gem that

by James Adam

hello, I'm James Adam, and I'm going to talk a little bit about building gems.

the title for my talk is 'gem that', which makes me think the opening slide should be more like

gem that!

by James Adam!

wow! Gem that! but realistically it should be more like

(a constructive rant, and then gem-this)

(and writing gem commands)

(by James Adam)

a constructive rant, and then what I did - i.e. gem-this, and then some information about writing gem commands.

I am going to have to drive at around 88 MPH to get through this, so it's probably best to save questions for the end, otherwise I might crash.

but first

building gems - a primer

it’s worth spending a few seconds considering the background of building gems.

in it’s simplest form, building a gem is simply a case of

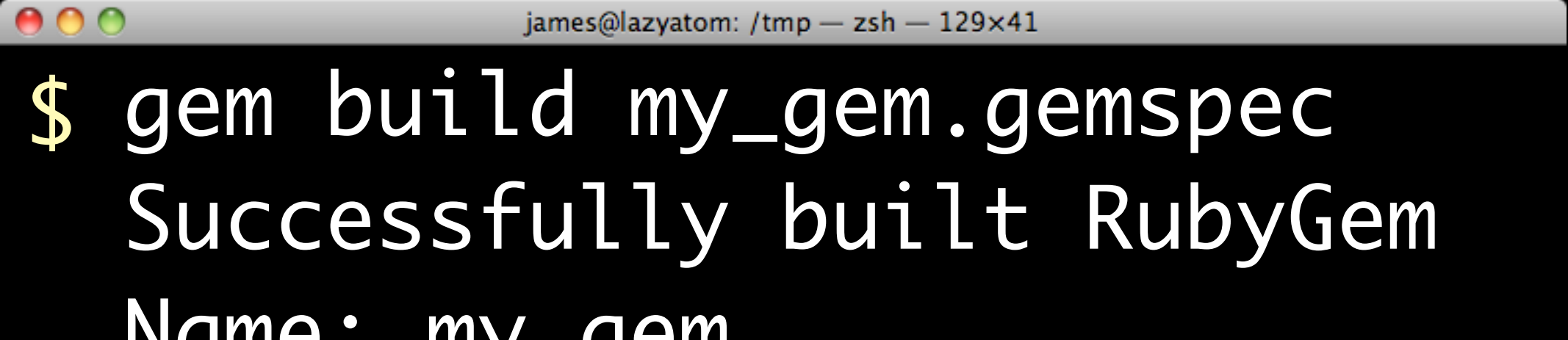
my_gem.gemspec

```ruby
Gem::Specification.new do |s|
  s.name = "my_gem"
  s.version = "1"

  s.authors = ["James Adam"]
  s.date = "2009-12-10"
  s.description = "What it does"
  s.email = "james@lazyatom.com"
  s.files = ["Rakefile", "lib/thing.rb"]
  s.homepage = "http://lazyatom.com"
  s.require_paths = ["lib"]

  # etc
end
```

constructing a ‘gemspec’, which is ruby code that describes a gem, what it does, what files it should include and which dependencies it has, and then



building that gem using the '**gem build**' command.

it's really not that **sophisticated**, and the capabilities are **built right into rubygems itself**.

however, given some of the tools, you might not realise that it is so simple.

my motivation

secondly, I should explain **my own perspective** here. As a developer, I quite often toy around with an idea before deciding that it might be suitable for other people to use.
Often I've already put a bit of effort into **organising the code**, writing some rake tasks and so on.
So when it comes to turning it into a gem, I am looking for a tool that is going to support **me.**

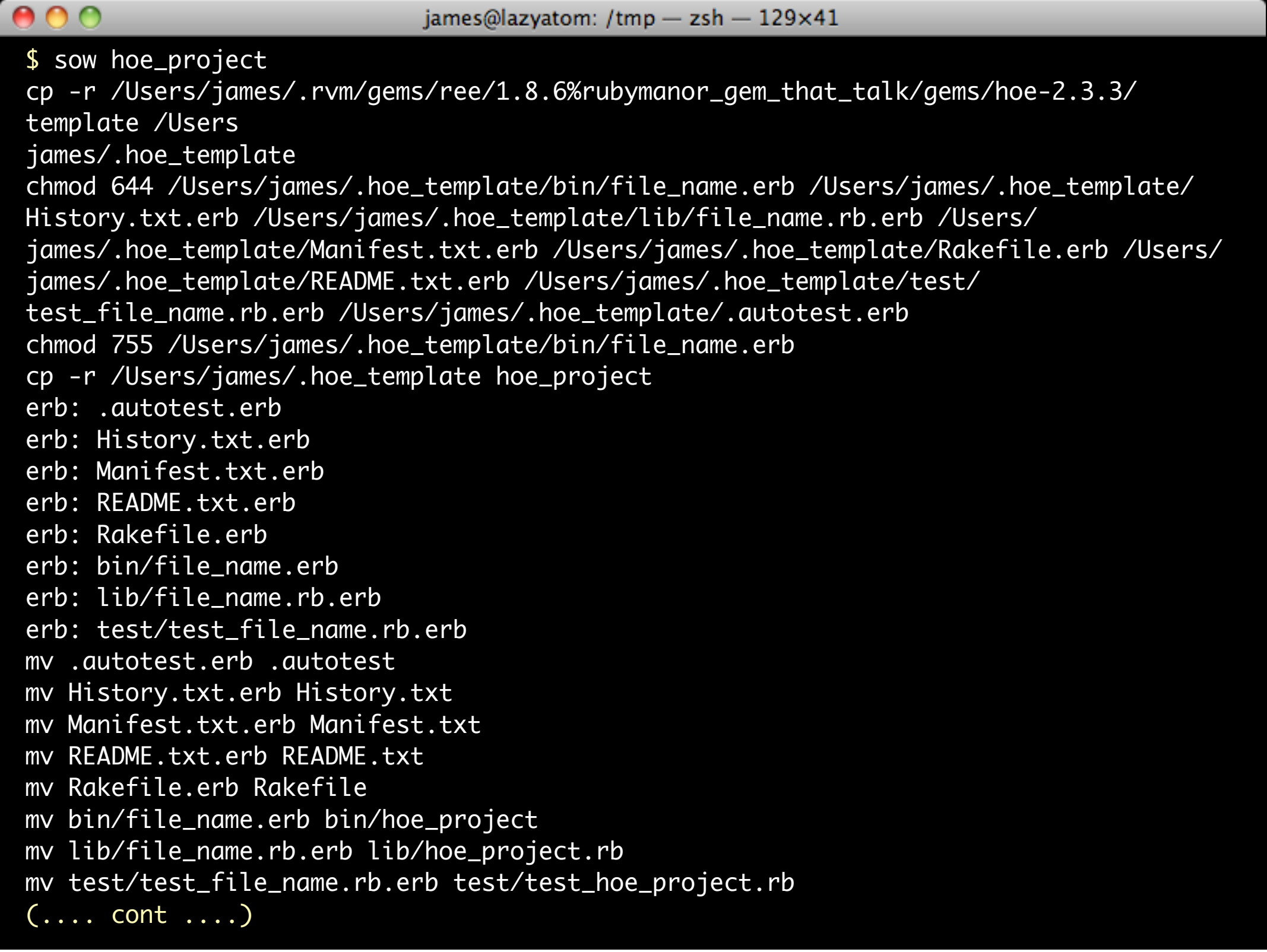
So what should I use?

hoe

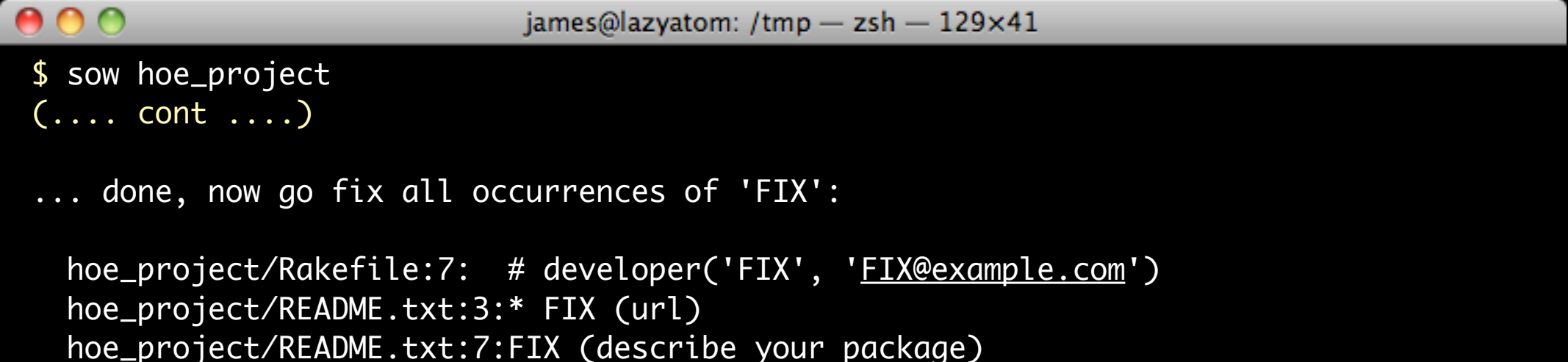
the ‘godfather’ of gem creation

well, the original daddy of gem creation was ‘hoe’, written by Ryan Davis. It provides a command to run when you’re setting up your project - ‘sow’.

So let’s see what happens when we run that.



Wow. I mean... firstly, look at all that stuff. Where do I start? It's created an autotest file, and a Manifest, and a README, and it's still not even finished



now I am starting this project with a ton of stuff that needs to be **fixed**; I am starting my project with a bunch of debt that I need to pay off!

And what is this Manifest? do I have to use autotest? Well, OK, let's take a look at the Rakefile.

hoe Rakefile

```ruby
# -*- ruby -*-
require 'rubygems'
require 'hoe'

Hoe.spec 'hoe_project' do
  # developer('FIX', 'FIX@example.com')

  # self.rubyforge_name = 'hoe_projectx'
    # if different than 'hoe_project'
end

# vim: syntax=ruby
```

What I really dislike about Hoe's Rakefile is that it requires me to learn all about Hoe before I can really get started. All it's given me is a hint about where I should put my name and email.

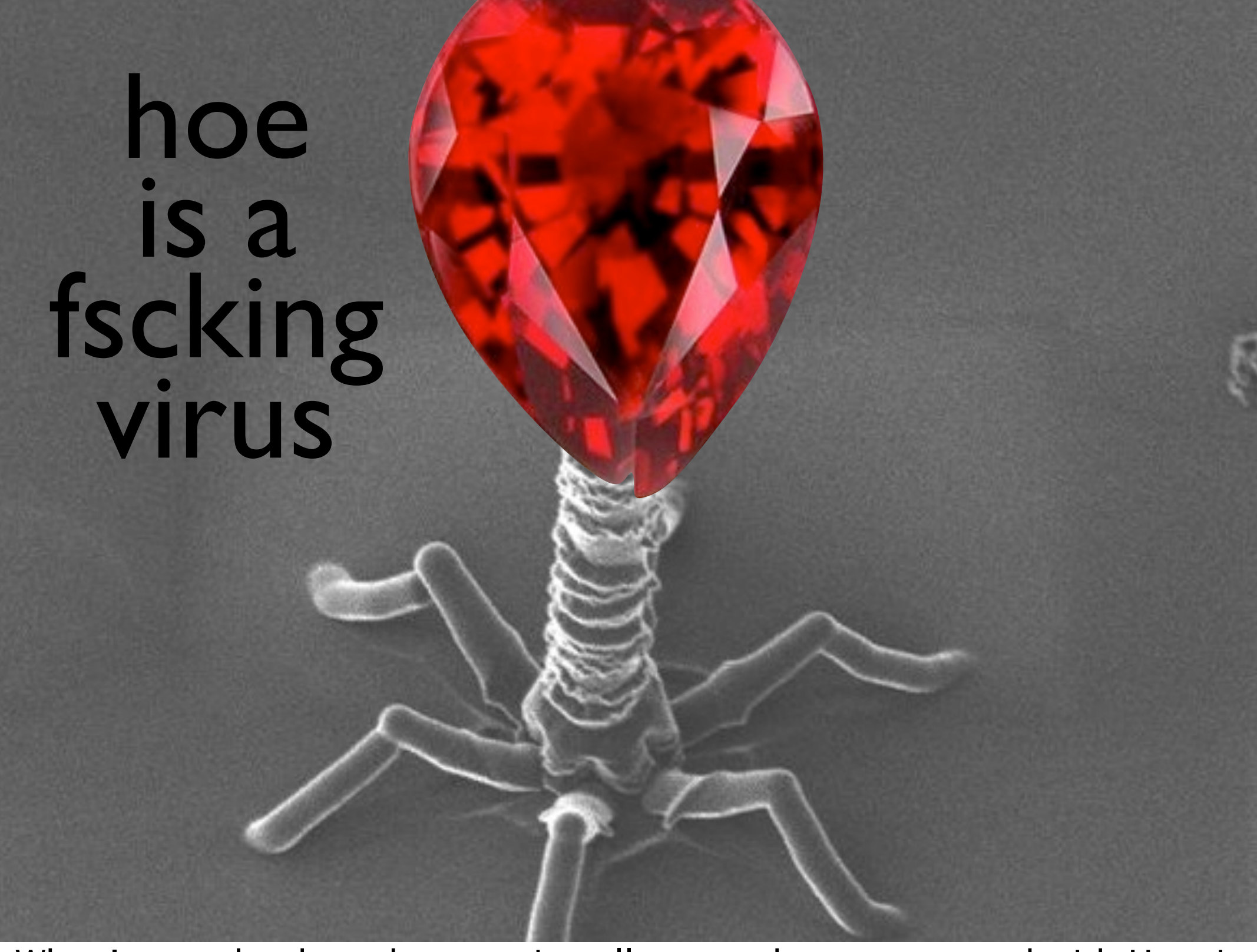
hoe Rakefile

```
Hoe.spec 'hoe_project' do
    # ???

end
```

What is supposed to go here? **Pour through the RDoc**, when I'd rather be writing my own code.

So sure, there's a learning curve involved when using Hoe, but the really major turnoff for me is that hoe is a virus...



What I mean by that when you install a gem that was created with Hoe, it will also install Hoe itself.

Hoe is controlling the generation of the gem, and Hoe adds itself as a dependency.

That immediately pisses me off.
Now I should qualify this by saying that

Hoe **was** a virus, because in recent times, it has relented, and doesn't require itself to be installed by every gem that uses it.

but **IT'S TOO LATE HOE. YOU ARE DEAD TO ME.**

So what else can I try?

newgem

- Dr Nic

NewGem, from Dr Nic Williams

Oh, which means incidentally that this presentation should be called

by Dr James Adam!

Gem That!

by DOCTOR James Adam, but anyway, there’s

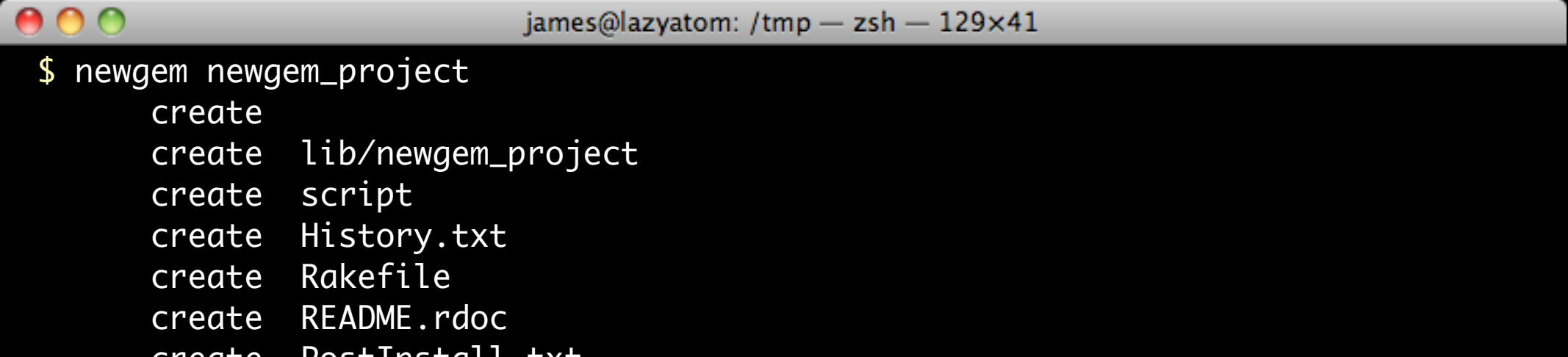
newgem

- generating structure, like the rails command
- extensible with other ‘generators’
- pretty bat-shit mental.

NewGem, from Dr Nic Williams (http://drnicwilliams.com/2006/10/11/generating-new-gems/)

which seems to be a **product of the post-rails age**, and fully embraces the ‘generative’ style of programming.

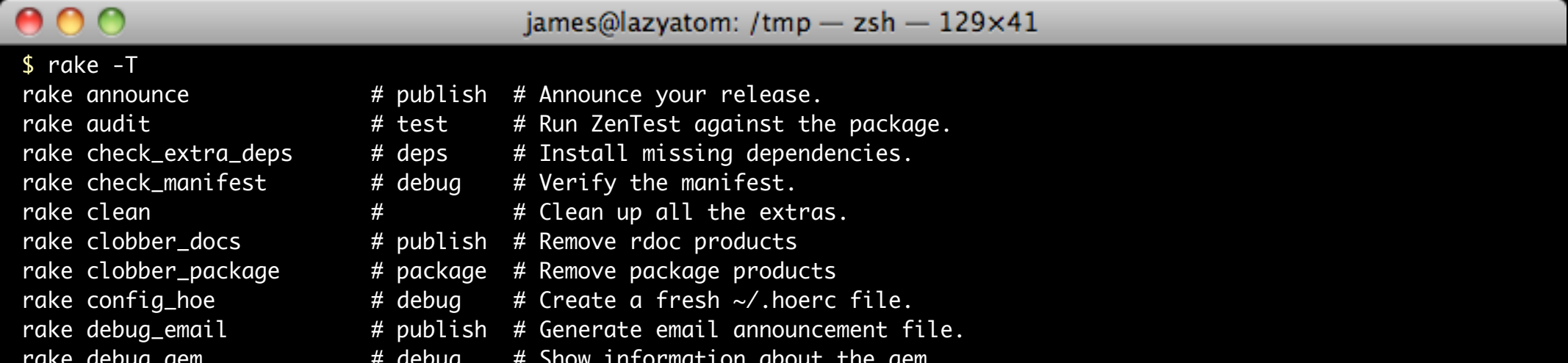
Lets see what happens when we try to use that



Look at all that stuff – PostInstall? script/console? script/generate?

It's obvious that newgem is **trying to be comprehensive** in the sorts of libraries that it might be used with, but this does seem a bit like overkill.

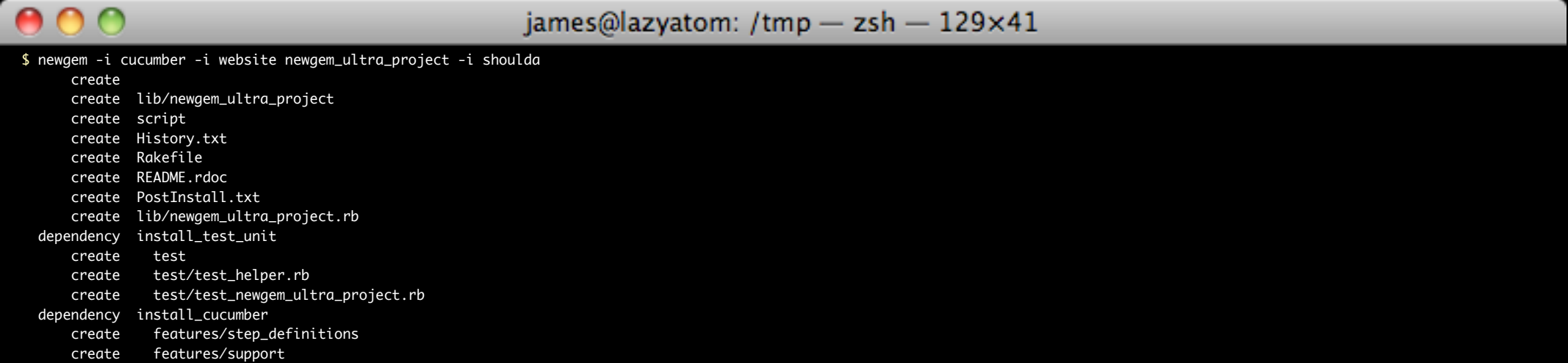
And look at all the Rake tasks it generates.



By my count, that's THIRTY FOUR rake tasks, including posting to a blog, installing the gem locally but WITHOUT any rdoc, and **printing a list of the email addresses of the authors for the gems that THIS gem depends on...**

I mean... I am pretty sure I don't need that.

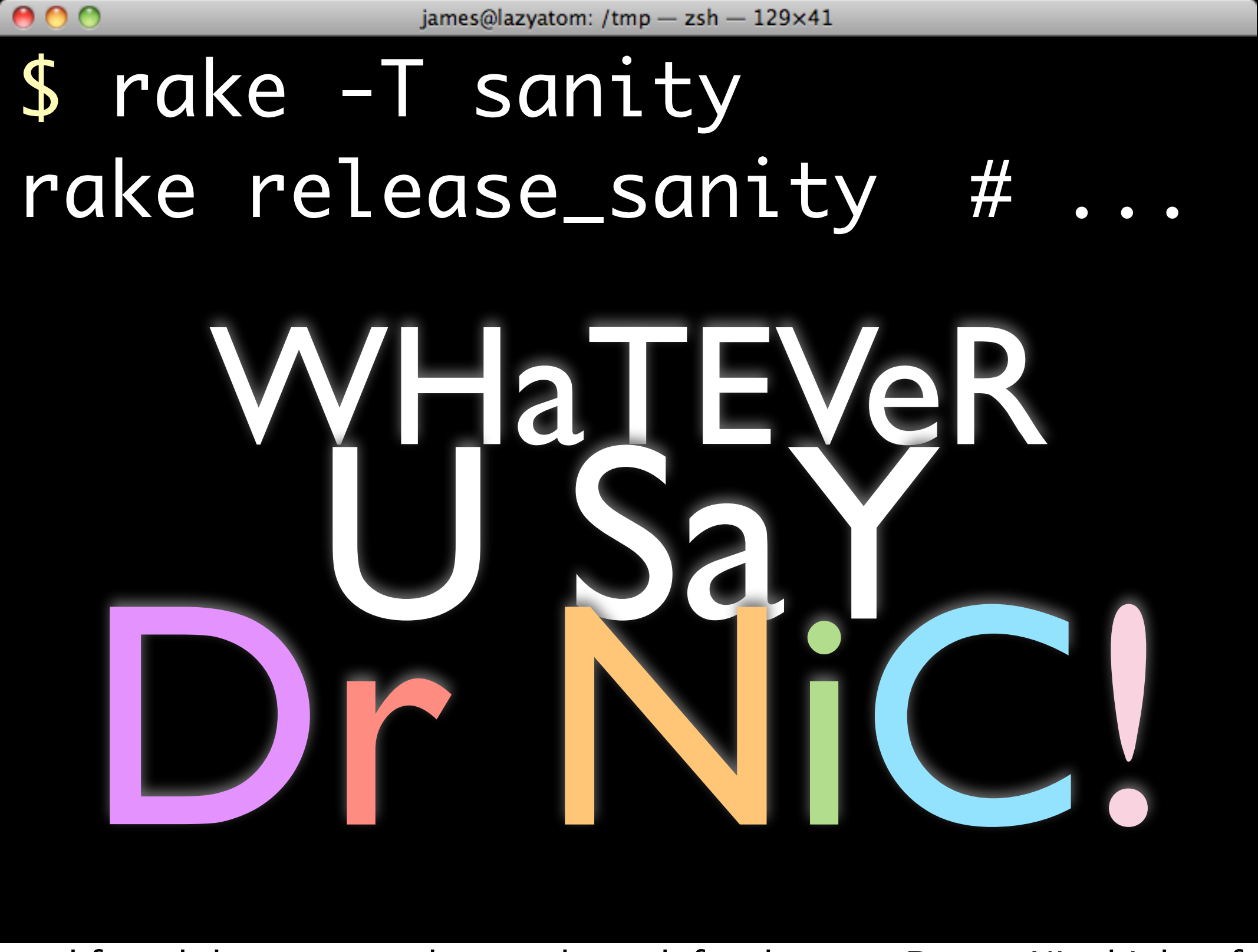
We're still not done. That was the simple mode - and we can provide it with additional 'generators'. Lets try it with a few more



Now newgem is creating me a website, and a bunch of stub tests and cucumber features for code that I haven't written yet! Thanks, newgem!

I am kind-of speechless, because faced with this all of a sudden my little idea for a useful library seems **unworthy** of being a gem, because it surely doesn't warrant all of this support behind its existence.

I started to question my grip on reality at this point



and found that newgem has a rake task for that too. Doctor Nic thinks of everything!

The one geniunely good thing about newgem, however, is that every website it creates

New Gem Generator

http://newgem.rubyforge.org/

Google UK

How to submit patches

Read the 8 steps for fixing other people's code and for section 8b: Submit patch to Google Groups, use the Google Group above.

You can fetch the source from either:

- rubyforge: http://rubyforge.org/scm/?group_id=2340

```
git clone git://rubyforge.org/newgem.git
```

- github: http://github.com/drnic/newgem/tree/master

```
git clone git://github.com/drnic/newgem.git
```

Build and test instructions

```
cd newgem
rake test
rake install_gem
```

License

This code is free to use under the terms of the MIT license.

Contact

Comments are welcome. Send an email to Dr Nic Williams.

Dr Nic, 29th December 2008

Theme extended from Paul Battley

Go to "http://rb2js.rubyforge.org/"

has a link to Paul Battley on it, increasing his pagerank.

Nice work, Paul! It's a shame that you had to make a deal with the devil to do it.

So what now?

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Nice work, Paul! It’s a shame that you had to make a deal with the devil to do it.

So what now?

echoe

= (hoe) - (it being a dependency)

echoe is a fork of ‘hoe’ by evan weaver, whose main purpose was to avoid having itself as a dependency.

It doesn’t provide a generator, with is a positive. Instead you have to add a few lines to your Rakefile

echoe Rakefile

```
require 'echoe'
Echoe.new('gem_name')
```

Here’s the contents of an echoe Rakefile

But it’s still very opaque. How do I add new stuff? How do I change the description?

Well, you do it a bit like this

echoe Rakefile

```ruby
Echoe.new("vanilla.rb") do |p|
  p.author = "James Adam"
  p.summary = "A talk about this would've
               been awesome"
  p.url = "http://interblah.net"
  p.runtime_dependencies = ["soup >=1.9.9"]
  # etc... ?
end
```

But to figure **that** out you still need to **dive into the RDoc**, and even then it's not simple.

For example, the **only way to change the version** of a gem is to add a line to the **CHANGELOG** file.

And even though echoe doesn't declare itself as an **explicit dependency** of the gems it creates, if you want to put other tasks in the Rakefile that people can run **without** installing echoe, you need to

echoe Rakefile

```
begin
  require 'echoe'
  Echoe.new('my_gem')
rescue LoadError
  # probably nothing
end
# the rest of your Rakefile
```

wrap the echoe code in a block to capture the exception! Ugly.

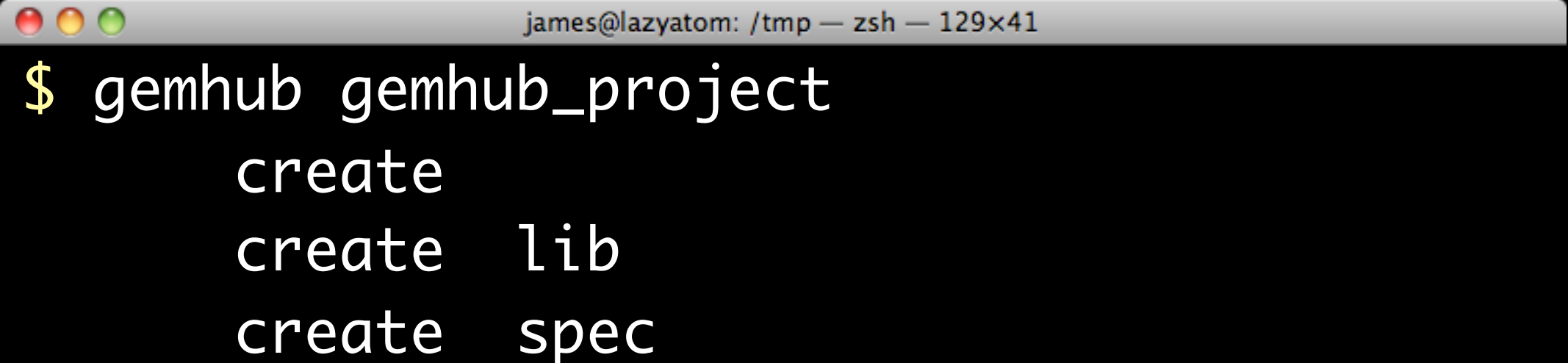
Next.

gemhub

(somewhat of a mystery to me)

So when I proposing this talk on the mailing list, someone mentioned gemhub (http://github.com/dcrec1/gemhub) by **Diego Carrion**, who claims on his blog to '**love bits, tits and beers**', but we'll try not to hold that against him.

If we run it's generator



we see something a bit more sane, but at this point I'm so agitated that

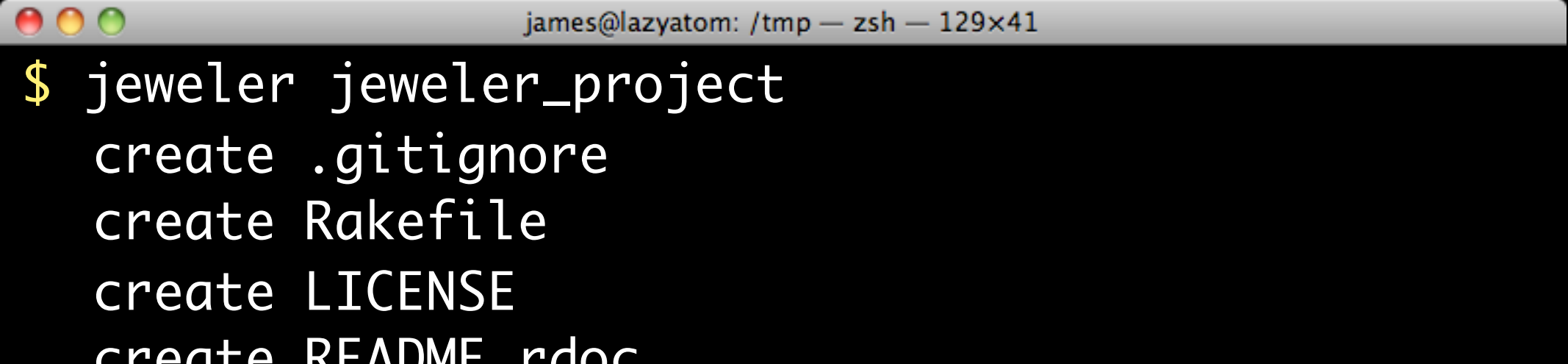
* when I notice it's telling me that I should be using **RSPEC** for my tests when I prefer Shoulda,
* and **TEXTILE** for my documentation when I think that Markdown is clearer for plaintext,

... I start weeping and saying "No, No gemhub, you could've been right for me, but we're TOO DIFFERENT." Next.

jeweler

the choice of a new generation

So then we have Jeweler (http://github.com/technicalpickles/jeweler), which I would say is ‘top dog’ among the newest crop of Ruby developers; lets see what it does to offend me, yes?



OK, this is not too bad, certainly not as bat-shit mental as newgem (although I don't understand what .document is).

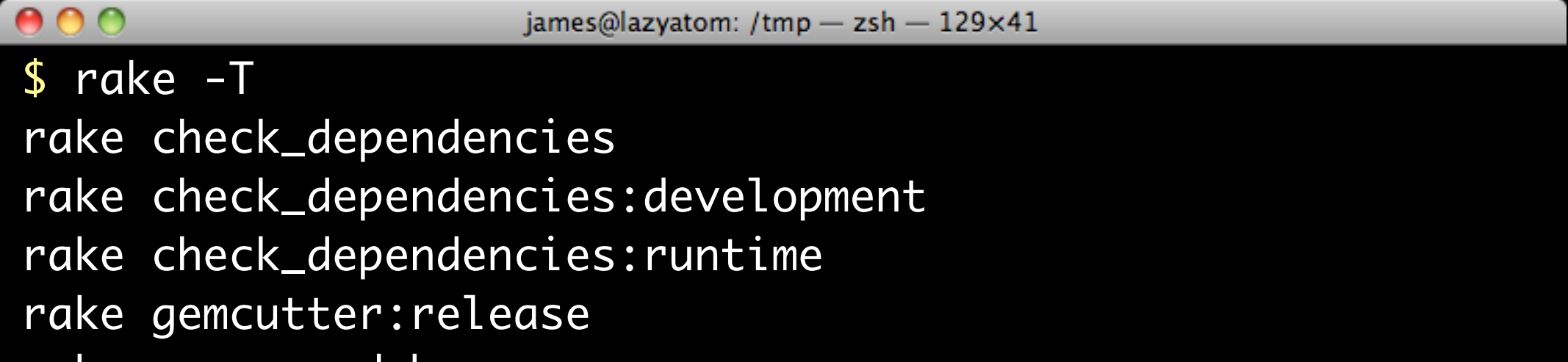
If we look at the Rakefile

jeweler Rakefile

```ruby
begin
  require 'jeweler'
  Jeweler::Tasks.new do |gem|
    gem.name = "jeweler_project"
    gem.summary = %Q{summary of your gem}
    gem.email = "james@lazyatom.com"
    gem.homepage = "http://github.com/..."
    gem.authors = ["James Adam"]
    # etc ...
  end
  Jeweler::GemcutterTasks.new
rescue LoadError
  puts "Jeweler not available...."
end
```

ok, that's not too bad, and even though it's wrapped stuff in the rescue block
It's also wrapping the gemspec in this Jeweler::Tasks thing, the 'gem' variable that it's yielding *is* an actual gemspec so you have complete control over what is going on there.

But then we take a look at the rake tasks it has added



and there's all this cruft about dependencies, and github releases, and version bumping, that I JUST. DON'T. NEED.

jeweler

- zeitgeisty
- tailored for github, apparently
- still provides tasks for bumping versions, publishing
- still provides a generator

it's just way too much. My focus has shifted from making my little bit of code available, to servicing the needs of this overly-capable swiss-army-knife tool.

And it occurs to me at this point that really what's going is

too opinionated

- don't need a tool to manage versions, websites, release notes, etc
- don't need a generator
- why so opaque?

these tools are too opinionated. They're not for building gems, they're all for **managing your development workflow**, from start to finish – from the first spark of the idea, to the blog post announcing your latest release.

And that's too much for me. What I need is

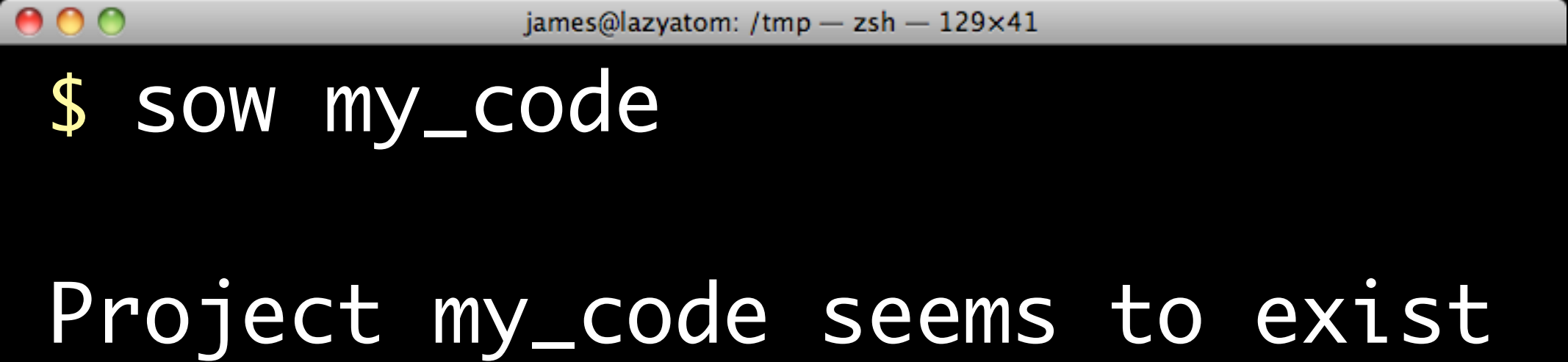
what I want

- turn existing code into a gem
- the fuck get out of my way

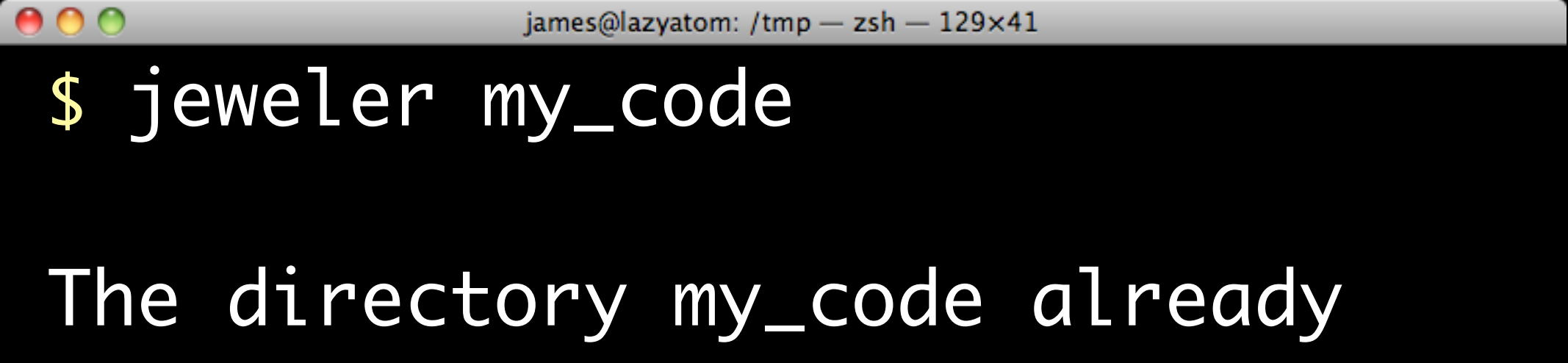
a tool that will turn some existing code I have into a gem

and then get the fuck out of my way.

And oh yeah, have you seen what happens if we try and apply any of these ‘gem’ tools to some code that you’ve already written?

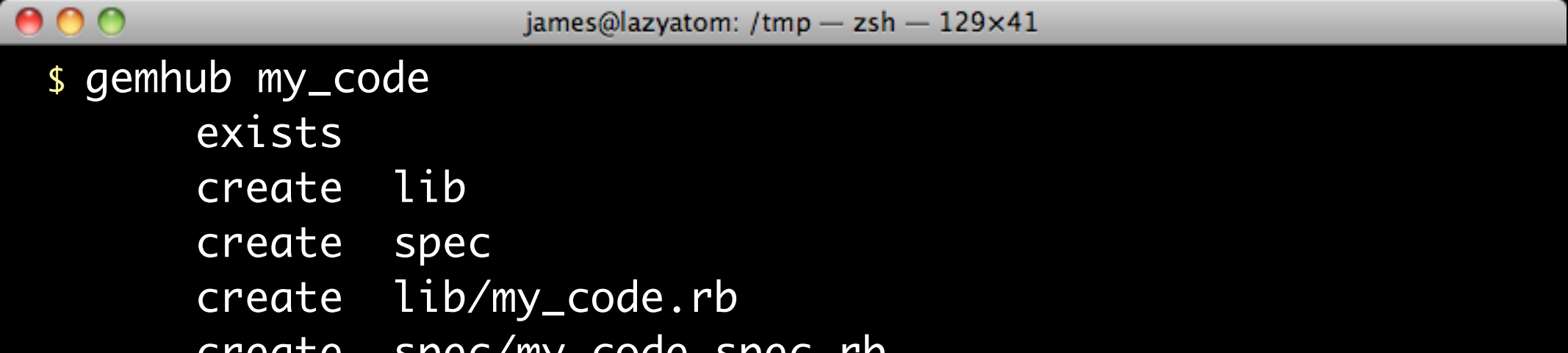


Here’s hoe (or sow - yes, it’s confusing), discovering that my code ‘already seems to exist’, as if it cannot contemplate such a thing was possible.



And jeweler, suggesting that ‘maybe I should move it out of the way’. **Maybe jeweler shouldn’t be so bloody passive aggressive!**

The only tool that comes even close is gemhub



but when it notices that I already have a Rakefile, it offers to either overwrite it, or not, or handily show me how wildly different my ideas for the Rakefile were compared to its own, for me to presumably memorise and retype later on?

sigh.

GEM THIS

This is why I wrote ‘gem-this’.

gem this

- produces a simple Rakefile
- builds your gem
- maybe does your docs
- release to rubyforge

it only deals with one file – the Rakefile – and as a result, it only has one dependency: Rake
The Rakefile it creates only does three things – builds gems, builds docs, and releases to rubyforge.
And in fact, now that gemcutter is the defacto host

gem this

- produces a simple Rakefile
- builds your gem
- maybe does your docs
- ~~release to rubyforge~~

It's unlikely that I'll keep that code in.

So how do you use it? There's no generator, since it presumes you are smart enough to have already set things up

So once you've created your project, and hacked away at it a bit, doing whatever (the fuck) you want, you just run the 'gem-this' command in the directory, and it will create a Rakefile for you.

gem this Rakefile

```ruby
# This builds the actual gem. For details of what
all these options mean, and other ones you can
add, check the documentation here:
#
#   http://rubygems.org/read/chapter/20
#
spec = Gem::Specification.new do |s|

  # Change these as appropriate
  s.name              = "existing_project"
  s.version           = "0.1.0"
  s.summary           = "What this thing does"
  s.author            = "James Adam"
  # etc...
```

At the top of this Rakefile is the raw Gem Spec, including comments explaining what each bit is for, and most importantly a link to more documentation so you can really figure things out.

gem this Rakefile

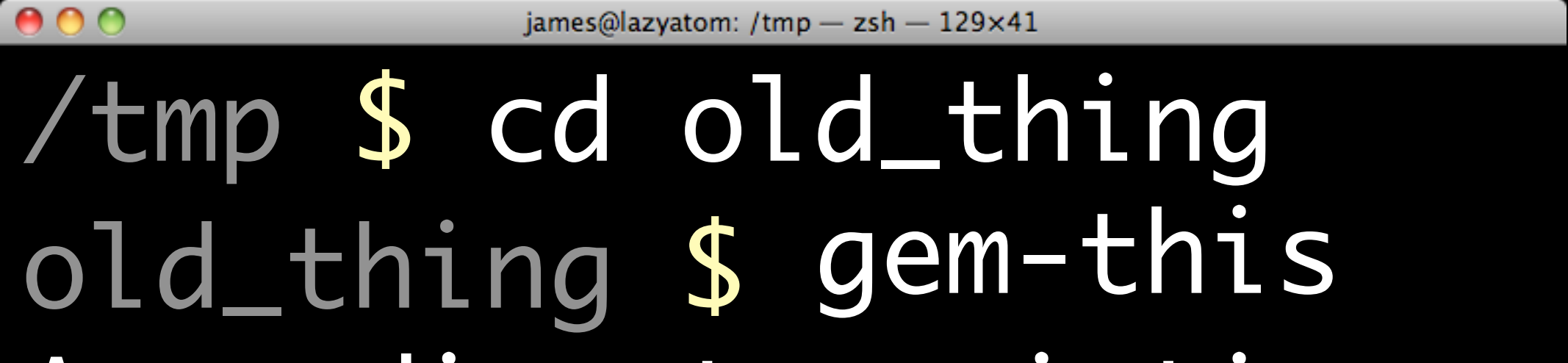
```ruby
# This task actually builds the gem.
Rake::GemPackageTask.new(spec) do |pkg|
  pkg.gem_spec = spec
end

# Generate documentation
Rake::RDocTask.new do |rd|
  rd.rdoc_files.include("lib/**/*.rb")
  rd.rdoc_dir = "rdoc"
end
```

Underneath is the actual task to create the gem, and the RDoc.

If you have a **bin** directory, it will hook that up. If you have a **test or a spec** directory, it will create tasks and dependencies in the case of rspec. If you've already got the project in **git**, it will ignore some files for you.

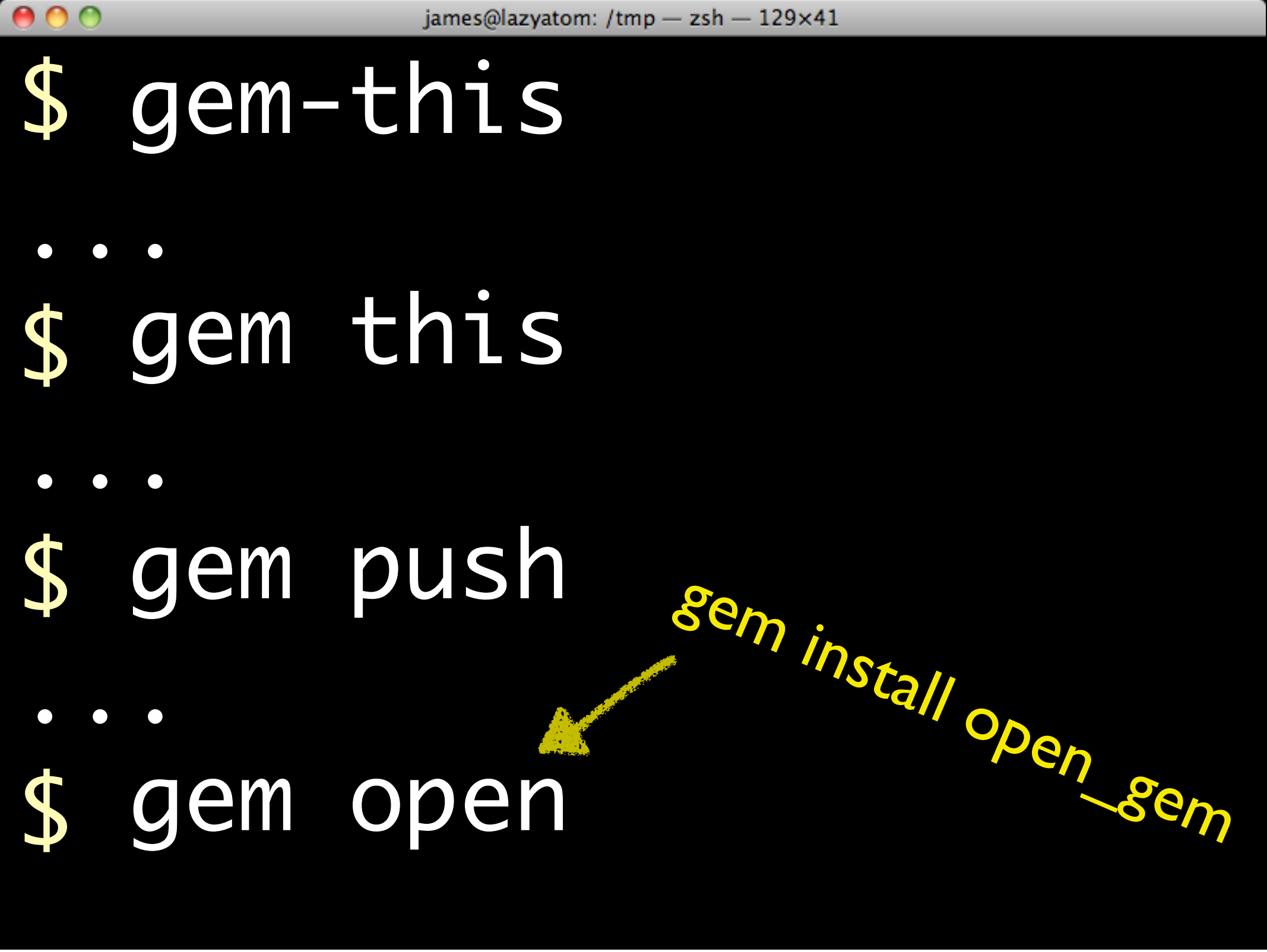
But what if you've already got a Rakefile with some rake tasks that you've been using while you were hacking?



so if you run ‘gem-this’ in a directory that already has a Rakefile, it will simply append everything it generates to the end of your file.

You can then move things around and edit them as you see fit.

Simple.



so I've been typing 'gem-this', but we can actually type 'gem this', **as if the 'this' command was a part of rubygems.**

This is a gem command, and it's how 'gem push' works for gemcutter, and 'gem open' works too (that's a handy tool by the way, check it out).

gem commands

These are examples of ‘gem commands’.

It’s really quite simple to add commands to rubygems.

the secret sauce

- subclass Gem::Command ...
- ... in a file called rubygems_plugin.rb ...
- ... and ensure it's in the $LOAD_PATH

All you need to do it create a subclass

... and ensure it's in the LOAD_PATH of your gem (typically that's the lib directory)

... and rubygems will find it.

my_gem/lib/rubygems_plugin.rb

```ruby
require 'rubygems/command_manager'
require 'rubygems/command'

class TestCommand < Gem::Command
  def initialize
  end

  def summary
  end

  def execute
  end
end
```

In the subclass we need to implement these three methods: initialize, summary and execute.

(As far as I can tell the name of the subclass needs to be in the form of <your name> Command, so i)

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my_gem/lib/rubygems_plugin.rb

```
class TestCommand < Gem::Command
  def initialize
    super 'name', 'short description', {:debug => false}
    add_option('-d', '--debug', 'guess!') do |d, options|
      options[:debug] = d
    end
  end

  # def summary
  # def execute
  end
```

in the initialize method, you should call super with the name of your command, a short description, and any default options.

You can then add additional options that will be picked up from the command line, in a way similar to opt-parse.

my_gem/lib/rubygems_plugin.rb

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my_gem/lib/rubygems_plugin.rb

```
class TestCommand < Gem::Command
  # def initialize

  def summary
    "What this command does..."
  end

  # def execute
end
```

the summary command is fairly self-explanatory - this just needs to be a string

my_gem/lib/rubygems_plugin.rb

```
class TestCommand < Gem::Command
  # def initialize

  # def summary

  def execute
    puts "You ran me with
                #{options.inspect}"
  end
end
```

and finally the execute command is where you kick off whatever your command actually does. In this method you have access to the options hash, which includes the arguments passed on the command line and any option flags that you've defined.

The last thing you need to do is register the command with Rubygems

my_gem/lib/rubygems_plugin.rb

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The last thing you need to do is register the command with Rubygems

my_gem/lib/rubygems_plugin.rb

```
# the command class
# ...

Gem::CommandManager.instance.
        register_command :test
```

This is simply a case of adding this line at the bottom of the rubygems_plugin file.

As an example, here's the gem command for gem-this

gem_this/lib/rubygems_plugin.rb

```ruby
%w(rubygems/command_manager rubygems/command
   gem_this).each { |lib| require lib }

class ThisCommand < Gem::Command
  def initialize
    super 'this', GemThis::SUMMARY, :debug => false
    add_option('-d', '--debug', GemThis::DEBUG_MESSAGE) do |d, options|
      options[:debug] = d
    end
  end

  def summary; GemThis::SUMMARY; end

  def execute
    GemThis.new(File.basename(Dir.pwd), options[:debug]).create_rakefile
  end
end

Gem::CommandManager.instance.register_command :this
```

Most of the logic is delegated into the ‘GemThis’ class, so it can be shared with the actual gem-this bin

FUCK YOUR CONVENTIONS

I promised someone I wrote include this slide, so here it is.

github.com/lazyatom/gem-this

gem install gem-this

Here's the github URL - thanks for listening!

james@lazyatom.com

github.com/lazyatom/gem-this

gem install gem-this

http://gofreerange.com

Here's the github URL - thanks for listening!