Let’s Learn Ruby - Basic
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http://blog.eddie.com.tw/
Taipei, Taiwan · http://www.eddie.com.tw/
Ruby Tuesday

https://www.facebook.com/groups/142197385837507/

photo by othree
Rails Girls Taipei

https://www.facebook.com/railsgirllstw
WebConf Taiwan 2014
750+ attendees
all tickets sold out in 4 mins
What I want?
Problem Solving
Active Ecosystem
## Let's Learn Ruby

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<th>Change</th>
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<td>C++</td>
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<tr>
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<tr>
<td>C#</td>
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</tbody>
</table>

open source projects on Github
History
まつもと ゆきひろ (Matz)
Let's Learn Ruby
first released at 1995
2.0 released at 2013
2.1 released at 2013.12
Why Ruby?
free, open source, easy to learn
Ruby != Rails
Happy, and Fun
Rubies

CRuby(MRI), REE, mRuby, MacRuby, JRuby, IronRuby, Rubinius..etc
Version
1.8, 1.9, 2.0, 2.1
Ruby 1.8 has no future
RVM
Ruby Version Manager

https://rvm.io/
Editors
Vim, Emacs, Sublime Text... etc
coding style

https://github.com/styleguide/ruby
But Ruby is Slow..?
What can Ruby do?
Rake
Make, but Ruby version.

Rack http://rake.rubyforge.org/
Rack
it’s a specification (and implementation) of a minimal abstract Ruby API that models HTTP. such as Sinatra, Ruby on Rails

Rack http://rack.rubyforge.org/
Sinatra http://www.sinatrarb.com
Ruby on Rails http://rubyonrails.org/
developing MacOS and iOS app
drawing, image processing, music..
Install Ruby now!
Let's Learn Ruby

Got 15 minutes? Give Ruby a shot right now!

Ruby is a programming language from Japan (available at ruby-lang.org) which is revolutionizing the web. The beauty of Ruby is found in its balance between simplicity and power.

Try out Ruby code in the prompt on the right. In addition to Ruby’s built-in methods, the following commands are available:

- **help** → Start the 15 minute interactive tutorial. Trust me, it’s very basic!
- **clear** → Clear screen. Useful if your browser is slowing down. Your command history is remembered.

http://tryruby.org
Interactive Ruby, irb
Gem
gem install PACKAGE_NAME
gem env
gem list
Variables and Constants
local variable
variable
global variable
$variable
instance variable
@variable
class variable
@@@variable
virtual variable
true, false, self, nil
variable assignment

a = 1

x, y, z = 1, 2, 3
Constant
begins with a capital letter,
and it can be changed
Reserved word and Keyword
# Let's Learn Ruby

<table>
<thead>
<tr>
<th>begin</th>
<th>end</th>
<th>alias</th>
<th>and</th>
<th>begin</th>
<th>BEGIN</th>
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</thead>
<tbody>
<tr>
<td>break</td>
<td>case</td>
<td>class</td>
<td>def</td>
<td>defined?</td>
<td>do</td>
</tr>
<tr>
<td>else</td>
<td>elsif</td>
<td>END</td>
<td>end</td>
<td>ensure</td>
<td>false</td>
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<tr>
<td>for</td>
<td>if</td>
<td>in</td>
<td>module</td>
<td>next</td>
<td>nil</td>
</tr>
<tr>
<td>not</td>
<td>or</td>
<td>redo</td>
<td>rescue</td>
<td>retry</td>
<td>return</td>
</tr>
<tr>
<td>self</td>
<td>super</td>
<td>then</td>
<td>true</td>
<td>undef</td>
<td>unless</td>
</tr>
<tr>
<td>until</td>
<td>when</td>
<td>while</td>
<td>yield</td>
<td></td>
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</tr>
</tbody>
</table>
Logic and Flow Control
only false and nil are false
true v.s TrueClass
false v.s FalseClass
nil v.s NilClass
if..elsif..end
unless = not if
if modifier
case .. when..

BEGIN{} and END{]
a = true ? 'a' : 'b'
a ||= 'a'
Comment
# single line
Comment
=end
Loop and Iteration
for.. in..
Let's Learn Ruby

while .. end
until .. end
until = not while
times
upto, downto
each, each_with_index
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Integer

http://www.ruby-doc.org/core-2.1.0/Integer.html
Fixnum and Bignum
10 / 3
String

http://ruby-doc.org/core-2.1.0/String.html
single and double quotes
%q v.s %Q
"%s" % "eddie"
string interpolation
Exercise
please calculate how many “characters” and “words” of a section of a random article with Ruby.
Exercise
please convert string “abcdefg” to “gfedcba” without using String#reverse method.
Let’s Learn Ruby

Array

http://ruby-doc.org/core-2.1.0/Array.html
Array.new v.s []
Let's Learn Ruby

%w
Exercise

please sort a given array [1, 3, 4, 1, 7, nil, 7], and remove nil and duplicate number.
Exercise

please covert a given array [1, 2, 3, 4, 5] to [1, 3, 5, 7, 9] with Array#map method.
Exercise
please draw 5 unique random number between 1 to 52.
Hash

http://ruby-doc.org/core-2.1.0/Hash.html
Hash.new v.s {}
a = { :name => 'eddie' }
a = { name: 'eddie' }
(1..10) v.s (1...10)
Exercise
please calculate the sum from 1 to 100 with Range.
Methods
def method_name(param)
...
end
parentheses can be omitted
? and !
return value
Singleton Method
class Cat
  def walk
    puts "I'm walking"
  end
end

cat = Cat.new

def cat.fly
  puts "I can fly"
end

cat.fly
Method Missing
def method_missing(method_name)
  puts "method: #{method_name} is called!"
end

something_not_exists()
Exception Handling
begin .. rescue.. else.. ensure.. end
def open_my_file(file_name)
  File.open file_name do |f|
    puts f.read
  end
end

begin
  open_my_file("block_demo.r")
rescue => e
  puts e
else
  puts "it's working good!"
ensure
  puts "this must be executed, no matter what"
end
Block
Proc
my_square = Proc.new { | x | x ** 2 }

# how to call a proc
puts my_square.call(10)    # 100
puts my_square[10]         # 100
puts my_square.(10)        # 100
puts my_square === 10      # 100
lambda, ->
Let's Learn Ruby

```ruby
my_lambda = lambda { |x| x ** 2 }

# new style in 1.9
my_lambda = -> x { x ** 2 }

# how to call a lambda?
puts my_lambda.call(10)  # 100
puts my_lambda[10]       # 100
puts my_lambda.__(10)    # 100
puts my_lambda === 10    # 100
```
Proc v.s lambda
def proc_test
  puts "hello"
  my_proc = Proc.new { return 1 }
  my_proc.call
  puts "ruby"
end

def lambda_test
  puts "hello"
  my_lambda = lambda { return 1 }
  my_lambda.call
  puts "ruby"
end
{} v.s do..end

http://blog.eddie.com.tw/2011/06/03/do-end-vs-braces/
Yield
Object-Oriented Programming
everything in Ruby is an Object
object = state + behavior
root class = Object
root class would be BasicObject in Ruby 1.9
class ClassName < ParentClass
...
end
Naming Convention
initialize
ClassName.new
self = current object
instance and class variable
instance and class method
Exercise
please create a Dog class and Cat class, which are both inherited from Animal class, and implement “walk” and “eat” methods.
public, protected and private method
getter and setter
attr_reader, attr_writer and attr_accessor
Open Class
Module
module ModuleName
...
end
module has no inheritance
module has no instance
Naming Convention
require v.s load
Priority?
Exercise
please create a Bird class, which is also inherited from Animal class, but include a Fly module.
Mixin
Ruby is single inheritance
Duck Typing
include v.s extend
Bundle
Gemfile
Let's Learn Ruby

RubyGems.org
your community gem host

2,480,592,613 downloads
of 68,198 gems cut since July 2009

Welcome to your community RubyGem host.
Find your gems easier, publish them faster, and have fun doing it.

LEARN

Install RubyGems 2.1.11
Ruby's premier packaging system

Browse the Guides
In depth explanations, tutorials, and references

Gem Specification
Your gem's interface to the world

SHARE

gem update --system
Update to the latest RubyGems version

gem build foo.gemspec
Build your gem

gem push foo-1.0.0.gem
Deploy your gem instantly

RubyGems.org is the Ruby community gem host. Use the API to interact and find information. Publish your gems and install them. Become a contributor and enhance the site with your own changes.

http://rubygems.org/
Let's Learn Ruby

gem "nokogiri", :git => "git://github.com/tenderlove/nokogiri.git"
gem "secret_gem", :path => "~/my_secret_path"
bundle install
pack your own gem!
1. bundle gem NEW_NAME
2. gem build NEW_NAME.gemspec
3. gem push NEW_NAME.gem

http://guides.rubygems.org/make-your-own-gem/
Exercise
please try to create a Gem spec with bundle command, modify, build and push to rubygems.org.
Rake
desc "mail sender"
task :sendmail do
  puts "grap mailing list from database..."
  sleep 3
  puts "mail sending..."
  sleep 3
  puts "done!"
end
task :goto_toliet do
  puts "goto toliet"
end

task :open_the_door => :goto_toliet do
  puts "open door"
end
TDD
require "minitest/autorun"

class TestMyBMI < MiniTest::Unit::TestCase
  def test_my_calc_bmi_is_ok
    assert_equal calc_bmi(175, 80), 26.12
  end
end

def calc_bmi(height, weight)
  bmi = ( weight / (height/100.0) ** 2 ).round(2)
end
require "minitest/autorun"

describe "test my bmi calculator" do
  it "should calc the correct bmi" do
    calc_bmi(175, 80).must_equal 26.12
  end
end

def calc_bmi(height, weight)
  bmi = (weight / (height/100.0) ** 2 ).round(2)
end
Ruby Koans
Ruby Object Model
At last..
pick up one scripting language
Ruby 是...

一個簡易且充滿生產力的開放原碼動態程式設計語言．高雅的語法，得以自然的閱讀與易於撰寫．

Ruby 2.1.0-rc1 發佈了
很高興告訴大家 Ruby 2.1.0-rc1 發佈了。請在 2013 年 12 月 25 日最終發行版釋出前，試試 Ruby 2.1 的新特色！

深入閱讀...
由 zzak 發表於 2013-12-20

# Output "I love Ruby"
say = "I love Ruby"
puts say

# Output "I *LOVE* RUBY"
say["love"] = "*love*"
puts say.upcase

# Output "I *love* Ruby"
# five times
5.times { puts say }

https://www.ruby-lang.org/zh_tw/
Ruby is fun!
The only limitation is your imagination.
## Contacts

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<th>Website</th>
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Photo by Eddie