

Who? What? When?

Human readable audit reporting for PaperTrail

A  Talk ;)

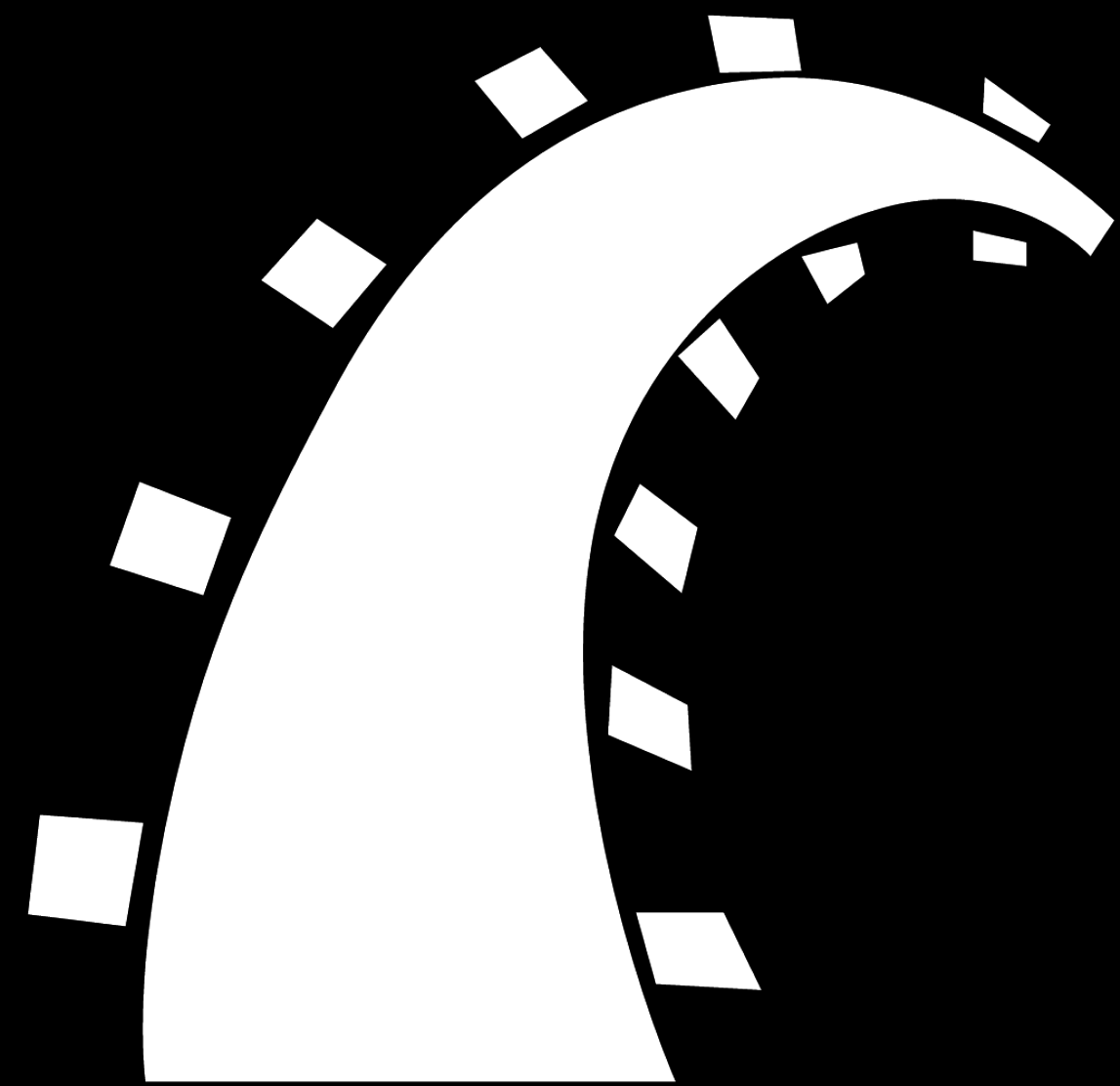
ME: Jason Dinsmore

@dinjas on all the things





(Ruby/React) consulting company in Vancouver, WA



Rails 4.2

Primarily back-office app
(powers a business)

Business Model

Acts as middleman between buyers and sellers
(& takes a cut)





Users

Representatives for buyers, sellers, and business
all access the system

Data

Much data is shared
between ALL the user types

Who? What? When?

We're frequently asked
about the history of data

PaperTrail

github.com/paper-trail-gem/paper_trail

```
gem 'paper_trail'
```

```
rails g paper_trail:install --with-changes
```

```
class PaperTrail::Version < ActiveRecord::Base {  
    :id => :integer,  
    :item_type => :string,  
    :item_id => :integer,  
    :event => :string,  
    :whodunnit => :string,  
    :object => :text,  
    :created_at => :datetime,  
    :object_changes => :text  
}
```

```
16 class User < ApplicationRecord
17   devise :database_authenticatable,
18         :registerable,
19         :validatable
20
21   has_paper_trail
22
23   validates :email, presence: true
24   validates :name, presence: true
25
26   alias_attribute :to_s, :name
27 end
```

Zeus ⚡ App

A (not so) real-world example

```
class Lightning < ApplicationRecord {  
    :id => :integer,  
    :name => :string,  
    :intensity => :integer,  
    :charge => :string,  
    :bolt_type => :string,  
    :strike_at => :datetime,  
    :created_at => :datetime,  
    :updated_at => :datetime  
}
```

Hi-d-ho, go to app!

PaperTrailScrapbook

github.com/tjchambers/paper_trail_scrapbook

```
gem 'paper_trail_scrapbook'
```

Note: relies on presence of object_changes
column in PaperTrail::Versions table

Two modules:

LifeHistory
UserJournal

LifeHistory

Shows history of a given database object

UserJournal

Shows changes made by a user
(optionally scope to class or time range)

Ho-d-hi, back to app!

Integration points:

ApplicationRecord
LifeStoryController
ApplicationHelper
View markup
JS

```
3 class ApplicationRecord < ActiveRecord::Base
4   self.abstract_class = true
5
6   def story
7     return unless PaperTrail.request.enabled_for_model?(self.class)
8     PaperTrailScrapbook::LifeHistory.new(self).story
9   end
10
11  def history_key
12    salt = ENV.fetch('HISTORY_SALT', '4309679837y8eoryidfhg')
13
14    sha2 = Digest::SHA2.new
15    sha2.update "#{salt}#{id}#{self.class}"
16
17    sha2.hexdigest
18  end
19 end
```

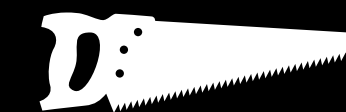
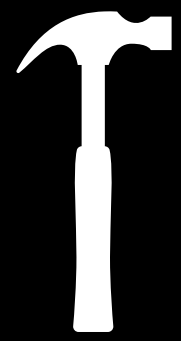


```
3 module ApplicationHelper
4   def history_link_for_object(object)
5     link_to '#',
6           class: 'scrapbook',
7           title: 'History',
8           data: { id: object.id,
9                 klass: object.class.name,
10                key: object.history_key } do
11       fa_icon('book')
12     end
13   end
```

```
22     - @lightnings.each do |lightning|
23         %tr
24             %td= lightning.name
25             %td= lightning.intensity
26             %td= lightning.bolt_type
27             %td= lightning.charge
28             %td= lightning.strike_at.strftime("%m/%d/%-Y")
29             %td= lightning.created_at.strftime("%m/%d/%-Y")
30             %td= lightning.updated_at.strftime("%m/%d/%-Y")
31             %td= history_link_for_object(lightning)
32
33 #history_modal
34     %h3#history_modal_header
35     #history_modal_body
```

```
3 class LifeStoryController < ApplicationController
4   before_action :authenticate_user!
5
6   def history
7     obj = klass.find(obj_id)
8     return fail_422 unless can_history?(obj)
9
10    history = CGI.escapeHTML(obj.story).presence || 'No history available'
11
12    render json: { name: "History for '#{obj}'", history: history }
13  end
14
15  private
16
17  def fail_422
18    head :unprocessable_entity
19  end
20
21  def obj_id
22    Integer(params.fetch(:id))
23  end
24
25  def klass
26    params.fetch(:klass).constantize
27  end
28
29  def can_history?(obj)
30    obj.history_key.eql?(params.fetch(:key))
31  end
32 end
```

Resources:



Demo app:

github.com/dinjas/lightning_app

These slides:

lightning_app/docs/paper_trail_scrapbook.pdf

Blog:

hint.io/blog/paper-trail-scrapbook