May the Source Be with You

Learning Ruby by Reading Ruby Source Code

Chimpr

12年12月8日星期六

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I'm a Flash guy

≈ 8 years

also a Ruby guy

CERTIFIED
RUBY PROGRAMMER
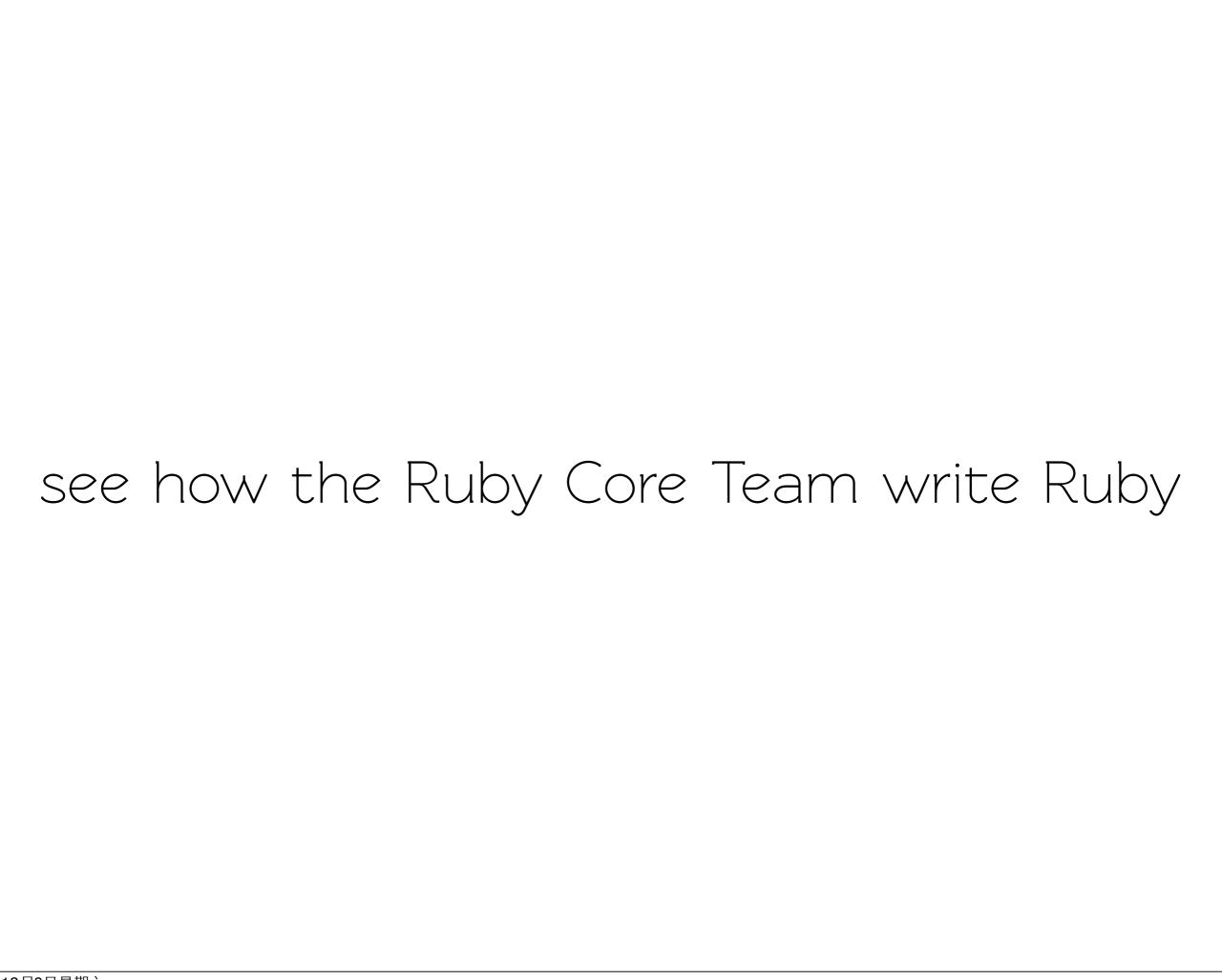
≈ 4 years

but not a C guy, yet!

Ruby > Rails

share Ruby learning experiences in OpenFoundry and some developer party.
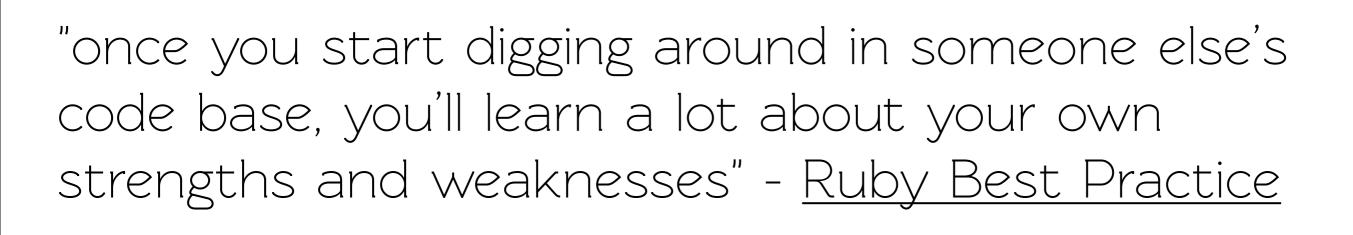
a SHOW-OFF person!

Learning Ruby
by Reading Ruby Source Code

- why read source code?
- how to start?
- anything interesting?
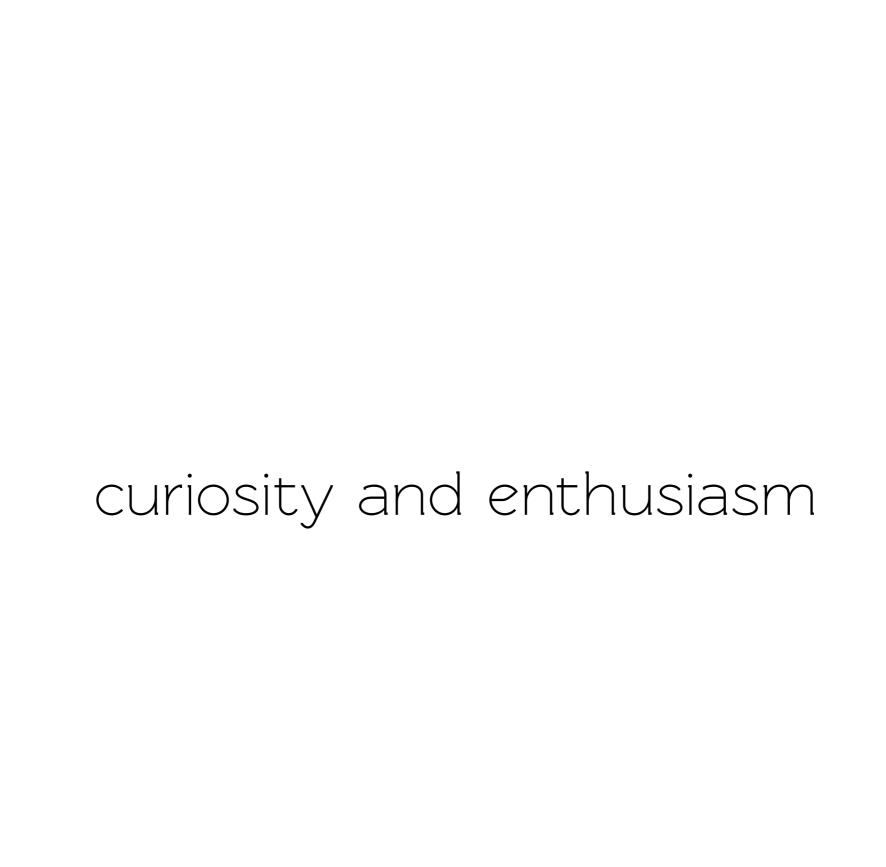- write a simple Ruby Extension with C.

Why read source code?

see how the Ruby Core Team write Ruby

fun :)

"once you start digging around in someone else's code base, you'll learn a lot about your own strengths and weaknesses" - <u>Ruby Best Practice</u>

pre-requirement?

C language

curiosity and enthusiasm

What if I don't have any skill of C?

Just learn it :)

How to Start?

get Ruby source code

download from **Ruby website**:
http://www.ruby-lang.org/en/

or from **github**:
https://github.com/ruby/ruby

Ruby Source Code:
- *.c + *.h
- *.rb (Stdlib)

Tools
- Vim

Ruby 1.9.2 p290

Quick Browsing.. :)

what's a Ruby object?

start from basic structure, like Object, Class, String, Array, Hash, Basic...

Object = RObject,
Class = RClass,
String = RString,
Array = RArray,
Hash = RHash,
Basic = RBasic

"ruby.h"

"object.c"

Init_XXXX

class.c#350-354
all Class's class is Class!

class.c#556
rb_define_module()

class.c#1170

`rb_define_method()`

Object.c#2556~2560
```
Integer(), Float(), String(), Array() are all
global methods
```

rb_define_global_function()

= rb_define_module_method on kernel

= rb_define_private_method on kernel +
  rb_define_singleton_method on kernel

"new"

```ruby
class A
  def initialize
    puts "hello"
  end
end

a = A.new
```

```
new ->
  rb_class_new_instance ->
    rb_obj_alloc ->
      rb_obj_call_init
```

to_s v.s to_str

String.c#7488

```
rb_define_method(rb_cString, "to_s", rb_str_to_s, 0);
rb_define_method(rb_cString, "to_str", rb_str_to_s, 0);
```

Array.c#4504
```
rb_define_alias(rb_cArray, "to_s", "inspect");
but no `to_str`
```

```
how to execute a Proc?
- proc.call
- proc[]
- proc === 123
- proc.yield
```

object.c#2592
- attr
- attr_reader
- attr_writer
- attr_accessor

push v.s <<

```
VALUE
rb_ary_push(VALUE ary, VALUE item){
  rb_ary_modify(ary);
  return rb_ary_push_1(ary, item);
}
```

```
static VALUE
rb_ary_push_m(int argc, VALUE *argv, VALUE
ary) {
  rb_ary_modify(ary);
  while (argc--) {
    rb_ary_push_1(ary, *argv++);
  }
  return ary;
}
```

gc.c#3214-3215
Object's ID

gc.c#2865-2867

How Symbol works?

```ruby
people = {
  "Eddie" => ["green", "eddie@digik.com.tw"],
  "Joanne" => ["yellow", "hello@yahoo.com"]
}

people.map { |name, (color, email)|
  puts [name, email]
}
```

```
people = {
  "Eddie" => ["green", "eddie@digik.com.tw"],
  "Joanne" => ["yellow", "hello@yahoo.com"]
}

people.map { |name, (_, email)|
  puts [name, email]
}
```

parse.y#8277-8299 shadowing_lvar_gen()

vm_eval.c#224
method_missing

interesting naming :)

ext/ripper/ripper.c#15890
rb_intern, rb_intern2, rb_intern3

array.c#325
```
rb_ary_new, rb_ary_new2, ary_new,
rb_ary_new3, rb_ary_new4
```

Simple Ruby Extension from Scratch

Conclusion

from basic structure

and don't be afraid

References

Rubyソースコード完全解説
by 青木峰郎

http://i.loveruby.net/ja/rhg/book/

Ruby Under a Microscope
by Pat Shaughnessy

http://patshaughnessy.net/ruby-under-a-microscope

still not finish..

12年12月8日星期六

Hope can become a Jedi Master someday :)

おわり

thank you all :)

any question?

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photo by Eddie