Ruby Programming Language

Ruby – Scripting language, dynamic and object oriented

Allows rapid development and rapid prototypes of software

Consists of useful string operations and regular expressions

Everything in Ruby is an object

Has automatic garbage collection

Instant feedback when developing

Multiple OS support and open source

Ruby Programming Language

History

Born Feb 23, 1993 – Yukihiro "Matz" Matsumoto

Ruby 0.95 – announced Dec 21, 1995
  – OO, Inheritance, iterators, exception handling, garbage collection

Ruby 1.0 – released Dec 25, 1996

Ruby 1.3 – 1999
  – After its release an English "Ruby" mailing list was created

Ruby on Rails – 2005
  – MVC web framework coded with Ruby

Ruby 1.9.1 – Latest version

Ruby Programming Language

Philosophy

"Ruby is simple in appearance, but is very complex inside,
    just like our human body" -- Matz

POLS –Principle of Least Surprise – Design the language so experienced
    Programmers have minimal confusion.

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Ruby in Action

To execute Ruby code use the IRB (interative ruby interpreter) or from a
– Terminal type: %ruby filename.rb

Classic Hello World example using irb:
:

```
c@c-laptop:~$ irb
irb(main):001:0> puts "Hello World"
Hello World
=> nil
```

Using a file named hello.rb

```
c@c-laptop:~/Documents/cs183$ ruby hello.rb
Hello World
```

Ruby Programming Language

Ruby in Basics

Output:
```
    print "ruby rocks"
    puts "ruby rocks"        //inserts a CR and end
```

Functions:
```
    def welcome(name)
        puts "hey  #{name}"
    end
:
```
Functions with multiple return values:
```
    def get_cost_mpg
        cost=20
        mpg=20
        Return cost,mpg
    end
Hum_cost,Hum_mpg = get_cost_mpg
```

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Ruby in Basics

Variables:
    Globals prefix with a '$'
    Instance vars prefix with a '@'

Comments: use '#'

Since everything in Ruby is an object we can apply methods:
    1.5.floor() => "1"

if(x > 7 && x < 12) { ... } in Ruby we can do something like:
    if x.between?(7,12) do ...

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Ruby in Basics

```ruby
grade = 10
school = case grade
when 0..5
  "elementary"
when 6..8
  "middle school"
when 9..12
  "high school"
else
  "college"
end


.
```

```ruby
for i in 1..4
 puts "hi #{i}"
end
```

Array Loop using 'each'

```ruby
animals = %w(lions tigers bears)
animals.each{|kind| print kind}
```

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Ruby Class

```ruby
class Person
  def initialize(fname, lname)
   @fname = fname
   @lname = lname
  end
  def to_s
    "Person: #@fname #@lname"
  end
end
person = Person.new("Augustus","Bondi")
print person
```

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RubyFile IO

Perform a file>string operation: Easy as :
    file = File.new("t1.php")
    mytext = file.read

Break down the file into an array of lines:
    lines = IO.readlines("data.txt")
    puts lines[0] #prints the first line

Output file contents:
    IO.foreach("data.txt") { |line| puts line }

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Ruby HTML Extractor Example

```
require 'open-uri'
open('http://www.soe.ucsc.edu/classes/cmps183/Spring10/'){ |f| print f.read
```

Benefits of Ruby:
Clean code, Easy to learn, Documention and support, Open Source, OO

Drawbacks of Ruby:
Interpreted {Read; Eval; Loop;} Performance < Compiled Languages

Ruby Programming Language

Links

http://www.fincher.org/tips/Languages/Ruby/

http://www.ruby-lang.org/en/about/

http://www.ruby-lang.org/en/documentation/quickstart/

http://en.wikipedia.org/wiki/Ruby_%28programming_language%29

http://articles.sitepoint.com/article/learn-ruby-on-rails