



Confronting Errors

Coding is hard

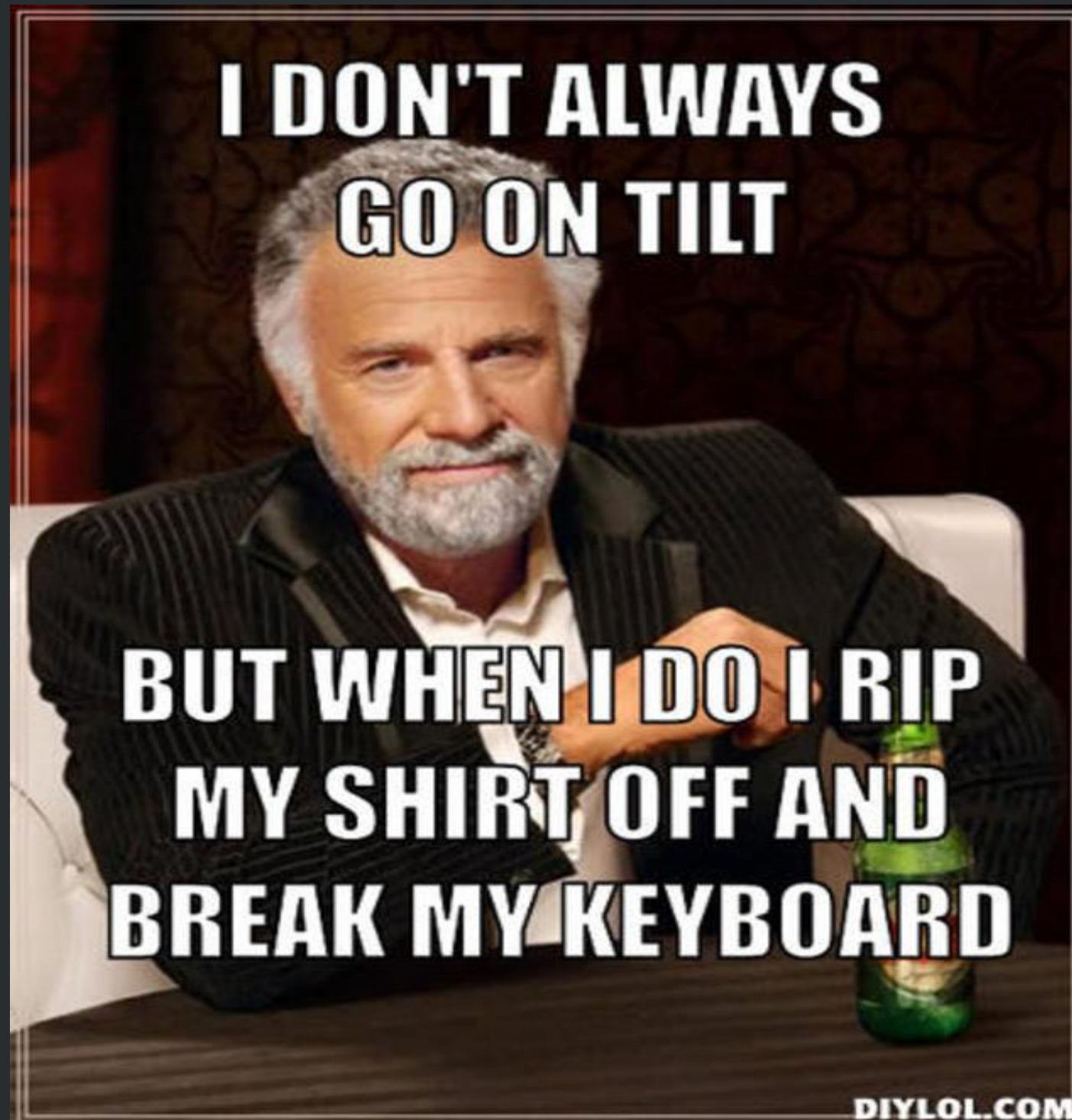


Sometimes we make
mistakes.

Sometimes these
mistakes cause errors

So how do we fix these errors?

Don't go on tilt



Believe it or not errors
are here to help us

We should let the
errors guide us to the
correct answer

Lets take a look at a
couple of common
errors and how to
solve them

No method error

```
class Animal
  def initialize(name, age)
    @name = name
    @age = age
  end
end

dog = Animal.new("Shadow", 7)

puts dog.name
```

No method error

```
errors.rb:9:in `': undefined method `name' for #<Animal:  
0x007ffebaa0b278 @name="Shadow", @age=7> (NoMethodError)
```

Oh no, what to do?

Look at the error first

No method error

```
class Animal
```

```
  def initialize(name, age)
```

```
    @name = name
```

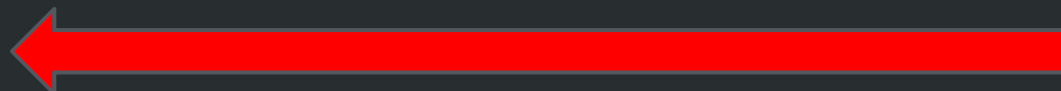
```
    @age = age
```

```
  end
```

```
end
```

```
dog = Animal.new("Shadow", 7)
```

```
puts dog.name
```

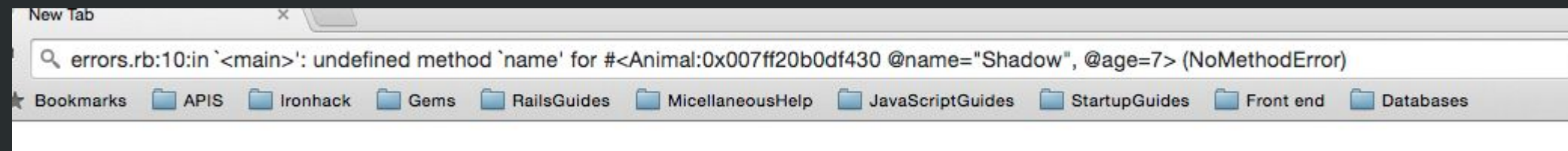


Ruby thinks we're
trying to call a "name"
method on our dog

But our dog doesn't
have a name method!

There's a couple fixes
for this, but how do we
find them?

Let's consult our old
friend google.



Your search - **errors.rb:10:in `<main>': undefined method `name' for #<Animal:0x007ff20b0df430 @name ...** - did not match any documents.

Suggestions:

- Make sure all words are spelled correctly.
- Try different keywords.
- Try more general keywords.
- Try fewer keywords.

???

We have to remove
information specific to
our application from
the error

Class names, method
names, file names etc

What we really need is
the error, and just the
error

Google

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About 180,000 results (0.40 seconds)

Version bump of ActiveRecord gem needed for Ruby 2.2 ...
<https://github.com/rails/rails/issues/18991> ▾
Feb 18, 2015 - A lot of people are experiencing the following error with Ruby 2.2 and this ... **NoMethodError: undefined method `name'** for nil:NilClass from ...

has_many NoMethodError: undefined method `name' for nil ...
https://github.com/activescaffold/active_scaffold/issues/380 ▾
Jan 12, 2015 - has_many **NoMethodError: undefined method `name'** for Also, try in rails console, replacing [column_name] with the column giving error:

Class: NoMethodError (Ruby 2.2.0) - Ruby-Doc.org
ruby-doc.org/core-2.2.0/NoMethodError.html ▾ Ruby-Doc.org ▾
NoMethodError: undefined method `to_ary' for "hello":String ... Construct a **NoMethodError** exception for a method of the given name called with the given ...

ruby on rails - NoMethodError (undefined method `name' for ...
stackoverflow.com/.../nomethoderror-undefined-method-name-for-nilnil... ▾
Mar 1, 2015 - I've created a user model called shop. When I try to sign up a new Shop through the new.html.erb form, I get a **NoMethodError** because name is ...

Ruby - NoMethodError (undefined method for nil:NilClass)
stackoverflow.com/.../ruby-nomethoderror-undefined-method-for-nilnil... ▾
Feb 11, 2014 - **Ruby - NoMethodError (undefined method for nil:NilClass):**

Not quite what we
want either, Ruby and
Rails have quite a bit of
crossover.

Let's try refining our
search even further.

ruby (NoMethodError)



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About 339,000 results (0.57 seconds)

Class: NoMethodError (Ruby 2.2.0) - Ruby-Doc.org

ruby-doc.org/core-2.2.0/NoMethodError.html ▾ Ruby-Doc.org ▾

Construct a **NoMethodError** exception for a method of the given name called with the given arguments. The name may be accessed using the #name method on ...

Ruby NoMethodError - Stack Overflow

stackoverflow.com/questions/5739547/ruby-nomethoderror ▾

Apr 21, 2011 - It appears that the issue is that the initialized method that you have declared in Backend is an instance method. When you then call ...

undefined method (NoMethodError) ruby - Stack Overflow

stackoverflow.com/questions/.../undefined-method-nomethoderror-ruby ▾

Jan 12, 2014 - This is because you are calling method choices , before defining it. Write the code as below: puts "Select [1] [2] [3] or [q] to quit" users_choice ...

How to Fix a NoMethodError in Rails - YouTube



www.youtube.com/watch?v=WFTQfz8JofI ▾

May 15, 2014 - Uploaded by edutechional

This video shows a typical way to debug a **NoMethodError** or an incorrect undefined method call in a Ruby on ...

Ruby for Newbies: Missing Methods - Tuts+ Code Tutorial

code.tutsplus.com/tutorials/ruby-for-newbies-missing-methods-net-20924 ▾

NoMethodError

Raised when a method is called on a receiver which doesn't have it defined and also fails to respond with `method_missing`.

```
"hello".to_ary
```

raises the exception:

```
NoMethodError: undefined method `to_ary' for "hello":String
```

Public Class Methods

There were also some
helpful links to
examples with our
exact problem

Sometimes we just
have to refine our
search to get the right
results

Now let's actually fix
the problem.

We don't have the
method "name", how
can we add it?

Option #1

```
class Animal
  def initialize(name, age)
    @name = name
    @age = age
  end
  def name
    return @name
  end
end

dog = Animal.new("Shadow", 7)
puts dog.name
```



Option #2

```
class Animal
```

```
  attr_reader :name
```



```
  def initialize(name, age)
```

```
    @name = name
```

```
    @age = age
```

```
  end
```

```
end
```

```
dog = Animal.new("Shadow", 7)
```

```
puts dog.name
```

Step 1

Find the line of the error, Ruby
gives this to you

Step 2

Check your notes, and memory.
Have I had this error before?

Step 3

If that fails, consult your friend
google

Remember to only include the error, no specifics from your program.

Step 4

Check the google results

Does someone have a similar
problem to you?

Rarely will you have an exact
match

Maybe someone has a **User** class
with an undefined method **age**

Use your reasoning skills to draw
a correlation

Step 5

Attempt to fix the error, don't
copy and paste, apply

Step 6

Repeat

Other Common Errors

Undefined Ruby Methods

Sometimes we call a method on
the wrong kind of ...something

Undefined Ruby Methods

Maybe I want to use a `.each` on a
big number to get each of its
numbers.

Undefined Ruby Methods

```
42333434.each do | num |  
  puts num  
end
```



```
#each.rb:1:in `<main>': undefined method  
`each' for 42333434:Fixnum (NoMethodError)
```

Looks familiar, huh?

Where do we start?

We're talking about an
Fixnum so lets start in
the Fixnum docs

Methods

```
#ceil  
#chr  
#denominator  
#downto  
#even?  
#floor  
#gcd  
#gcdlcm  
#integer?  
#lcm  
#next  
#numerator  
#odd?  
#ord  
#pred  
#rationalize  
#round  
#succ  
#times  
#to_i  
#to_int  
#to_r  
#truncate  
#upto
```

Nope, let's try it's
parent, numeric

#%
#+@
#-@
#<=>
#abs
#abs2
#angle
#arg
#ceil
#coerce
#conj
#conjugate
#denominator
#div
#divmod
#eql?
#fdiv
#floor
#i
#imag
#imaginary
#initialize_copy
#integer?
#magnitude
#module
#nonzero?
#numerator
#phase
#polar
#quo
#real
#real?
#rect
#rectangular
#remainder
#round
#singleton_method_added
#step
#to_c
#to_int
#truncate
#zero?

Nope, now we know
why it's an undefined
method

Sorry, no cool tricks,
we're just going to
have to find a different
solution

```
42333434.to_s.chars.each do | num |  
  puts num  
end
```

Undefined Ruby Methods

```
undefined method [method_name] for  
nil:NilClass (NoMethodError)
```

Undefined Ruby Methods

It's a common error to introduce
nil values and try to call methods
on them.

Example

```
class Animal
  def initialize(name, age)
    @name = name
    @age = age
  end

  def name
    return @name
  end
end

dog = Animal.new("Shadow", 7)
puts dog.name.upcase
```

Undefined Local variable or method

Let's do something different with
my animal example.

Undefined Local variable or method

Say I make a mistake with my
dog variable.

Undefined Local variable or method

```
class Animal
  def initialize(name, age)
    @name = name
    @age = age
  end

  def name
    return @name
  end
end
```

```
dog = Animal.new("Shadow", 7)
puts dawg.name
```



Undefined Local variable or method

```
#errors.rb:14:in `<main>':
```

```
undefined local variable or method
```

```
`dawg' for main:Object (NameError)
```

Undefined Local variable or method

What does this mean?

Undefined Local variable or method

The variable doesn't exist. Check your syntax, check your spelling.

Undefined Local variable or method

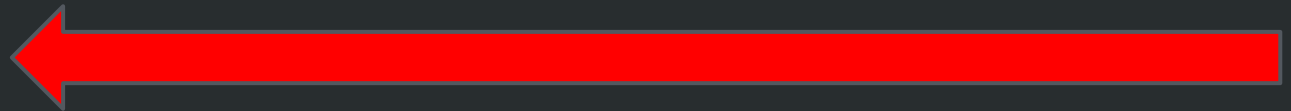
It could also mean you aren't in
the correct scope

Undefined Local variable or method

```
class Animal
  def initialize(name, age)
    @name = name
    @age = age
  end
  def dog_years
    return age * 7
  end

  def name
    return @name
  end
end
```

```
dog = Animal.new("Shadow", 7)
puts dog.dog_years
```



Undefined Local variable or method

```
errors.rb:8:in `dog_years': undefined local  
variable or method `age' for #<Animal:  
0x007fe19181b058 @name="Shadow", @age=7>  
(NameError)
```


Undefined Local variable or method

```
class Animal
  def initialize(name, age)
    @name = name
    @age = age
  end
  def dog_years
    return age * 7
  end

  def name
    return @name
  end
end
```

```
dog = Animal.new("Shadow", 7)
puts dog.dog_years
```



Undefined Local variable or method

We don't have access to "age" in
our dog_years method

Undefined Local variable or method

So Ruby throws us an error

Undefined Local variable or method

...but we do have an `@age` in this
method scope

Undefined Local variable or method

```
class Animal
  def initialize(name, age)
    @name = name
    @age = age
  end
  def dog_years
    return @age * 7
  end

  def name
    return @name
  end
end

dog = Animal.new("Shadow", 7)
puts dog.dog_years
```

Adding the wrong types together

Let's say I have an array of foods and I want to add another one to it

Adding the wrong types together

```
array = ["Pizza", "Cookies", "Icecream"]
```

```
array += "Cake"
```

```
#adding.rb:3:in `<main>': no implicit conversion of  
String into Array (TypeError)
```

The problem?

In Ruby we can perform
certain operations on
objects of different type

This means that when we declare a variable, Ruby infers what type it is

After that, we can't add
something of another type
to it

```
number = 1
```

```
number += "2"
```

```
#adding.rb:5:in `+': String can't be coerced  
into Fixnum (TypeError)
```

```
string = "You can't add numbers to me, go  
ahead and try"
```

```
string += 2
```

```
#TypeError: no implicit conversion of Fixnum  
into String
```

```
from (irb):3:in `+'
```

```
from (irb):3
```

```
number = 1
```

```
number += 2
```

```
# 3
```

```
string = "You can't add numbers to  
me, go ahead and try"
```

```
string += "!"
```

```
#"You can't add numbers to me, go  
ahead and try!"
```

Remember, don't get
frustrated

Find the line of the
error.

Try to make sense of
the error based on that

PRY is a great ally in
this battle

And if all else fails,
consult your friend
google.