Mad Science: Polyglot Bridges

RubyNation 2015

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polyglot

/ˈpæləˌglat/

adjective

1. knowing or using several languages.
   "a polyglot career woman"

noun

1. a person who knows and is able to use several languages.
"or using" ... hmmm
Javascript
Opal
CoffeeScript
ClojureScript
Libraries
Languages!
Use case: graph some stuff from Perl6/Rakudo
> sudo apt-get install matplotlib

# Python
import matplotlib.pyplot as plt
panda install Inline::Python
Perl6 (Rakudo) → Python
#!/usr/bin/env perl6

use lib 'lib';
use Matplotliblib;

my $plt = Matplotliblib.new;
$plt.plot([1,2,4,6,28,50,234]);
$plt.ylabel('some numbers');
$plt.show;
Ruby?
rubypython

Description

RubyPython is a bridge between the Ruby and Python interpreters. It embeds a running Python interpreter in the Ruby application's process using FFI and provides a means for wrapping, converting, and calling Python objects and methods.

RubyPython uses FFI to marshal the data between the Ruby and Python VMs and make Python calls. You can:

- Inherit from Python classes.
- Configure callbacks from Python.
- Run Python generators (on Ruby 1.9.2 or later).
gem install rubypython # !!!
(small patch to fix lib)
Ruby (YARV) → Python
require 'rubypython'
RubyPython.start
plt = RubyPython.import('matplotlib.pyplot')
#
#  ... and now we have all the power!
#
plt.plot([1, 2, 4, 6, 28, 50, 234])
plt.ylabel('some numbers'); plt.show
#!/usr/bin/env ruby

require 'rubypython'
RubyPython.start
plt = RubyPython.import('matplotlib.pyplot')
np = RubyPython.import('numpy')

# Based on "Stove Ownership" from XKCD by Randall Monroe
# http://xkcd.com/418/

plt.xkcd()

fig = plt.figure()
ax = fig.add_axes([0.1, 0.2, 0.8, 0.7])
ax.spines['right'].set_color('none')
ax.spines['top'].set_color('none')
plt.xticks([])
plt.yticks([])
ax.set_yscale('linear')
data = np.ones(100)
data[(70.099).to_a] = np.arange(30)

plt.annotate!("THE DAY I REALIZED\nI COULD COOK BACON\nWHENEVER I WANTED",
xy: [70, 1], arrowprops: {arrowstyle: '-|>', xytext: [15, -10]})

plt.plot(data)
plt.ylabel('time')
plt.xlabel('my overall health')
fig.text!(0.5, 0.05,
""Stove Ownership" from xkcd by Randall Monroe",
ha: 'center')
THE DAY I REALIZED I COULD COOK BACON WHenever I wanted

"STOVE OWNERSHIP" FROM XKCD BY RANDALL MONROE
FFI... so sweet!
Ruby (JVM) → Python
Also works!
Exercise for the reader:

Pick a model. Visualize it!
require 'rubypython'
RubyPython.start
plt = RubyPython.import('matplotlib.pyplot')

# The 'left' slices it down to year-month
order_counts = Order
  .group("left(created_at, 7)")
  .count
  .values

plt.plot(order_counts)

plt.show
THE END