Ruby for C#-ers

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Agenda

- What is Ruby?
- How does the language work?
- IronRuby specifics
- Where to apply IronRuby?

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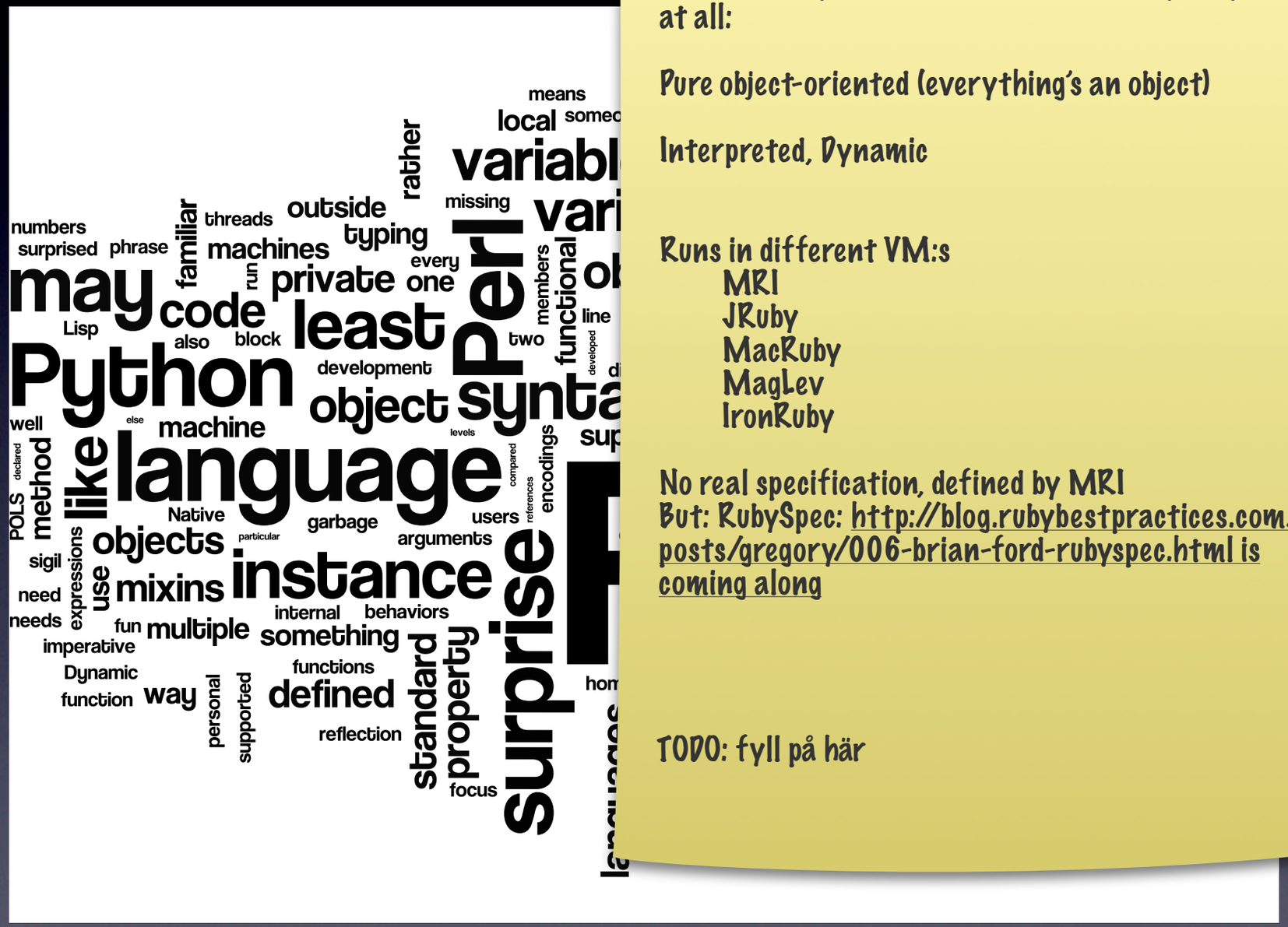
What i



Ruby was created in the 90's by Matz, Yukihiro Matsumoto

For those of you who haven't touched any ruby code at all:

Pure object-oriented (everything's an object)

Interpreted, Dynamic

Runs in different VM:s

- MRI
- JRuby
- MacRuby
- MagLev
- IronRuby

No real specification, defined by MRI
But: RubySpec: http://blog.rubybestpractices.com/posts/gregory/006-brian-ford-rubyspec.html is coming along

TODO: fyll på här

http://www.wordle.net/show/wrdl/1665715/What_is_Ruby%3F

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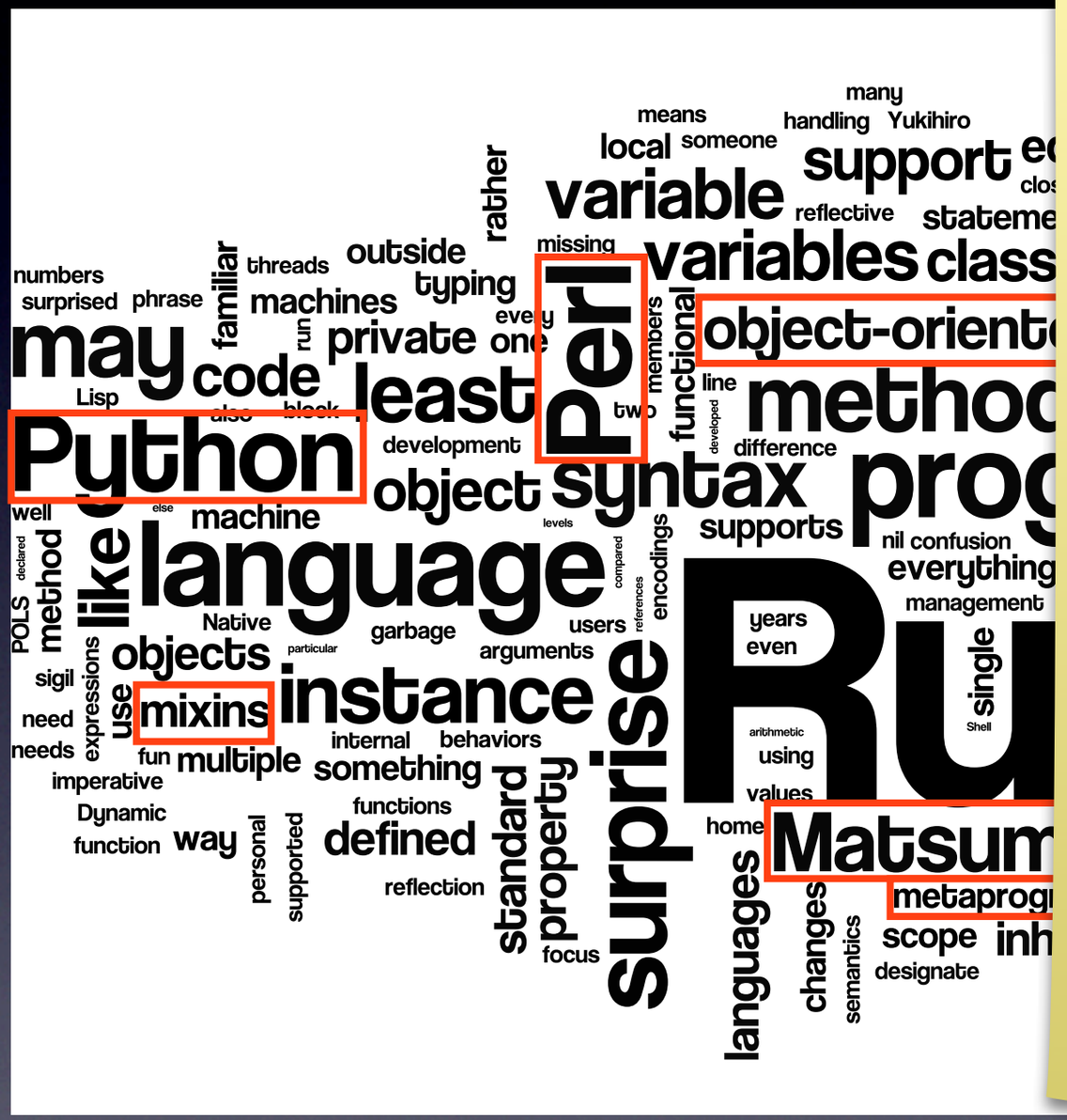

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What is R

- Open Source
- Comes with a REPL
- Transition 1.8 to 1.9 (Multilingualization)

MRI is Open Source
All other VM:s OSS as well

Gems
* Pre-packaged open source components
  - For Java devs, similar to mvn (on steroids)
  - infrastructure (e.g. aws gems)
  - domain logic (e.g. aasm, state machine impl)
  - resolves dependencies
  - gem install <gem-name>
  - Incredibly easy to share and use other developers' code

irb - a REPL (Read, Eval, Print, Loop)

In a transition, 1.8 to 1.9
1.9 main feature: Multilingualization support

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Hello world

Demo: "ir.exe 001_HelloWorld.rb"

Take-away:
1. You don't have to use

```
public void main(string [] args) {
      //code
}
```

2. You don't have to use parenthesizes if the interpreter understands your code

```
puts("Hello World")
```

- puts "Hello World"

Control structure

```
if condition
      do_stuff
end

do_stuff if condition

do_stuff unless condition
```

- if/else/elsif
- unless
- Switching places on if/unless and result

Everything's

no need for boxing/unboxing
everything is nullable (nil'able)

```
a = 3
puts a.class
a = nil
puts a.class
puts a.class.ancestors
```

- Even numbers!

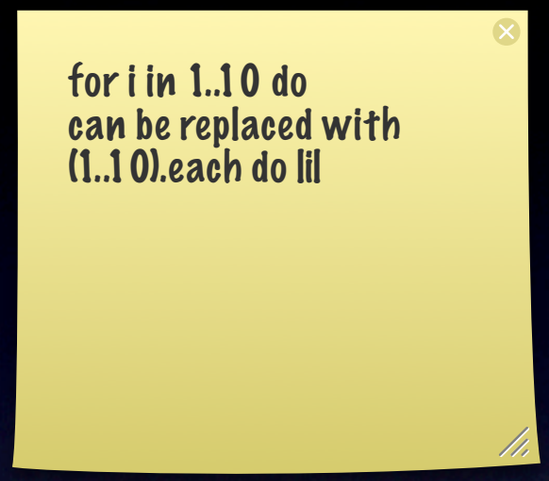
Blocks

Compared to Lambdas in C#:
* no add-on
* most API:s support blocks
* The culture is to use blocks/lambdas whenever possible
* (It's getting better in .NET land, though)

```
a.each do |item|
  do_stuff if (item%2 == 1)
end
```

- API:s use blocks as a first-class citizen

Loops



- Not used as much as in C#

Classes and methods

```
class MyClass
def method(param=1)
puts param
end
end

c = MyClass.new
c.method # => 1
c.method(2) # => 2
```

- No curlies
- Default method parameters
- All classes are open for modification

Mixins

- Adds behaviour to classes

Mixins can be used to implement Reenskaug's/Coplien's DCI

```
module MyMod
def mod_method
puts "from module"
end
end

c.extend MyMod
c.mod_method # => "from module"

class OtherClass
include MyMod
end

o = OtherClass.new
o.mod_method
```

Metaprogramming

- Used to create interna

Super-simple to implement an internal DSL by using meta programming

Rails use this a lot (:has_many etc)

Demo: Show the SubscriptionDeals DSL

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DLR

Ruby

DLR

CLR

DLR is a layer that makes it possible to run dynamic, interpreted languages

IronRuby runs in interpreted mode at first, but later it's JIT'ed

Calling Ruby from C#

- Separate AppDomain
- ScriptRuntime (in same AppDor
- ScriptScope

If you want to run Ruby from your own apps

3 different ways of hosting the DLR (and ruby code) from your own C# code

The higher in the list, the more isolated (and heavyweight)

Calling C# from Ruby

- Very similar to C#

Add reference = require a dll

Search rules:
- The current folder
- IronRuby bin folder
- GAC

require 'System.Windows.Forms' = add reference
include System::Windows::Forms = using ...

Putting it all together

- Hosting an IronRuby DSL from C#

Subscription.App (C#)

DSL (Ruby)

Domain Model (C#)

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We

Ruby on Rails
- the big reason ruby is so popular

For light-weight web solutions (some json etc): Sinatra

http://rubyonrails.org/

http://www.sinatrarb.com

DSL:s

Using ruby in a subset of the product

-if reqs often change and we can't wait for a re-deploy e.g. rules engine for a stock-trading app

- Internal DSL:s + Ruby = a treat

Testing

```
describe User do
  it "should be in any roles assigned to it" do
    user = User.new
    user.assign_role("assigned role")
    user.should be_in_role("assigned role")
  end


it "should NOT be in any roles not assigned
    user = User.new
    user.should_not be_in_role("unassigned
  end
end
```

RSpec for unit-level tests
Cucumber for acceptance tests
Some of you may have already seen cucumber

Build environment

```
desc "Run a sample build using the MSBuil
msbuildtask do |msb|
    msb.properties = {:configuration =>
    msb.targets [:Clean, :Build]
    msb.solution = "spec/support/TestSolution/TestSolution.sln"
end
```

Rake is a DSL for dependency and build management

There are a number of toolkits for building C# solutions in Rake, e.g. Albacore

For an introduction, see Martin Fowler's article about rake, http://martinfowler.com/articles/rake.html

IronRuby drawbacks

i.e. don't use IronRuby for high-performant systems

- Performance
  - Throughput
  - Start-up (latency)

Thanks!

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