



# Introduction to Active Record

## Our Object-relational Mapper

# Introduction to ActiveRecord

- Just an introduction
- How to do in ActiveRecord what you've been doing
- Naming conventions

# Active Record

- Active Record is a gem used in Rails for object-relational mapping

# Active Record Does

- Creating tables
- Mapping classes and tables, attributes and fields
- Associations between classes
- Validations

# Inherit from ActiveRecord

- Write classes that inherit from ActiveRecord

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- Write classes that inherit from ActiveRecord

ActiveRecord::Migration

ActiveRecord::Base

# Active Record Orange Trees

orange_trees
id
age
height
created_at
updated_at

oranges
id
diameter
orange_tree_id
created_at
updated_at

# Creating Tables: SQL

```
CREATE TABLE orange_trees (  
  id INTEGER PRIMARY KEY  
    AUTOINCREMENT,  
  age INTEGER NOT NULL,  
  height INTEGER NOT NULL,  
  created_at DATETIME,  
  updated_at DATETIME);
```

orange_trees
id
age
height
created_at
updated_at



# Creating Tables: Active Record

```
class CreateOrangeTrees <
  ActiveRecord::Migration
  def change
    create_table :orange_trees do |t|
      t.integer :age
      t.integer :height

      t.timestamps
    end
  end
end
```

orange_trees
id
age
height
created_at
updated_at

# Creating Tables: SQL

```
CREATE TABLE oranges (  
  id INTEGER PRIMARY KEY  
    AUTOINCREMENT,  
  diameter INTEGER NOT NULL,  
  created_at DATETIME,  
  updated_at DATETIME);
```

oranges
id
diameter
orange_tree_id
created_at
updated_at

# Creating Tables: Active Record

```
class CreateOranges<
  ActiveRecord::Migration
  def change
    create_table :oranges do |t|
      t.integer :diameter
      t.integer :orange_tree_id

      t.timestamps
    end
  end
end
```

oranges
id
diameter
orange_tree_id
created_at
updated_at

# Mapping Classes to Tables

- Class OrangeTree => table orange\_trees
- Class methods to retrieve records from table

```
class OrangeTree < ActiveRecord::Base  
end
```

# Mapping Classes to Tables

orange_trees				
id	age	height	created_at	updated_at
1	5	5	2014-03-22	2014-03-22
2	6	6	2014-03-22	2014-03-22

```
OrangeTree.all
```

```
# => [#<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=5, @height=5 ...>,  
      #<OrangeTree:0x007fdd5b22b268 @id=2, @age=6, @height=6 ...>]
```

```
OrangeTree.find(1)
```

```
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=5, @height=5 ...>
```

# Mapping Attributes to Fields

- Instance attributes => table fields
- Instance methods to read and write values

```
class OrangeTree < ActiveRecord::Base  
end
```

# Mapping Attributes to Fields

orange_trees				
id	age	height	created_at	updated_at
1	5	5	2014-03-22	2014-03-22
2	6	6	2014-03-22	2014-03-22

```
tree = OrangeTree.find(1)
```

```
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=5, @height=5 ...>
```

```
tree.id      # => 1
```

```
tree.age     # => 5
```

```
tree.height  # => 5
```

# Mapping Attributes to Fields

orange_trees				
id	age	height	created_at	updated_at
1	5	5	2014-03-22	2014-03-22
2	6	6	2014-03-22	2014-03-22

```
tree = OrangeTree.find(1)
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=5, @height=5 ...>

tree.age = 9 # => 9
tree
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=9, @height=5 ...>
```



# Mapping Attributes to Fields

orange_trees				
id	age	height	created_at	updated_at
1	9	5	2014-03-22	2014-03-22
2	6	6	2014-03-22	2014-03-22

```
tree = OrangeTree.find(1)
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=5, @height=5 ...>

tree.age = 9 # => 9
tree
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=9, @height=5 ...>
tree.save    # => true
```

# Associations Between Classes

- Instance methods to retrieve relations

```
class OrangeTree < ActiveRecord::Base
  has_many :oranges
end
```

```
class Orange < ActiveRecord::Base
  belongs_to :orange_tree
end
```

# Associations Between Classes

oranges				
id	diameter	orange_tree_id	created_at	updated_at
1	2	1	2014-03-22	2014-03-22
2	4	2	2014-03-22	2014-03-22

```
tree = OrangeTree.find(1)
```

```
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=5, @height=5 ...>
```

```
tree.oranges
```

```
# => [#<Orange:0x003frd5b9t8a24 @id=1, @diameter=2 ...>]
```

# Associations Between Classes

oranges				
id	diameter	orange_tree_id	created_at	updated_at
1	2	1	2014-03-22	2014-03-22
2	4	2	2014-03-22	2014-03-22

```
orange = Orange.find(1)
```

```
# => #<Orange:0x003frd5b9t8a24 @id=1, @diameter=2 ...>
```

```
orange.orange_tree
```

```
# => #<OrangeTree:0x007fdd5b9b4a20 @id=1, @age=5, @height=5 ...>
```

# Validations

```
CREATE TABLE orange_trees (  
  id INTEGER PRIMARY KEY  
    AUTOINCREMENT,  
  age INTEGER NOT NULL,  
  height INTEGER NOT NULL,  
  created_at DATETIME,  
  updated_at DATETIME);
```

```
CREATE TABLE oranges (  
  id INTEGER PRIMARY KEY  
    AUTOINCREMENT,  
  diameter INTEGER NOT NULL,  
  created_at DATETIME,  
  updated_at DATETIME);
```

# Validations

- Prevent unwanted data being written to the database

```
class OrangeTree < ActiveRecord::Base
  validates_presence_of :age, :height
end
```

```
class Orange < ActiveRecord::Base
  validates_presence_of :diameter
end
```

# Naming Conventions

- Class names singular, table names plural with words separated by underscores

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- Class names singular, table names plural with words separated by underscores

Names that ActiveRecord Can Match	
class name	table name
User	users
LineItem	line_items
Deer	deer
Person	people