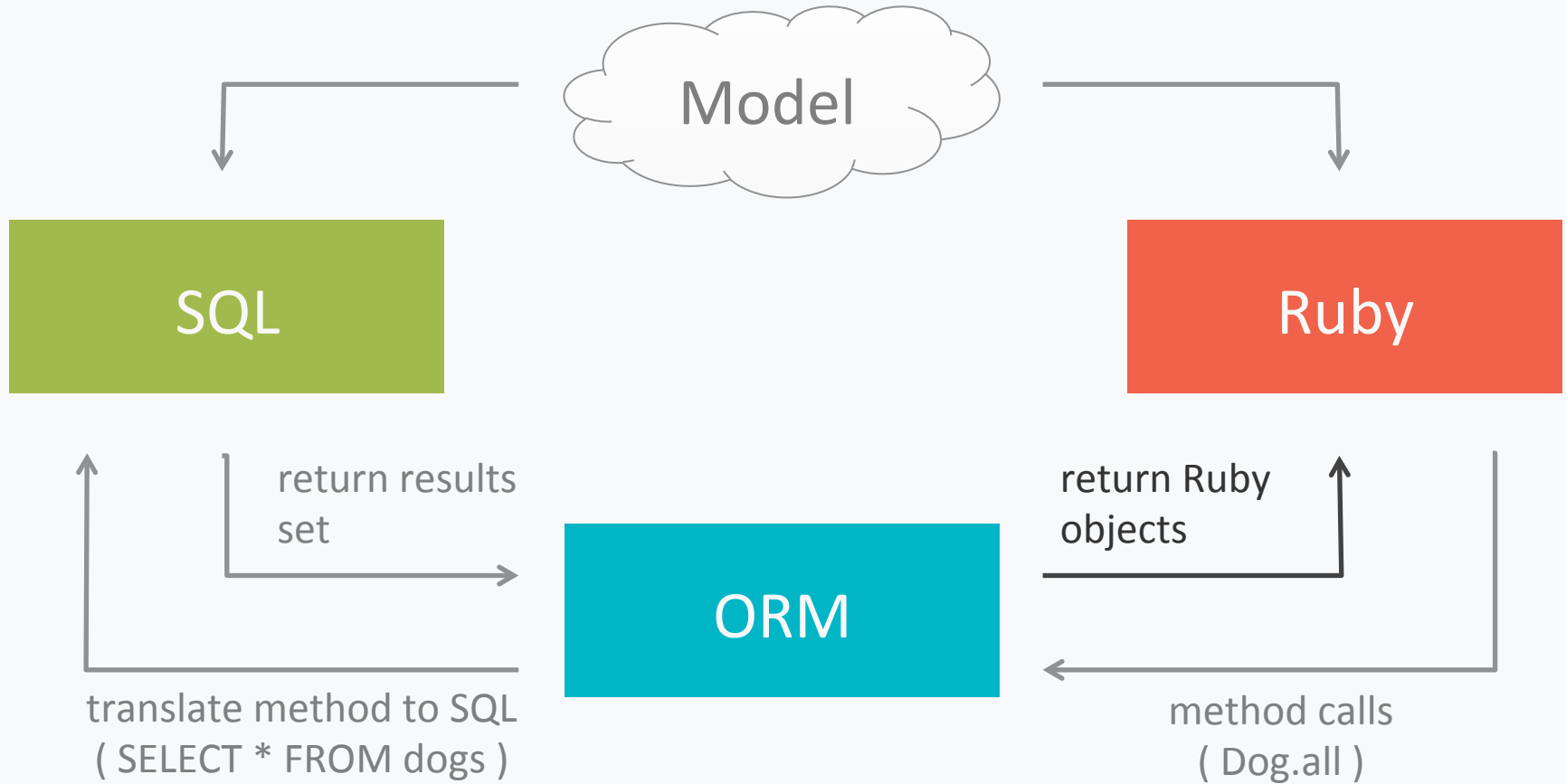
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