

Charting a Course with Ruby on Rails

11/30/06

FRUUG

Doug Fales

<http://guod.net>

doug.fales@gmail.com

Overview

- Story of WalkingBoss
- Ruby on Rails

WalkingBoss

<http://walkingboss.org>

Timeline

- **Winter/Spring of 2005:**


A bored long distance runner has an idea.



Timeline

- **Summer of 2005:**

That same runner converts to full-time RoR work.



No more
Java!!!

Timeline

- **Christmas of 2005:**

A fortuitous stocking stuffer arrives.



Timeline

- **January 2006:**

- Development begins with GPX gem.

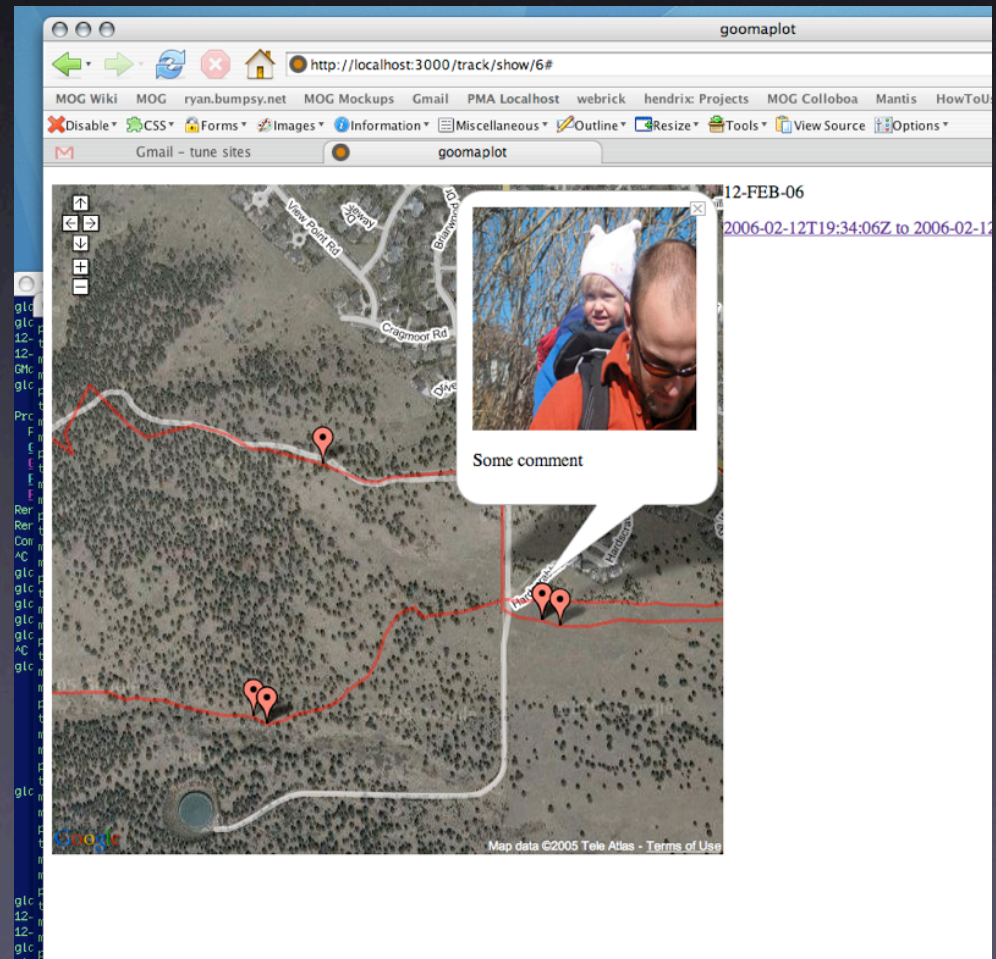
- 971 lines of ruby
 - reads/writes GPX files
 - converts Magellan NMEA track logs
 - calculates some meta-data (distance, bounds, high/low elevations, start/stop times)

Timeline

- **Winter of 2006:**

First tracklines plotted on Google Map!

- Skeleton rails app
- Plotted only GPX
- Fragile photo upload
- Very basic controls



Timeline

- **Spring of 2006:**
Talk proposal selected.

Timeline

- **April/May 2006:**
Flickr integration; trackline editing; search; waypoint creation and editing.
- **Last Week of May 2006:**
First beta-testers, finalizing graphic design.

Timeline

- **June 2006**
Rails Conf!

Timeline

- **Summer, Fall 2006**
 - Marketing
 - Maintenance
 - Periodically adding features

WalkingBoss' Ancestry

- Combining maps & stories is a common theme
- Other notable map mashup-ers:
 - 1905: H. Sargent Michaels
 - 1907: A. McNally II & his Photo-Auto Guide
 - Today: Too many to count!

PHOTOGRAPHIC
AUTOMOBILE
MAP

CHICAGO TO LAKE GENEVA
DELAVAN LAKE, DELAVAN
BELOIT

RETURNED VIA
ANTIOCH AND FOX
LAKE COUNTRY

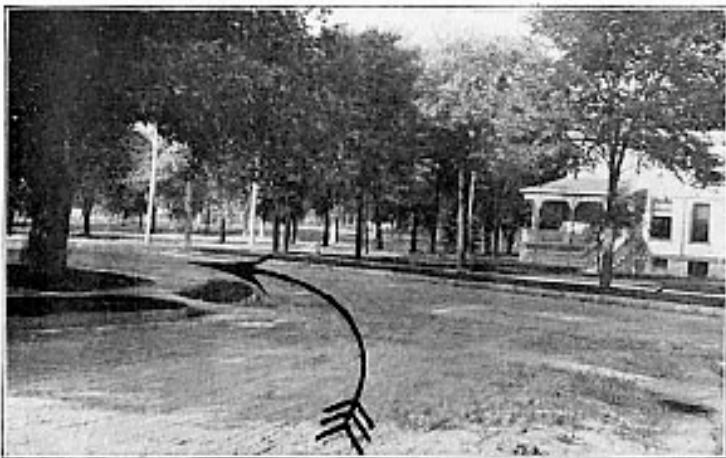
No. 9.



TO LEFT.

Beloit twenty-two miles; road is direct; many hills are encountered; road is good most of the way.

No. 10.

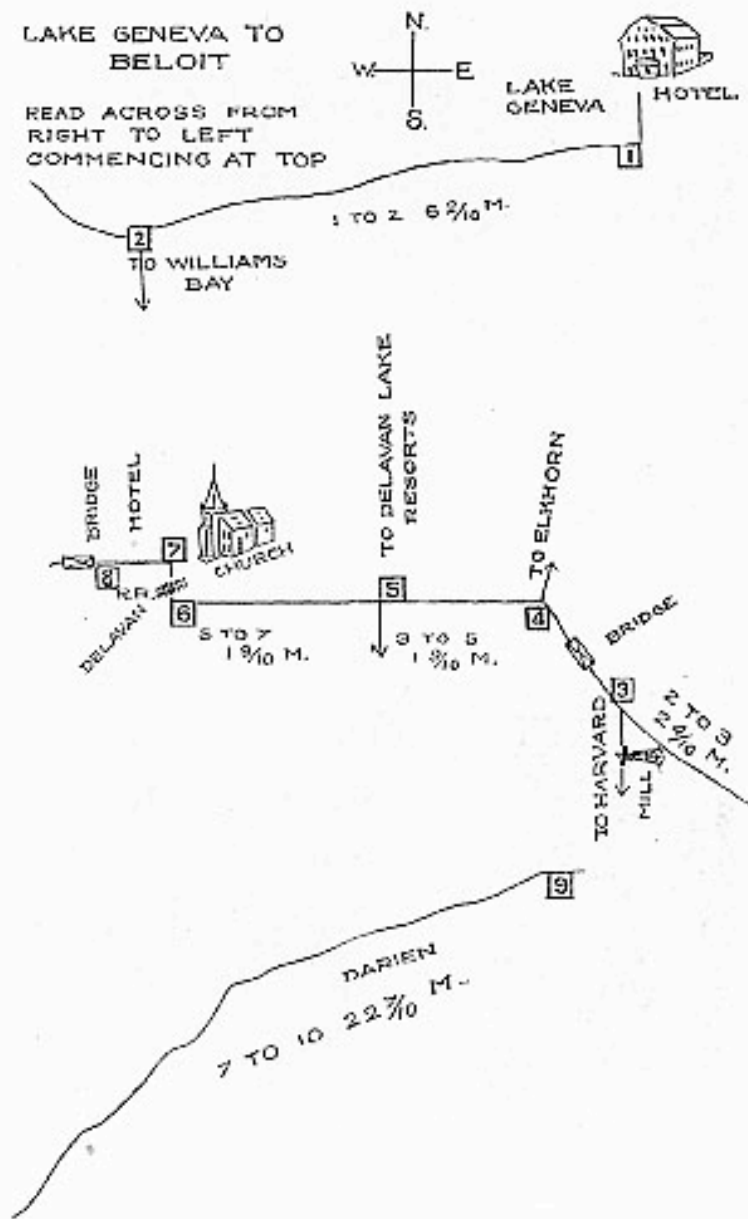


TO LEFT.

Next turn 100 feet upon the principal street of Beloit.

LAKE GENEVA TO
BELOIT

READ ACROSS FROM
RIGHT TO LEFT
COMMENCING AT TOP





The Elton Faces the "Green" and is surrounded by our own Lawns and Gardens

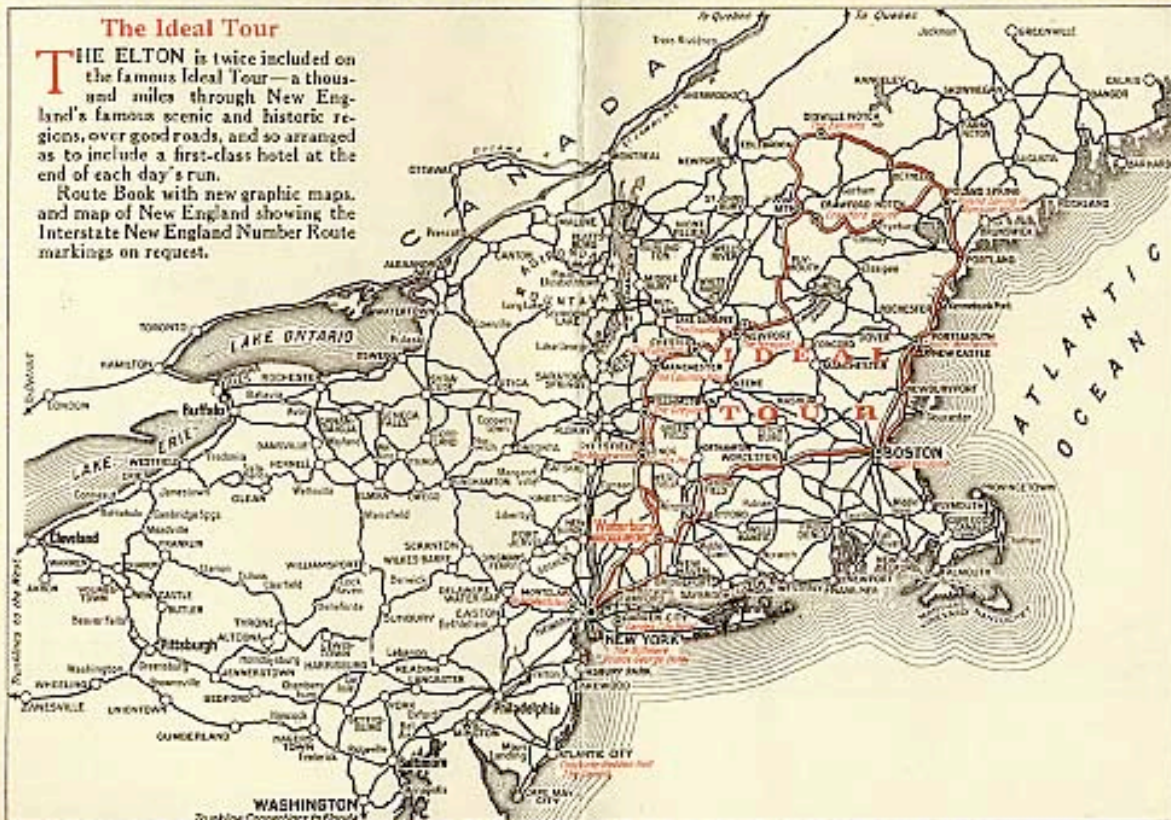


Splendid roads for motoring in every direction

The Ideal Tour

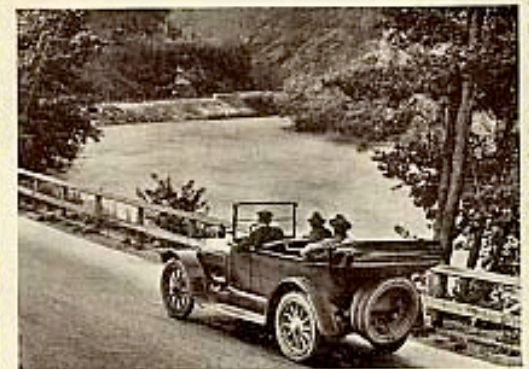
THE ELTON is twice included on the famous Ideal Tour—a thousand miles through New England's famous scenic and historic regions, over good roads, and so arranged as to include a first-class hotel at the end of each day's run.

Route Book with new graphic maps, and map of New England showing the Interstate New England Number Route markings on request.



The Air Line and Connecting Routes

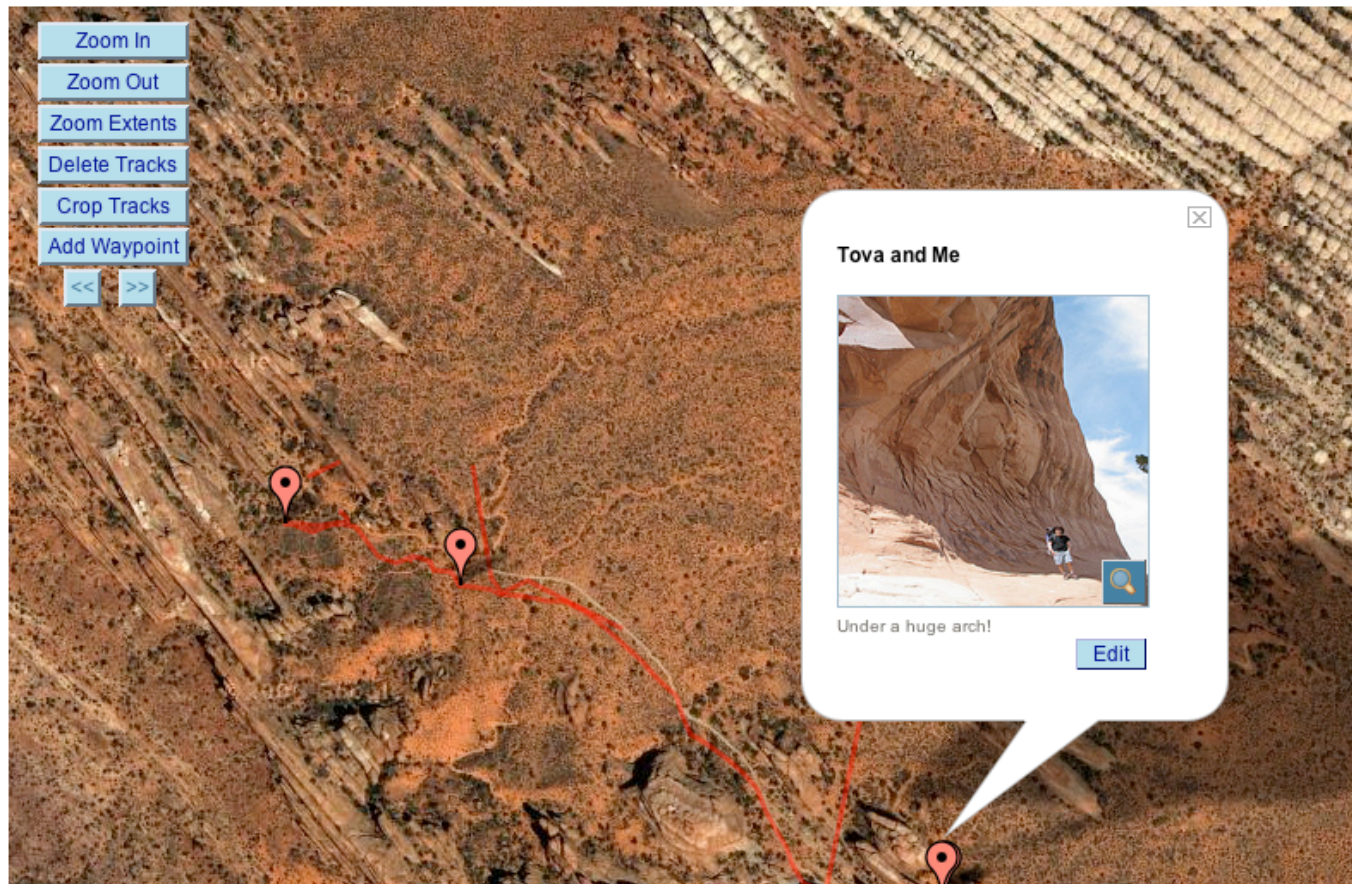
THE Air Line which is shown on the reverse is a delightful scenic route, and as it is free from the heavy trucking found on some of the other main lines is the fastest route between New York and Boston under present traffic conditions. Both the scenic Naugatuck Valley and the Post Road routes are given on the map as well as the Inland Route. Connecting routes from Albany, N. Y., and all points east are shown as well as New York. In fact this map is practically a complete map of southern New England although only intended as a trunk line map to and from the Air Line.



The Naugatuck Valley South of Waterbury

Arches National Park

I guess this is sort of "the" hike in Arches for all of the tourists. You drive all the way to the end of the road, then hike around for 2 miles or so and look at a bunch of arches. It is a pretty short hike (though we didn't go the whole way), but it's full of Arches. If you're not carrying a toddler on your back, and it's not too sunny, going the whole way is probably a very quick walk. When we were there, though, the trail was pretty packed with American adventurers, and it was slowing going in the heat. I will say, it is definitely a notch up in difficulty from the Rushmore walk, with its ice cream vendors and stone steps.



Add Flickr Photosets +

Add Photos +

Download GPX

Tags

«desert» «hiking»

Add Tag

Stats

Distance: 1.90 Miles

Time: 01:13:45

Average Speed: 1.55 MPH

High Point: 1594.00 m

Low Point: 1557.95 m

Waypoints

Waypoint Name: Enter some notes about this... X

Waypoint Name: Enter some notes about this... X

Waypoint Name: Enter some notes about this... X

Waypoint Name: Enter some notes about this... X

Waypoint Name: Enter some notes about this... X

Demo

Easy as 1, 2, 3



1. Get out!



2. Upload tracks.



3. Upload photos.

WalkingBoss

http://walkingboss.org/trip/new

Disable Cookies CSS Forms Images Information Miscellaneous Outline Resize Tools View Source Options

Your Account | Help | Sign Out
Logged in as **doug**

WalkingBoss

Home Create Trip My Trips Profile Explore

Create a New Trip

To create a new trip, you'll first need to upload a track file. This is the file that you download from your GPS device onto your computer. This can be either a GPX format file or a NMEA track log (from a Magellan GPS). For more info on file formats, see our [help page](#).

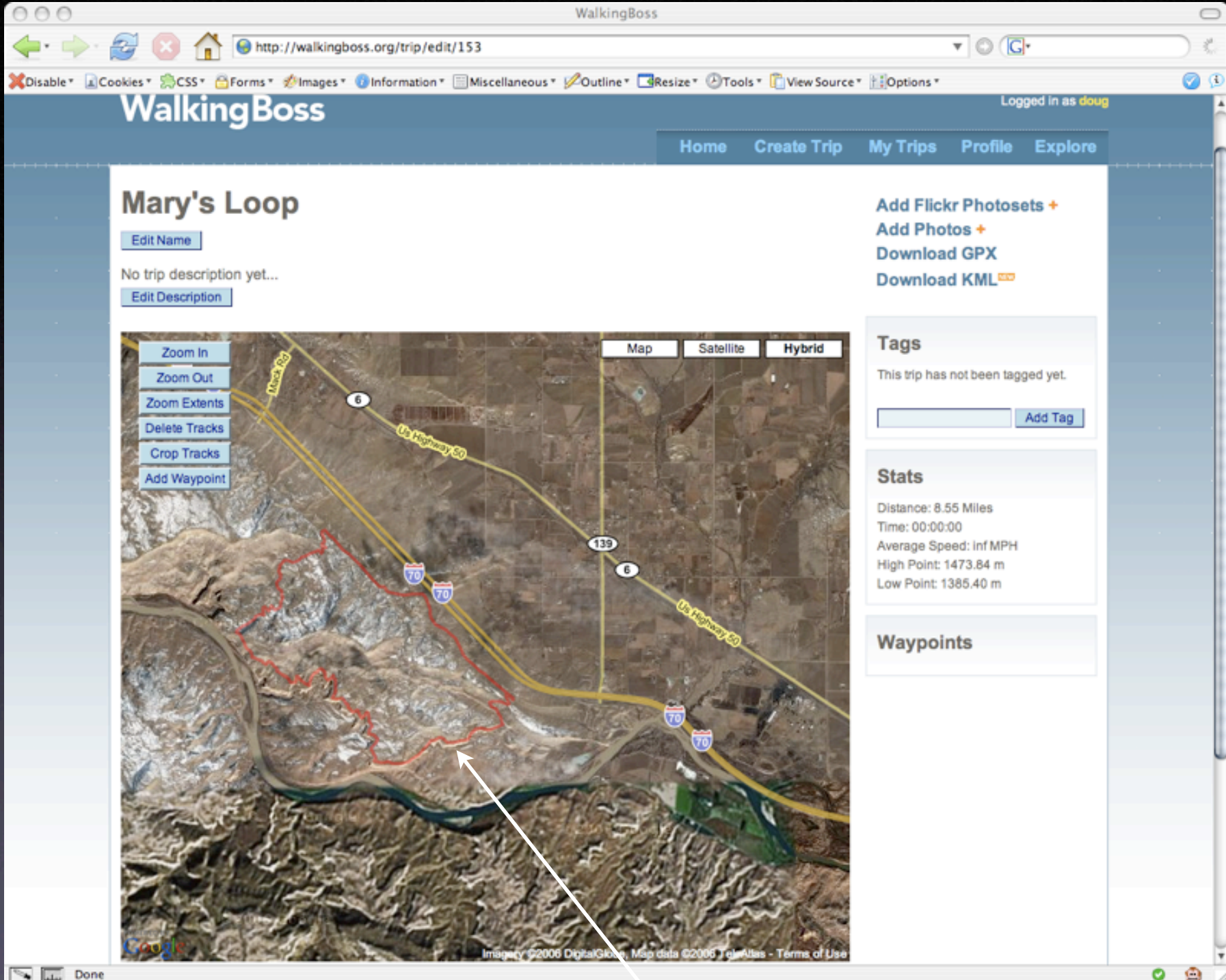
Once you've uploaded the file, you'll have a chance to edit the trip and remove any extra doglegs.

Trip Name:

Track Log:

Terms of Use | About | Forums

Done



GPolyline from GPX Data

WalkingBoss

[Your Account](#) | [Help](#) | [Sign Out](#)
Logged in as **doug**

[Home](#) [Create Trip](#) [My Trips](#) [Profile](#) [Explore](#)

Add Flickr Photosets

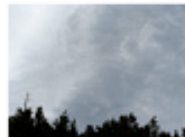
Please enter your flickr username.

Flickr Username

[Terms of Use](#) | [About](#) | [Forums](#)

Select Photosets

Select the photosets you would like to plot for your trip, Mary's Loop.



Blue Lake



Mud Lake



Boulder Rez



Boulder County Fair



Wabbit Vawvey 2



Wabbit Vawvey 1



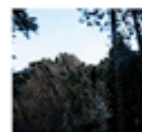
Secret Mesa



Big Thompson



Buttonrock



Set Timezone

We're about to plot the following photosets:



Mary's Loop

Trip Start: 04/06/06 at 17:37:32 UTC

Trip End: 04/06/06 at 18:53:38 UTC

Please select the correct timezone for your camera.

Timezone:

(GMT-07:00) Mountain Time

Plot Photosets Using Timezone

17/17* [TZ]

**With the currently selected
timezone [(GMT-07:00)
Mountain Time (US &
Canada)], we'll be able to
plot about 17 pictures out of
17 for your trip.*

Mary's Loop

[Edit Name](#)

No trip description yet...

[Edit Description](#)

[Add Flickr Photosets +](#)

[Add Photos +](#)

[Download GPX](#)

[Download KML](#)

The map interface includes a toolbar on the left with the following options: Zoom In, Zoom Out, Zoom Extents, Delete Tracks, Crop Tracks, and Add Waypoint. At the top of the map area are tabs for Map, Satellite, and Hybrid. A photo popup window is open, showing a man wearing a cycling helmet and a black jacket, with an 'Edit' button below it. The map shows a red track with several red pin waypoints, overlaid on a satellite-style terrain map. Major roads like Highway 50, Highway 70, and Highway 139 are visible.

Tags

This trip has not been tagged yet.

[Add Tag](#)

Stats

Distance: 8.55 Miles
 Time: 00:00:00
 Average Speed: inf MPH
 High Point: 1473.84 m
 Low Point: 1385.40 m

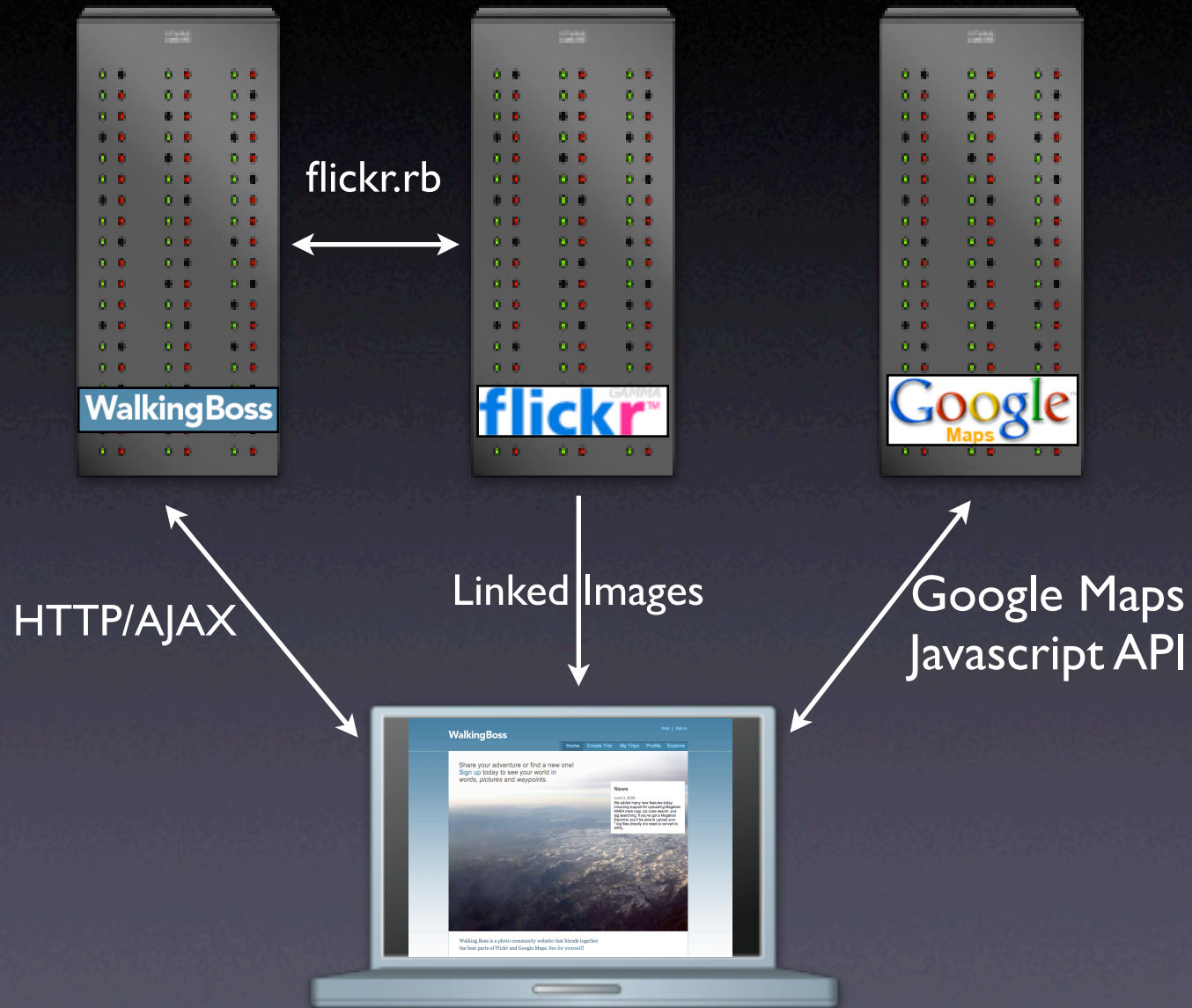
Waypoints

- Waypoint Name: Enter some notes about this... [✕](#)
- Waypoint Name: Enter some notes about this... [✕](#)
- Waypoint Name: Enter some notes about this... [✕](#)
- Waypoint Name: Enter some notes about this... [✕](#)
- Waypoint Name: Enter some notes about this... [✕](#)

How It Works

- GPS: automatic track logging
- Digital cameras: EXIF “DateTimeOriginal” tag

How It Works



Ruby on Rails

Ruby on Rails

- Developed by David Heinemeier Hansson
- Written in Ruby
- Released about 2 years ago under MIT license
- Becomes a really hot framework ~ 1-1.5 years ago

The Web 2.0 Hype

- Everything is new new new!!!
- Actually, the ideas are not all that new
- Some tried-and-true core ingredients

Ruby on Rails

- Simple Model-View-Controller Framework
- Wonderfully easy Object Relational Model
- “Don’t repeat yourself” = DRY
- “Convention over configuration”

Ruby on Rails

- Create a project: rails my_app
 - Generates a skeleton application
 - Three main directories:
 - app/models/
 - app/controllers/
 - app/views/

app/models/

- app/models/
 - ActiveRecord objects
 - Learns about your database
 - Powerful set of “finders”
 - Powerful set of relational modifiers



ActiveRecord Example

```
mysql> SHOW COLUMNS FROM users;  
+-----+-----+-----+  
| Field          | Type          | N  
+-----+-----+-----+  
| id             | int(11)       | N  
| login         | varchar(40)   | Y  
| email         | varchar(100) | Y  
| crypted_password | varchar(40)   | Y  
| salt          | varchar(40)   | Y  
| created_at    | datetime      | Y  
| updated_at    | datetime      | Y  
| password_reset_code | varchar(40)   | Y  
+-----+-----+-----+  
8 rows in set (0.00 sec)
```

ActiveRecord Example

```
mysql> SHOW COLUMNS FROM users;  
+-----+-----+-----+  
| Field          | Type          | N  
+-----+-----+-----+  
| id             | int(11)       | N  
| login          | varchar(40)   | Y  
| email          | varchar(100)  | Y  
| crypted_password | varchar(40)   | Y
```

```
class User < ActiveRecord::Base  
  # No need for any SQL  
  # find/update/create/delete code!  
  
  # This class automatically knows  
  # about 'id', 'login', 'email', etc.  
end
```

ActiveRecord Example

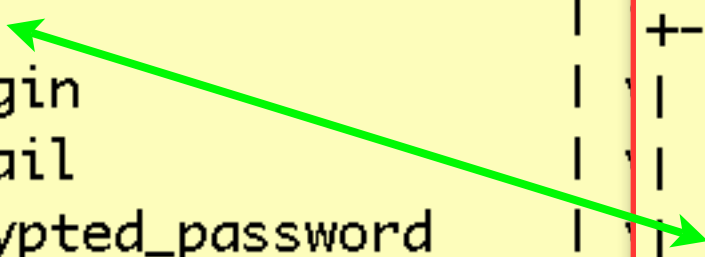
```
mysql> SHOW COLUMNS FROM users;
```

Field
id
login
email
crypted_password
salt
created_at
updated_at
password_reset_code

8 rows in set (0.00 sec)

```
mysql> SHOW COLUMNS FROM trips;
```

Field	Type	Null
id	int(11)	NO
gpx_file_id	int(11)	NO
user_id	int(11)	NO
name	varchar(100)	NO
description	text	YES
distance	int(11)	NO



ActiveRecord Example

```
mysql>
```

```
+-----+  
| Field |  
+-----+  
| id    |  
| login |  
| email |  
| crypt |  
| salt  |  
| creat |  
| updat |  
| passw |  
+-----+  
8 rows
```

```
class User < ActiveRecord::Base  
  has_many :trips  
end
```



```
app/models/user.rb
```

```
class Trip < ActiveRecord::Base  
  belongs_to :user  
end
```

```
app/models/trip.rb
```

```
OM trips;
```

```
+-----+  
| Num |  
+-----+  
| NO  |  
| NO  |  
| NO  |  
| NO  |  
r(100) | NO  |  
| YES |  
| NO  |
```

app/controllers/

- app/controllers/
 - Contains controller objects
 - Business logic
 - Interacts with model objects to read, update, delete and create records

Controller Example

```
class TripController < ApplicationController
  ...
  def new
    @trip = Trip.new
  end
  ...
  def edit
    @trip = Trip.find(params[:id])
    if current_user != @trip.user
      redirect_to(view_trip_url(:id => params[:id]))
    ...
    @trip.save
  end
  ...
end
```

} A Rails “action.”
Accessed via URL like “/trip/new”

app/views/

- app/views/
 - Templates with tag-replacement
 - ERb or xmlBuilder
 - Controller action maps to view name

View Example

```
<div id="container">
  <div class="leftcolumn">
    <% cache(:action => 'view', :part =>
      <div class="description">
        <h1><%= @trip.name %></h1>
        <p> <%= @trip.description %>
        <div id="edit_info" style="display: none">
        </div>
      <% end %>
    <% cache(:action => 'view', :part =>
      <div class="map">
        <p id="loadingMap"> Loading Trip
          <br/>
          
        </p>
        <div id="map" style="width: 100%; height: 100px; border: 1px solid black;">
        </div>
      </div>
    <% end %>
  </div>
</div>
```

"app/views/trip/view.rhtml" 47L, 2061C

Erb

Helpers

- `app/helpers/`
- Building forms
- Using Prototype for AJAX
- Using Scriptaculous for effects
- Sort of a ruby-to-JS or ruby-to-HTML compiler

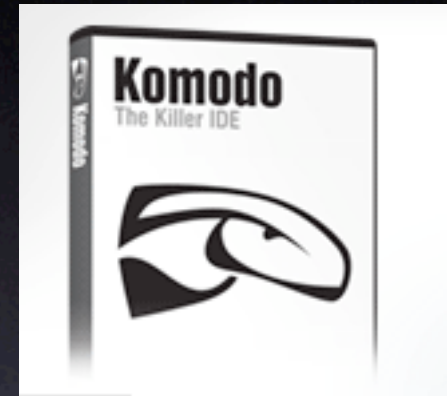
AJAX Support

- AJAX: Asynchronous Javascript and XML
 - XMLHttpRequest
 - cross-browser support
- Prototype.js: OOP JS lib supporting AJAX
- Scriptaculous: visual effects lib based on Prototype.js

Deployment

- **Web Server:** Apache, lighttpd
- **CGI Options:** FastCGI, SCGI, or Mongrel
- **Database:** MySQL, PostgreSQL, SQLite, Oracle, SQL Server, DB2, or Firebird

IDEs/Editors



textmate the missing editor
code and markup brought to the 21st century



radrails



?

Rails Sites

- MOG.com
- Odeo.com
- 37signals apps
- 43things.com
- shopify.com
- Many more! See: <http://www.rubyonrails.org/applications>

Q&A