

The Anatomy of a Ruby Gem: Going From Zero to Sharing Code

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Indy.RB

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About Me...

- ~10 years of Ruby development
- Authored a couple gems that people actually use...
 - `has_config`
 - `active_reporting`
- Mario Kart is the best game series ever made; Don't @ me
- Github: t27duck

Obligatory "shout out to my day job"...



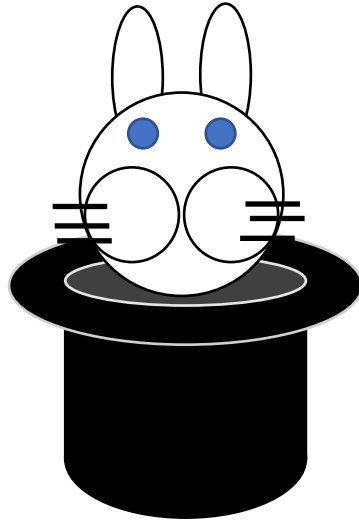
Goals

- What is a gem?
- Where do gems live?
- How is gem formed (and published)?

Couple Notes...

- Geared towards junior developers
- Giving high level overview
- Will get into some details, but nothing too deep
- Only going to show the “standard way” of doing things
- Some “hand waving” will be shown to move things along
- Not talking about gems with C extensions
- I am human and not an expert on all this “stuff”

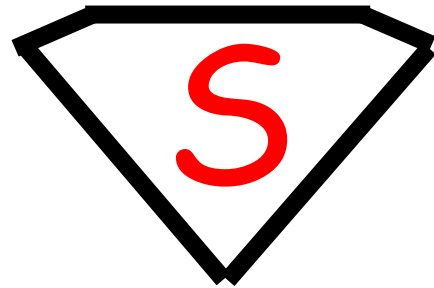
What my bosses
think I do...



```
01010011 01110101
01110000 01100101
01110010 00100000
01001101 01100001
01110010 01101001
01101111 00100000
01010111 01101111
01110010 01101100
01100100 00100001
```

What my co-workers
think I do...

What I think I'm
doing...



"Superman logo"

```
>> require "rack"
=> true
```

What I'm actually
doing...

How Do Gems Get to Your Projects...

```
$ gem install awesome_print
... magic happens here ...
Successfully uninstalled
awesome_print-1.8.0
1 gem installed
```

```
$ irb
>> require "awesome_print"
=> true
```

```
Gemfile:
  gem "awesome_print"
```

```
$ bundle
... Gem is installed ...
```

```
$ bundle exec my_app.rb
```

```
Awesome print is
"just there"
```

\$ gem install -V awesome_print

```
HEAD https://api.rubygems.org/api/v1/dependencies
200 OK

GET https://api.rubygems.org/api/v1/dependencies?gems=awesome_print
200 OK

Getting SRV record failed: DNS result has no information for _rubygems._tcp.api.rubygems.org

Downloading gem awesome_print-1.8.0.gem
GET https://api.rubygems.org/gems/awesome_print-1.8.0.gem
Fetching: awesome_print-1.8.0.gem (100%)
200 OK
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/.gitignore
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/Appraisals
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/CHANGELOG.md
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/CONTRIBUTING.md
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/Gemfile
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/Gemfile.lock
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/LICENSE
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/README.md
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/Rakefile
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/ap.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/colorize.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/awesome_method_array.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/class.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/kernel.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/logger.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/method.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/object.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/string.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/custom_defaults.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/action_view.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/active_record.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/active_support.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/mongo_mapper.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/mongoid.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/nobrainier.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/nokogiri.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/ostruct.rb
```

```
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/ripple.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/ext/sequel.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/array_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/base_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/class_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/dir_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/file_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/hash_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/method_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/object_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/simple_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/formatters/struct_formatter.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/indentator.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/inspector.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/version.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/active_record_helper.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/colors_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/core_ext/logger_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/core_ext/string_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/action_view_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/active_record_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/active_support_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/mongo_mapper_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/mongoid_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/nobrainier_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/nokogiri_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/ostruct_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/ripple_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/formats_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/methods_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/misc_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/objects_spec.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/spec_helper.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/3_2_diana.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/3_2_diana_legacy.txt
```

That’s.... A lot of stuff...

```
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/3_2_multi.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/3_2_multi_legacy.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_0_diana.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_0_multi.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_1_diana.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_1_multi.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_2_diana.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_2_diana_legacy.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_2_multi.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/4_2_multi_legacy.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/5_0_diana.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/active_record_data/5_0_multi.txt
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/ext_verifier.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/mongoid_versions.rb
$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/support/rails_versions.rb
Successfully installed awesome_print-1.8.0
1 gem installed
```

\$ gem install -V awesome_print

Fetching data from rubygems.org API

- Dependency list
- Pull down .gem file
- Expand .gem file

Regular, everyday Ruby files

Spec / Test Ruby files

GET https://api.rubygems.org/gems/awesome_print-1.8.0.gem

Fetching: **awesome_print-1.8.0.gem** (100%)

200 OK

... Files start listing here...

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/LICENSE

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/README.md

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/Rakefile

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/colorize.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/awesome_method_array.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/core_ext/class.rb

... More files here...

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/indentator.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/inspector.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/lib/awesome_print/version.rb

.... More files here...

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/active_record_helper.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/colors_spec.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/core_ext/logger_spec.rb

\$PATH_TO_RUBY/gems/2.5.0/gems/awesome_print-1.8.0/spec/ext/active_record_spec.rb

... More files here...

Successfully installed awesome_print-1.8.0

1 gem installed

Spoiler: Gems are Just Ruby Code*

- Nothing “magical” about them
- Loaded like Ruby code
- Parsed like Ruby code
- Executed like Ruby code
- Downloaded as a single file (.gem)... but that’s just a zip file

* Sometimes there’s some C and JAVA files mixed in, but it’s typically mostly Ruby

Where Do Gems Live?

\$ ls ~/.rbenv/versions/2.5.1/lib/ruby/gems/2.5.0/gems

activemodel-5.2.1

activerecord-5.2.1

activesupport-5.2.1

acts_as_list-0.9.11

acts_as_list-0.9.12

acts_as_list-0.9.16

addressable-2.5.2

archive-zip-0.11.0

arel-9.0.0

ast-2.4.0

awesome_print-1.8.0

bb-ruby-1.4.0

bcrypt-3.1.12

...

brakeman-4.3.1

buftok-0.2.0

bugsnag-6.7.1

bugsnag-6.7.3

bugsnag-6.8.0

builder-3.2.3

bundler-1.16.5

byebug-10.0.2

capybara-3.6.0

carrierwave-1.2.3

childprocess-0.9.0

chromedriver-helper-1.2.0

chronic-0.10.2

...

connection_pool-2.2.2

crass-1.0.4

dalli-2.7.8

devise-4.5.0

diff-lcs-1.3

docile-1.1.5

faker-1.9.1

faraday-0.14.0

faraday-0.15.1

faraday-0.15.2

feedjira-2.1.4

ffi-1.9.23

gravatar_image_tag-1.2.0

...

http-3.3.0

http-form_data-2.1.1

i18n-0.9.3

i18n-1.0.1

i18n-1.1.0

io-like-0.3.0

jbuilder-2.7.0

mini_magick-4.8.0

mini_mime-1.0.1

mini_portile2-2.3.0

minitest-5.10.3

puma-3.12.0

rack-2.0.3

...

Loading a Gem in Your Program

Requiring loads the most recent version with its dependencies


```
$ irb
```

```
>> require "rubygems"  
=> false
```

```
>> require "i18n"  
=> true
```

```
>> I18n::VERSION  
=> "1.1.0"
```

No longer needed on modern-day Rubies



Use the gem method to load specific versions. Bundler does this for you!

```
$ irb
```

```
>> gem "i18n", "0.9.3"  
=> true
```

```
>> require "i18n"  
=> true
```

```
>> I18n::VERSION  
=> "0.9.3"
```

NEVER ACTUALLY DO THIS!
(This is what bundler is for)



What Makes A Gem?

- gemspec file
- Addition to `$LOAD_PATH` (Handled by rubygems)
- Activation of the gem (Handled by rubygems + bundler)
- A well-placed “require” (Usually done for you by bundler)

The gemspec

- A file that describes the gem
 - Name
 - Description
 - Dependencies
 - Version
- Convention: Named the same as the gem
 - `mygem.gemspec`
- Actually a file with Ruby code

```
lib = File.expand_path("../lib", __FILE__)
$LOAD_PATH.unshift(lib) unless $LOAD_PATH.include?(lib)
require "mygem/version"

Gem::Specification.new do |spec|
  spec.name          = "mygem"
  spec.version       = Mygem::VERSION
  spec.authors       = ["Name"]
  spec.email         = ["you@email.biz"]

  spec.summary       = "A short summary"
  spec.description   = "A longer summary"
  spec.homepage      = "https://github.com/you/repo"
  spec.license       = "MIT"

  spec.files = Dir.chdir(File.expand_path("../", __FILE__)) do
    `git ls-files -z`.split("\x0").reject { |f| f.match(%r{^(test|spec|features)/}) }
  end
  spec.bindir        = "exe"
  spec.executables   = spec.files.grep(%r{^exe/}) { |f| File.basename(f) }
  spec.require_paths = ["lib"]

  spec.add_runtime_dependency "pg", ">= 0.19.0"
  spec.add_development_dependency "rake", "~> 10.0"
end
```

Making the Version Number Available

```
lib = File.expand_path("../lib", __FILE__)  
$LOAD_PATH.unshift(lib) unless $LOAD_PATH.include?(lib)  
require "mygem/version"
```

- Technically an anti-pattern
- No "real" reason to change \$LOAD_PATH manually
- A require_relative should be able to accomplish the same
- Pattern allows us to have version in one spot
 - Set in the gemspec
 - Available in code (Mygem::VERSION)

Describe Your Gem (to Humans)

```
Gem::Specification.new do |spec|  
  spec.name           = "mygem"  
  spec.version        = Mygem::VERSION  
  spec.authors        = ["Name"]  
  spec.email          = ["you@email.biz"]  
  
  spec.summary        = "A short summary"  
  spec.description    = "A longer summary"  
  spec.homepage       = "https://github.com/you/repo"  
  spec.license        = "MIT"
```

- Meta information that goes on RubyGems.org
- Pulls in and sets version from the “hack” before

Describe Your Gem (to Computers)

Files to include when the gem is build

Where
executables
live

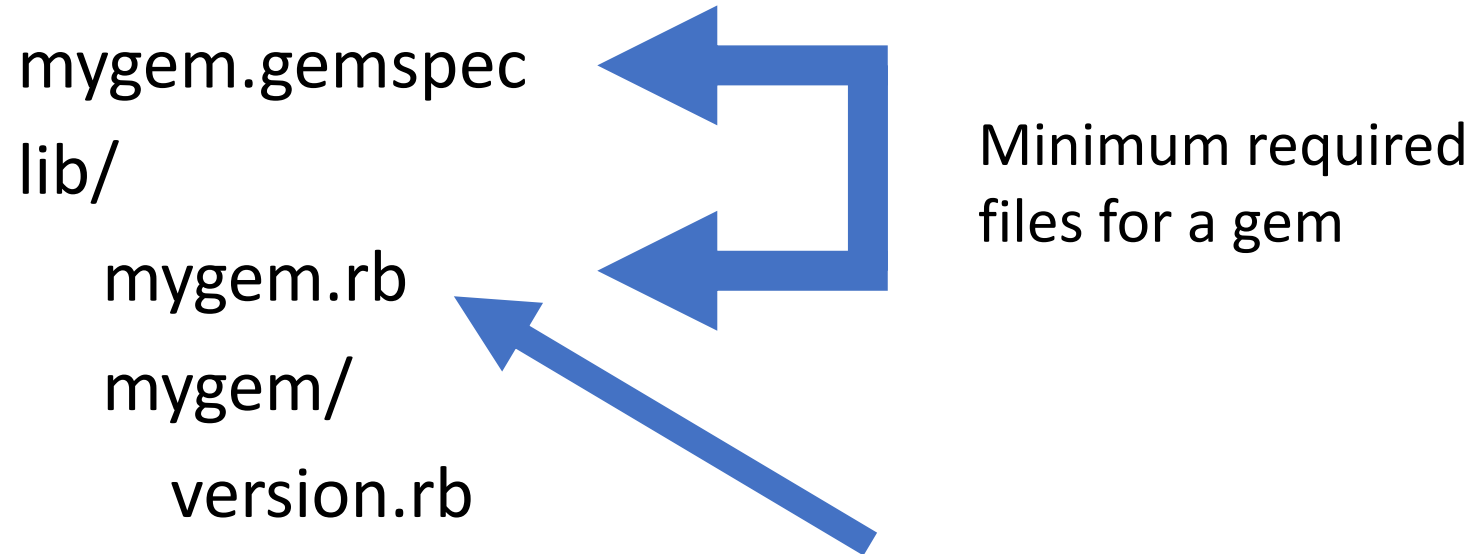
Directories
appended to
\$LOAD_PATH

Dependencies

```
spec.files = Dir.chdir(File.expand_path("../", __FILE__)) do
  `git ls-files -z`.split("\x0").reject do |f|
    f.match(%r{^(test|spec|features)/})
  end
end
spec.bindir      = "exe"
spec.executables = spec.files.grep(%r{^exe/}) do |f|
  File.basename(f)
end
spec.require_paths = ["lib"]

spec.add_runtime_dependency "pg", ">= 0.19.0"
spec.add_development_dependency "rake", "~> 10.0"
end
```

gemspec + lib + "entry file" = gem



```
module MyGem
  # Your code goes here!
end
```

- Primary bootstrapping point of the gem
- This is what's "required" after the gem is activated
- Require other files to support the gem

Let's See a "Real" Gem...

- Rb21 – Ruby “implementation” of the 21 card game (Blackjack)
- Minimal implementation
 - Card
 - Has a value and suite
 - Deck
 - Holds cards, shuffles, deals
 - Hand
 - Holds cards in play, adds cards, counts cards, determines bust or blackjack
- No splitting, no doubling, no betting
- Ruby 2.5.1 ... Bundler: 1.16.5

```
$ bundle gem rb21
```

```
Creating gem 'rb21'...
```

```
Do you want to generate tests with your gem?
```

```
Type 'rspec' or 'minitest' to generate those test files now and in the future.
```

```
rspec/minitest/(none): rspec
```

```
Do you want to license your code permissively under the MIT license?
```

```
This means that any other developer or company will be legally allowed to use your  
code for free as long as they admit you created it. You can read more about the MIT  
license at https://choosealicense.com/licenses/mit. y/(n): y
```

```
MIT License enabled in config
```

```
Codes of conduct can increase contributions to your project by contributors who  
prefer collaborative, safe... snip ... For suggestions about how to enforce codes  
of conduct, see https://bit.ly/coc-enforcement. y/(n): y
```

```
Code of conduct enabled in config
```

```
... Files created ...
```

```
Initializing git repo in /path/to/work_area/rb21
```

```
Gem 'rb21' was successfully created.
```

```
$ ls rb21/
```

Gemfile

lib/rb21.rb

lib/rb21/version.rb

rb21.gemspec

Rakefile

README.md

bin/console

bin/setup

.gitignore

.travis.yml

.rspec

spec/spec_helper.rb

spec/rb21_spec.rb

LICENSE.txt

CODE_OF_CONDUCT.md

Rakefile

```
$ rake -T
```

```
rake build      # Build rb21-0.1.0.gem into the pkg directory
```

```
rake install    # Build and install rb21-0.1.0.gem into system gems
```

```
rake release    # Create tag v0.1.0, build, and push to rubygems.org
```

```
rake spec       # Run RSpec code examples
```

Let's Build Stuff (lib/)

lib/rb21/deck.rb

```
module Rb21
  class Card
    SUITS = %w[Clubs Diamonds Hearts Spades].freeze
    FACES = %w[Jack Queen King].freeze
    NORMALS = (2..9).map(&:to_s).freeze
    ACE = "Ace"
    TEN_VALUES = (["10"] + FACES).freeze
    ALL_NAMES = (TEN_VALUES + NORMALS + [ACE]).freeze
    attr_reader :name, :suit

    def initialize(name, suit)
      # ...
    end

    def value
      # ...
    end
  end
end
```

lib/rb21/deck.rb

```
module Rb21
  class Deck
    attr_reader :cards

    def initialize
      # ...
    end

    def draw
      # ...
    end

    def empty?
      # ...
    end

    def reshuffle
      # ...
    end
  end
end
```

Let's Build Stuff (lib/)

lib/rb21/version.rb

```
module Rb21
  VERSION = "0.1.0"
end
```

lib/rb21.rb

```
require "rb21/version"
require "rb21/card"
require "rb21/deck"
require "rb21/hand"

module Rb21
  # Your code goes here...
end
```

lib/rb21/hand.rb

```
module Rb21
  class Hand
    LIMIT = 21
    attr_reader :cards

    def receive(card)
      # ...
    end

    def value
      # ...
    end

    def busted?
      # ...
    end

    def blackjack?
      # ...
    end
  end
end
```


Let's Test Stuff (spec/)

```
$ rake spec
```

```
Rb21::Card
```

```
  has a name
  requires a valid name
  requires a valid suit
  has a suite
  has a value equal to normal values
  has a value for ten for 10s, jacks, queens, and kings
  has a value of 1 or 11 for aces
```

```
Rb21::Deck
```

```
  builds a deck of cards
  builds the correct number of cards
  draws and returns a Card
  raises an exception if you try to draw a card and no
more are left
  is empty is there are no more drawable cards
  is not empty is there is at least one drawable card
  shuffles an empty deck to allow more drawing
  prevents reshuffling a non-empty deck
```

```
Rb21::Hand
```

```
  has a no cards by default
  can hold cards that it receives
  can clear its held cards
  #value
    is 0 without any cards
    has the value of the card given
    adds up the values of the cards given
    is allowed to go over the limit
    is a blackjack if an ace and a ten value
card are the only things in the hand
    is busted if value is over the limit
    with ace in place
      does not go over 21 if there are two or
more aces
      takes the lower value of the ace if total
goes over 21
```

```
Finished in 0.017 seconds (files took 0.49226
seconds to load)
```

```
26 examples, 0 failures
```

Let's ... Run Stuff? (bin/)

```
$ bin/console
```

```
>> d = Rb21::Deck.new
```

```
=> #<Rb21::Deck:0x00007fa5628d1260 @cards=[...], @discarded=[]>
```

```
>> d.cards.first
```

```
=> #<Rb21::Card:0x00007fa5628d0ab8 @name="10", @suit="Hearts">
```

Let's Publish a Gem!

```
$ rake release
```

```
rb21 0.1.0 built to pkg/rb21-0.1.0.gem.
```

```
Tagged v0.1.0.
```

```
Pushed git commits and tags.
```

```
rake aborted!
```

```
Your rubygems.org credentials aren't set. Run `gem  
push` to set them.
```

```
Tasks: TOP => release => release:rubygem_push
```

```
(See full trace by running task with --trace)
```

Let's Publish a Gem!

```
$ gem push
```

```
Enter your RubyGems.org credentials.
```

```
Don't have an account yet? Create one at  
https://rubygems.org/sign\_up
```

```
    Email:    t27duck@gmail.com
```

```
Password:    *****
```

```
Signed in.
```

```
ERROR:  While executing gem ... (Gem::CommandLineError)
```

```
    Please specify a gem name on the command line (e.g.  
gem build GEMNAME)
```

Let's Publish a Gem!

```
$ rake release
```

```
rb21 0.1.0 built to pkg/rb21-0.1.0.gem.
```

```
Tag v0.1.0 has already been created.
```

```
Pushed rb21 0.1.0 to rubygems.org
```

https://rubygems.org/gems/rb21

rb21 *0.1.0*

An example gem that can serve as a base for making a blackjack game in Ruby

VERSIONS:

0.1.0 - October 04, 2018 (10 KB)

DEVELOPMENT DEPENDENCIES (3):

bundler ~> 1.16

rake ~> 10.0

rspec ~> 3.0

AUTHORS:

Tony Drake

OWNERS:



SHA 256 CHECKSUM:

ca0e9cb9337c4ab6ad11f4894bc57f6083986bb66543c53553219d10b62dbe0c



TOTAL DOWNLOADS

0

FOR THIS VERSION

0

GEMFILE:

```
gem 'rb21', '-> 0.1.0'
```

INSTALL:

```
gem install rb21
```

LICENSE:

MIT

REQUIRED RUBY VERSION:

>= 0

LINKS:

[Homepage](#)

[Documentation](#)

That's Pretty Much It...

- Gems are just Ruby code
- Gemspec describes the gem
- The lib directory is the meat of the gem
 - Entry point of the same name
 - Loads up other supporting files
- Use bundler to build the scaffolding for new gems

The End!

- Slides: github.com/t27duck/showandtell
- Twitter: [@t27duck](https://twitter.com/t27duck)
- Rb21 Gem: github.com/t27duck/rb21
- Go out there and make gems... and you too can pretend you're "magical" to your co-workers!