

iamtalented

Introduction to Ruby on Rails

The Future



Credit: <https://www.youtube.com/watch?v=nKlu9yen5nc>

Today

What's Happening?

0930 Introductions

1000 Programming with Ruby

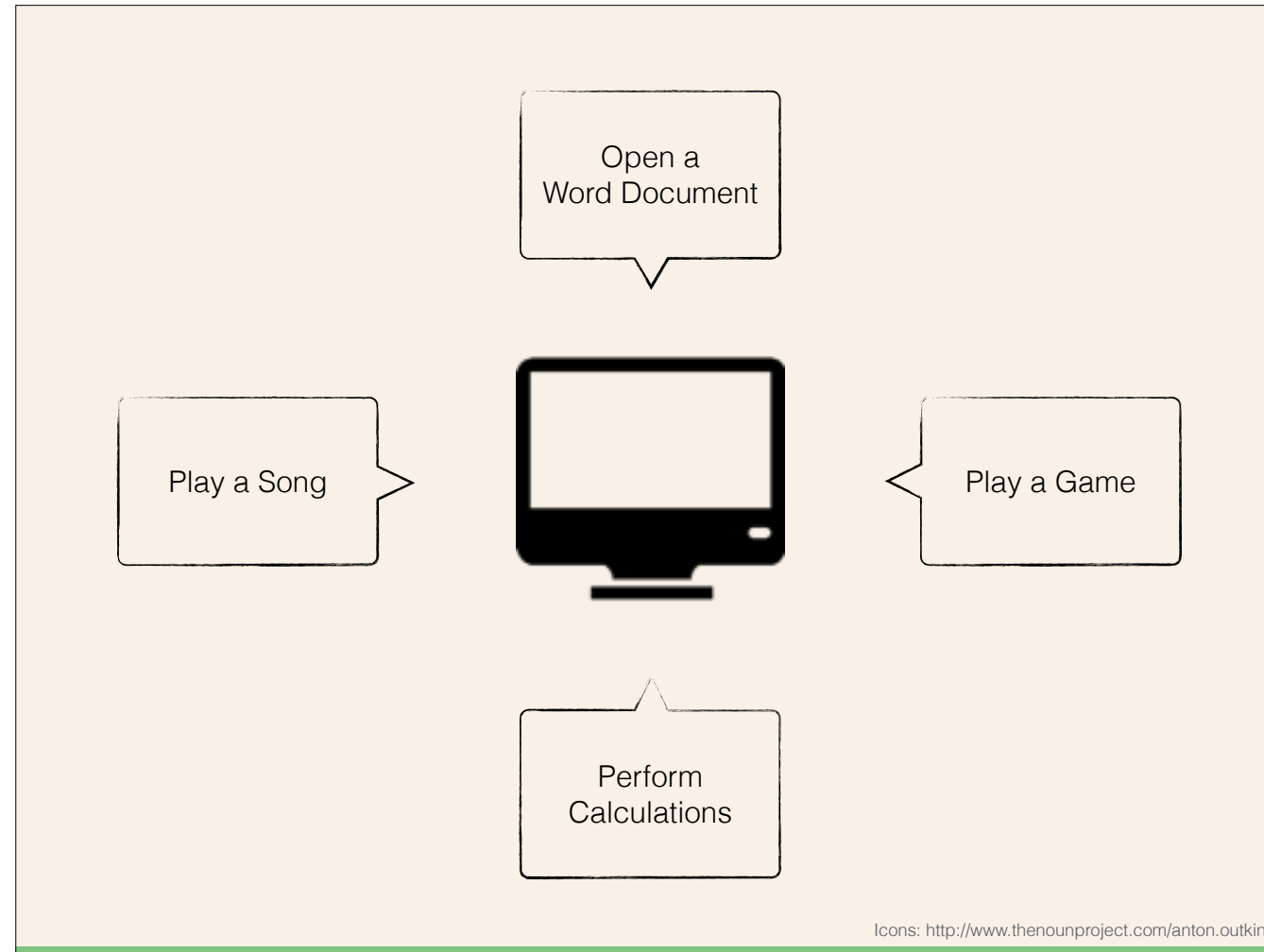
1130 Let's build a Web App

1230 Lunch

1330 Continue with Web App

1600 Closing

What is Programming?



Instructions that tells a Computer to do something.

A computer can execute billions of instructions per second!

But you need to speak its language - the Computer's language.

Give us examples of Programs that you know of?

Ruby

- A Computer's Language

Yukihiro “Matz” Matsumoto

- Created Ruby in mid 1990s
- Influenced by Perl, Smalltalk, Eiffel, Ada, and Lisp.
- Ruby 1.8 (2003), 1.9 (2007), 2.0 (Feb 2013), 2.1 (Dec 2013), 2.2 (Dec 2014)
- Gained popularity with Rails around 2005



Photo: http://en.wikipedia.org/wiki/File:Yukihiro_Matsumoto_EuRuKo_2011.jpg



**I hope to see Ruby help every programmer in the world
to be productive, to enjoy programming, and to be happy.
That is the primary purpose of Ruby language.**

– Yukihiro “Matz” Matsumoto

Let's try [ruby.org](https://tryruby.org)

tryruby.org

Go through together with students till Exercise?
This should take about an hour?

IRB

Interactive Ruby Shell

Data Types

- Numbers
- Strings
- Booleans
- Symbols
- Arrays
- Hashes

irb

```
>> 1_00.class
```

```
>> '10'.class
```

```
>> true.class
```

```
>> :i.class
```

```
>> [1,'1',:i, [1,2]]
```

```
>> {a: '1', :b => '2'}
```

Boolean

true vs. false

nil is false

Symbols

performance benefits

show object_id vs. string (identifier)

Arrays

Initialization (.new, .new(2), [])

Accessing (position starts from 0) [2,3] vs [1..4]

.first, .last

.length, .count

.empty?, .include?

Adding elements: << / .push unshift

Remove elements: pop, shift

.sort

.uniq

.each

.map

Hashes

Initialization (.new, .new(), {})

Accessing by key (strings, by symbols)

Operators

- `+` : Addition
- `-` : Subtraction
- `*` : Multiplication
- `/` : Division
- `**` : Exponentiation
- `%` : Modulo

```
irb
```

```
>> 1 + 1
```

```
>> 1 - 1
```

```
>> 1 * 5
```

```
>> 9 / 3
```

```
>> 2 ** 2
```

```
>> 9 % 8
```

String Interpolation

irb

```
>> my_name = 'Winston'  
>> "I am #{my_name}"  
=> "I am Winston"
```


if

```
if is_true  
  # do something  
end
```

irb

```
>> if 1+1 != 3  
>>   "that's true"  
>> end  
=> "that's true"
```

if-else

```
if is_true
  # do something
else
  # do something
end
```

irb

```
>> hungry = false
>> if hungry
>>   "time to eat"
>> else
>>   "code some more"
>> end
=> "code some more"
```

while

```
while is_true do  
  # do something  
  # modify to false  
end
```

irb

```
>> counter = 1  
>> while counter < 6 do  
>>   puts counter  
>>   counter = counter + 1  
>> end  
1  
2  
3  
4  
5
```

Infinite Loop

```
while never_ending  
  # do something  
end
```

irb

```
>> x = 1  
>> while x > 0  
>>   puts x  
>> end  
1  
1  
1  
1  
1  
> ctrl-c
```

Break

What is a Web Application?

Internet?



Analogy: <https://speakerdeck.com/therod/programming-101>

A Restaurant!



Analogy: <https://speakerdeck.com/therod/programming-101>

In a Restaurant

You tell the **WAITER** what you would like to eat (a **DISH**) by pointing on the **MENU**.

The **WAITER** delivers your request to the **CHEF**.

The **CHEF** prepares your **DISH**, and sends it back through the **WAITER** again.

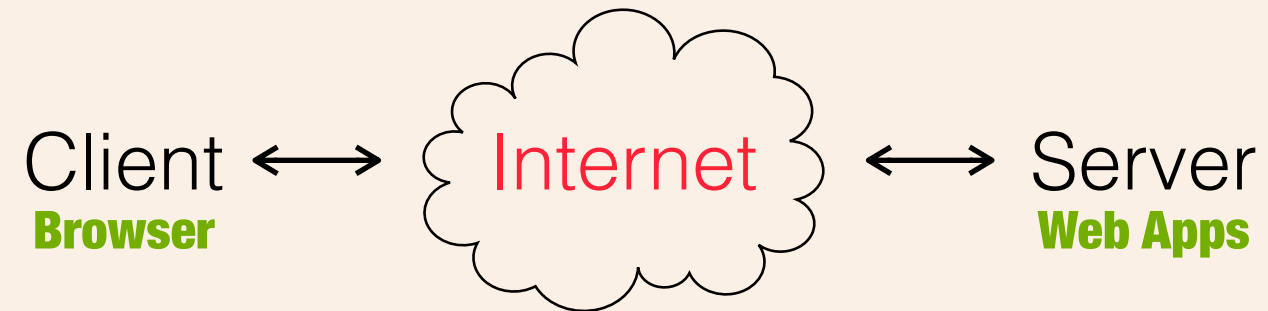
Online

You tell the **INTERNET** what you would like to see (a **PAGE**) by pointing in the **BROWSER**.

The **INTERNET** delivers your request to the **SERVER**.

The **SERVER** prepares your **PAGE**, and sends it back through the **INTERNET** again.

Internet?



Analogy: <https://speakerdeck.com/therod/programming-101>

Web Apps act like... **Chefs**

- Take requests
- Do something with the requests
- Send the results back

Analogy: <https://speakerdeck.com/therod/programming-101>

What's a Web App again?

Web Apps are programs that lives on the server
that responds to your requests.

They can listen to specific instructions.

Just like a Chef!

For example, you can go to the hawker centre and order

Kopi O Siew Dai or Char Kway Teow Mai Hum

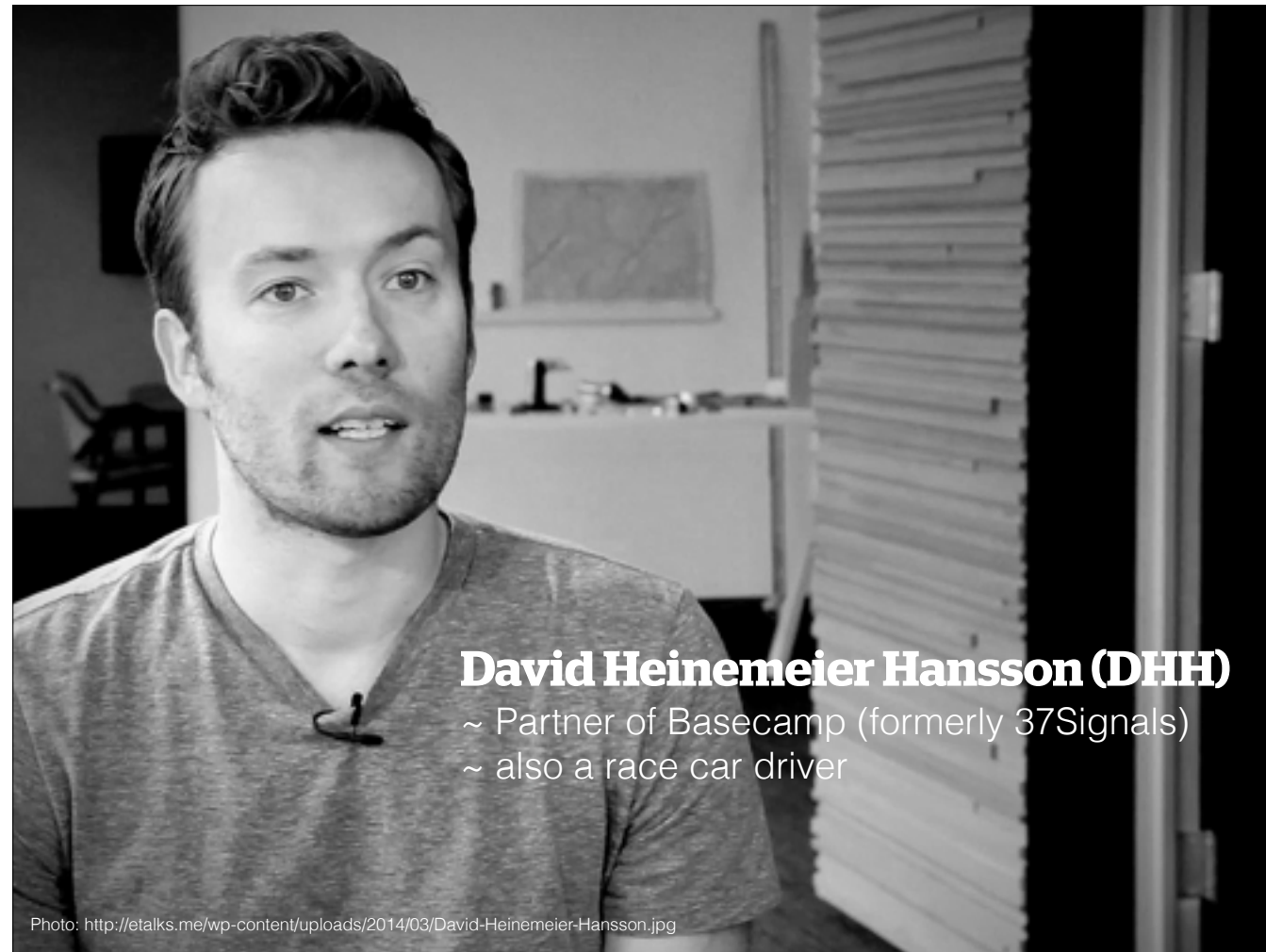
You can also tell i.e. Facebook, to decline your Mom's Friend Request!

**Let's build
a Web Application**

Ruby on Rails



<http://rubyonrails.org>



David Heinemeier Hansson (DHH)

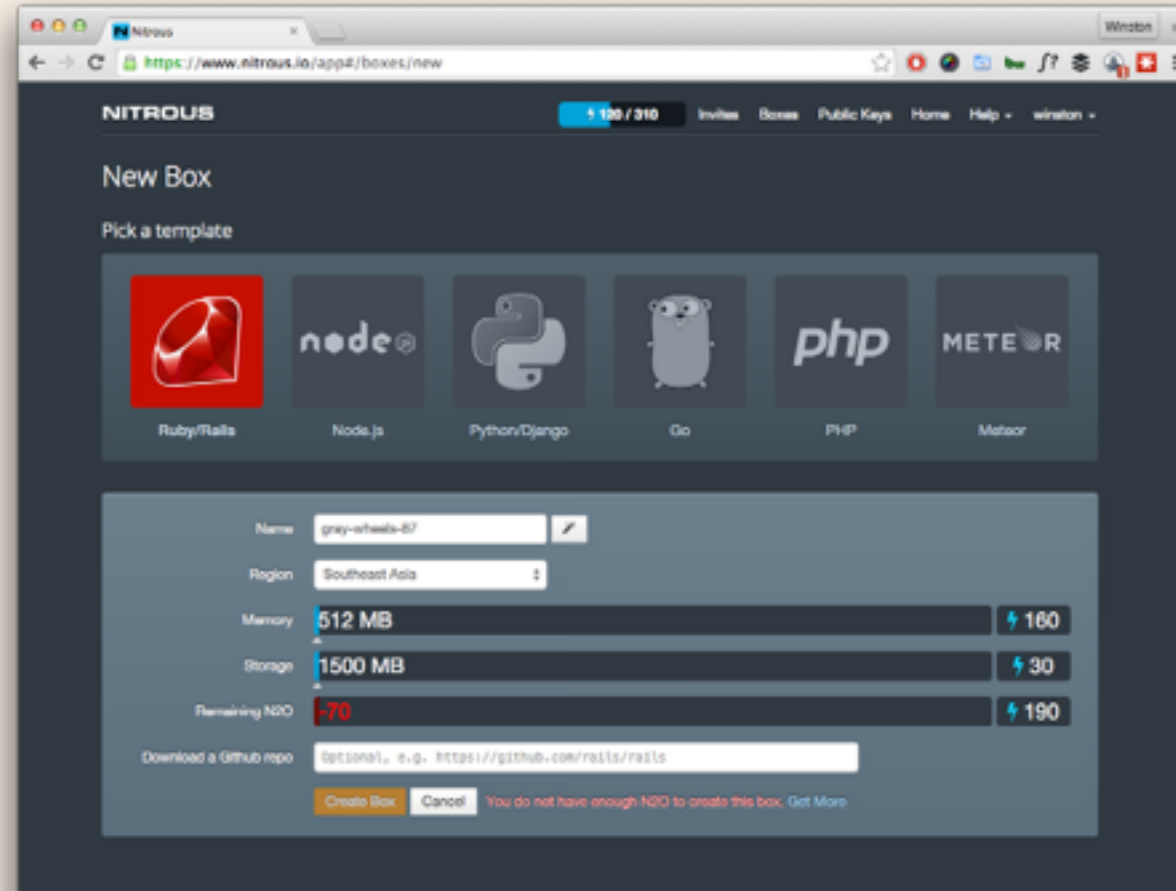
- ~ Partner of Basecamp (formerly 37Signals)
- ~ also a race car driver

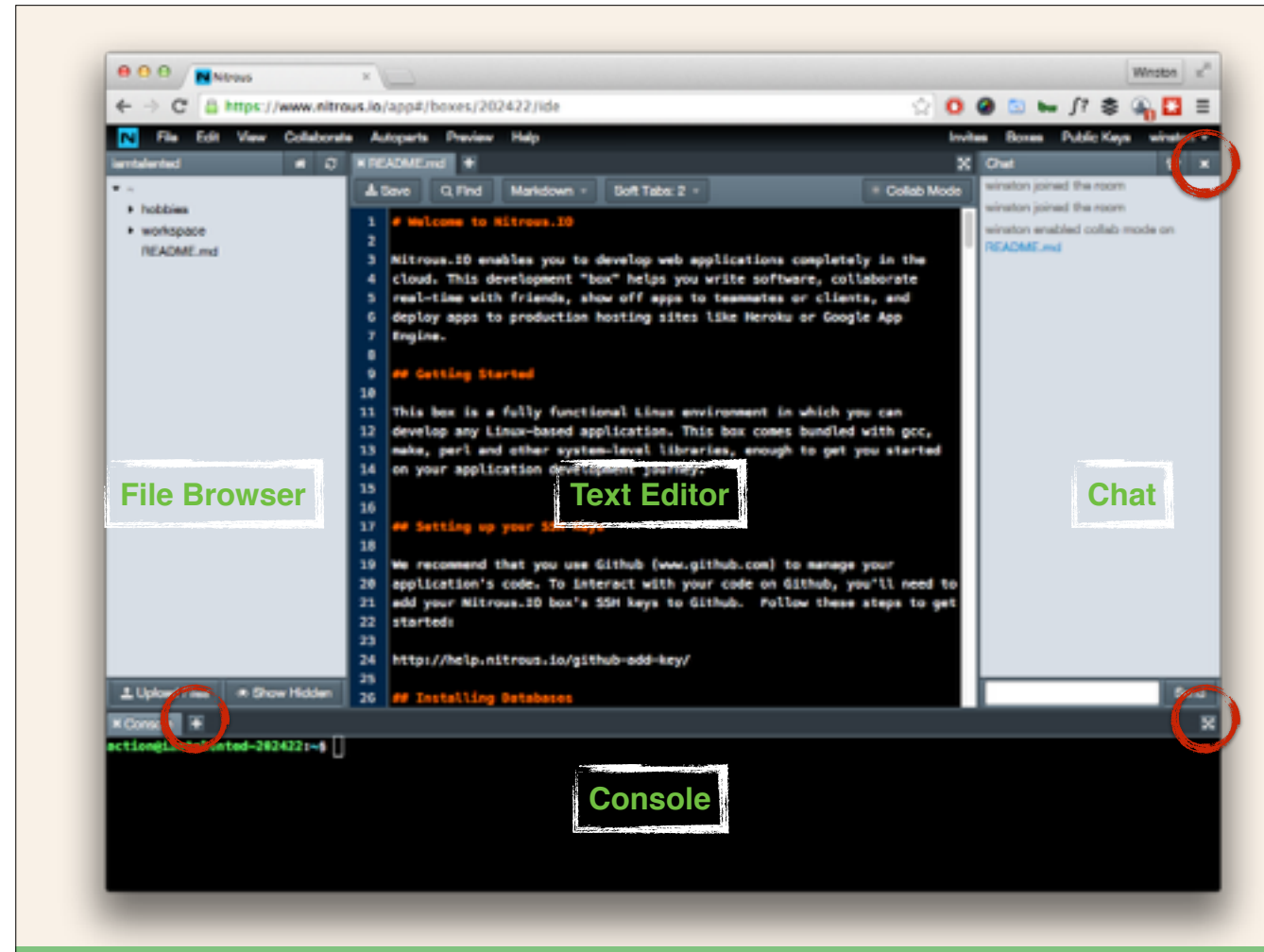
Photo: <http://etalks.me/wp-content/uploads/2014/03/David-Heinemeier-Hansson.jpg>

Ruby on Rails Powered

- Twitter
- Groupon
- Airbnb
- Shopify
- Hulu
- Viki
- Bloomberg
- Slideshare
- Basecamp
- Zendesk
- Friendster
- Wego

<http://www.nitrous.io>





Console Commands

irb

```
>> pwd
```

```
>> ls -la
```

```
>> ruby -v
```

```
>> rails -v
```

Create a Rails app

irb

```
>> cd workspace
```

```
>> rails new hobbies
```

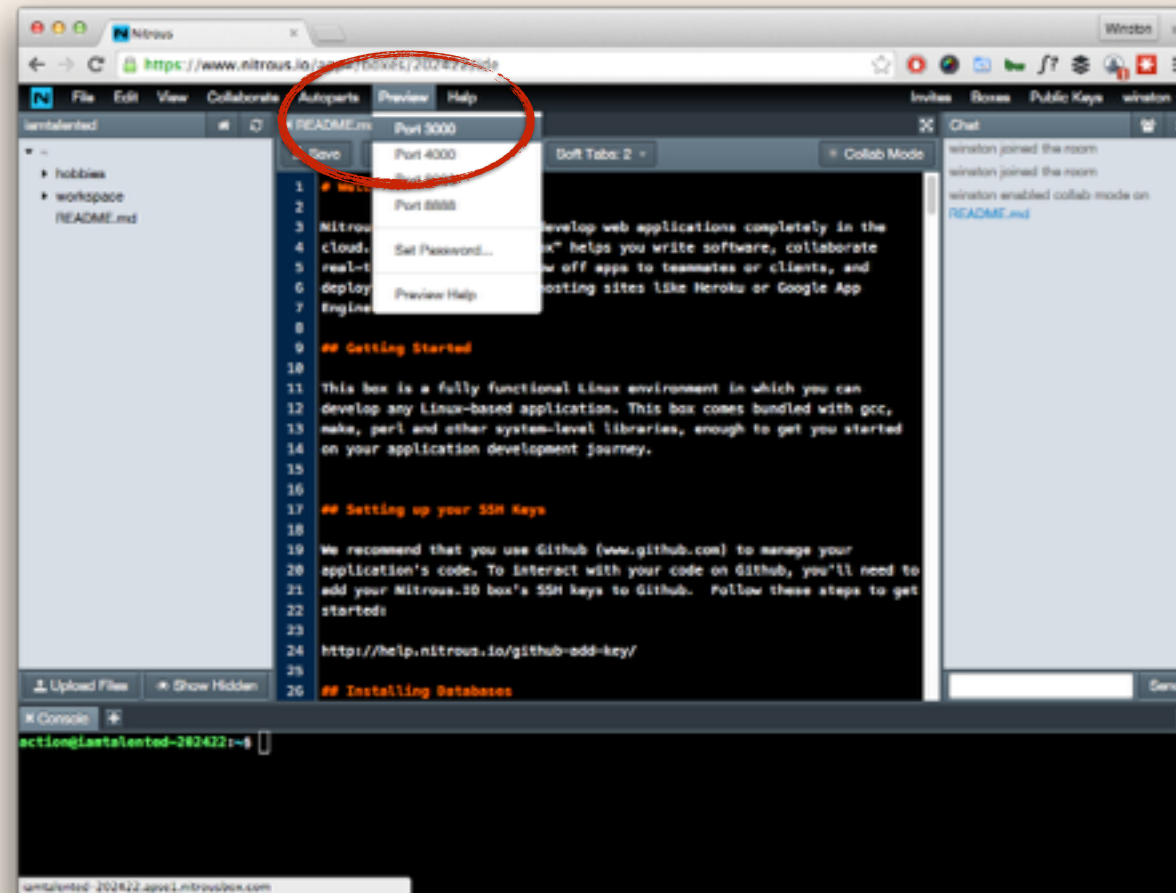
```
>> cd hobbies
```

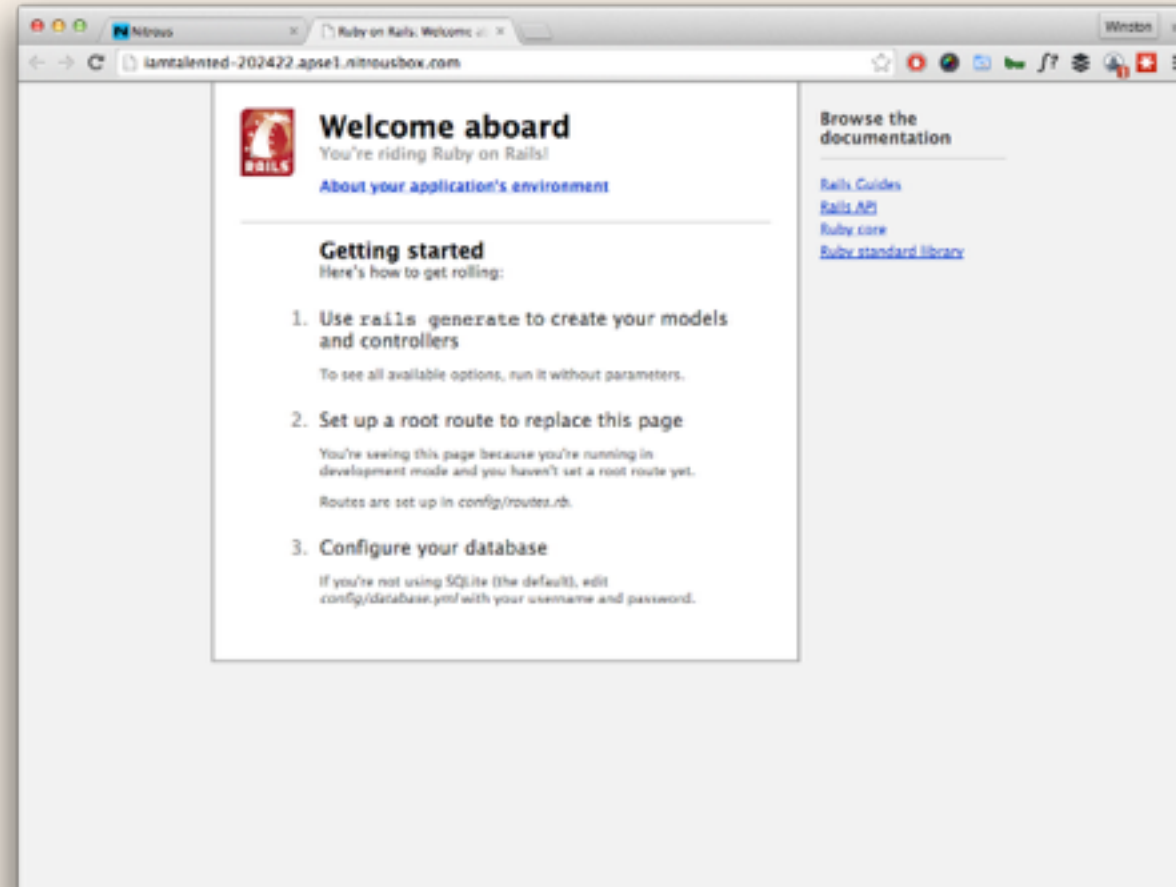
```
>> ls -la
```

Start a Rails app

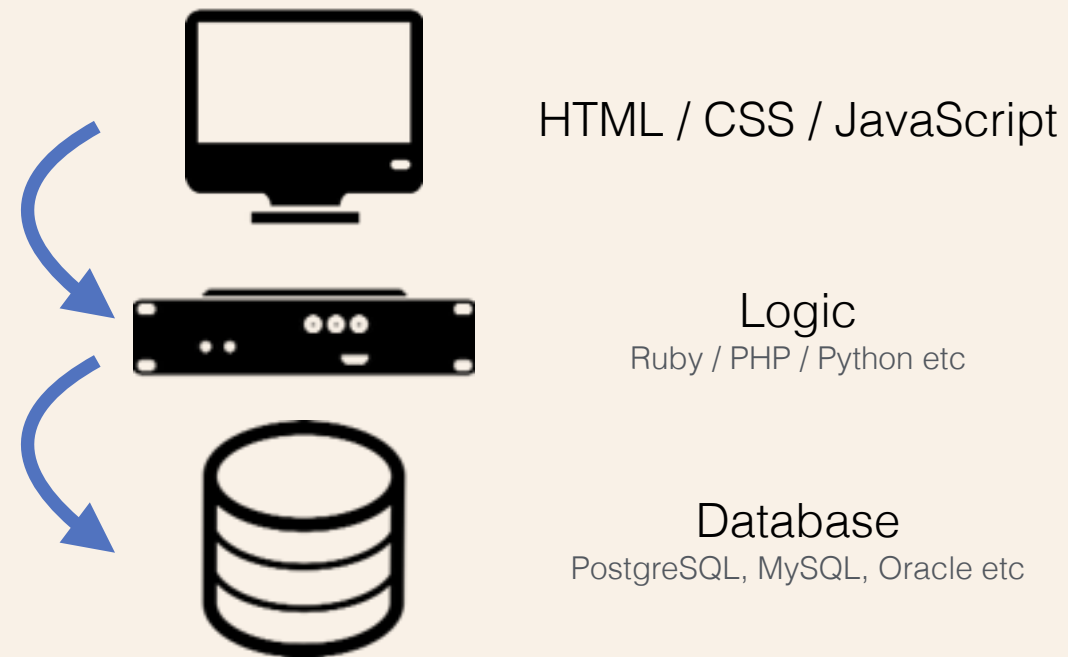
irb

```
>> rails server  
==> Booting WEBrick  
...  
...  
...  
>> <ctrl+c>
```



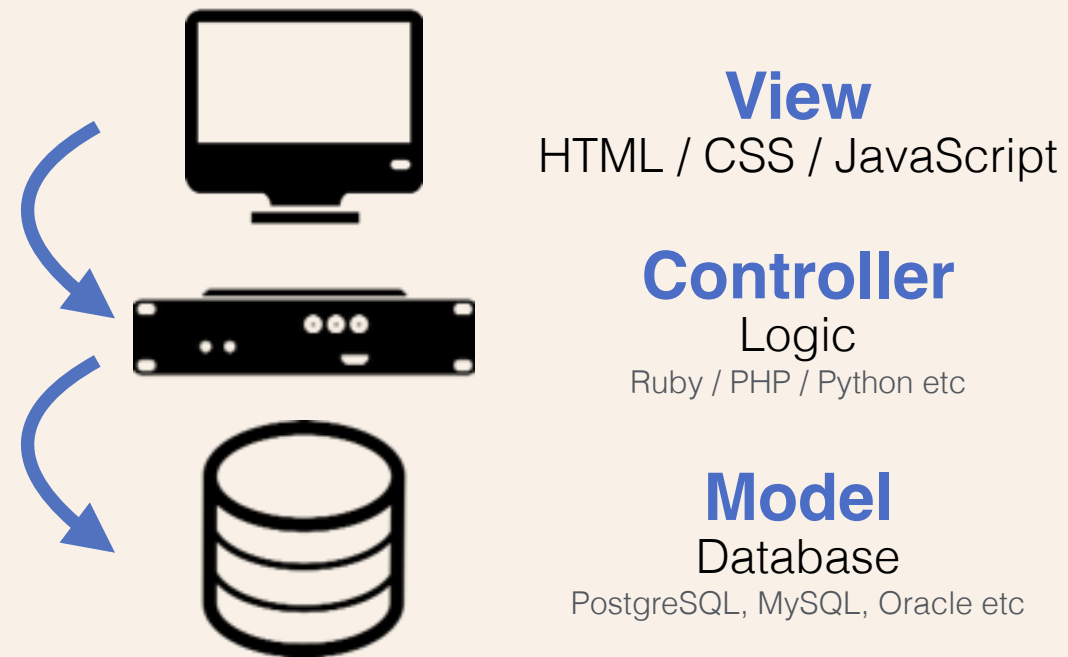


Model-View-Controller



Icons: <http://www.thenounproject.com/anton.outkine>

Model-View-Controller

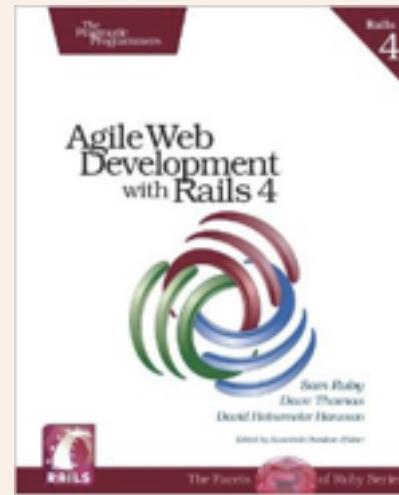


Icons: <http://www.thenounproject.com/anton.outkine>

Follow Along

See GitHub!

The Book



<http://pragprog.com/book/rails4/agile-web-development-with-rails-4>



**I think everyone should learn how to program a computer,
because it teaches you how to think.**

**I view computer science as a liberal art, something
everyone should learn to do.**

– Steve Jobs

Congratulations!