A Visual Introduction To Parrot Virtual Machine

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http://parrot.org

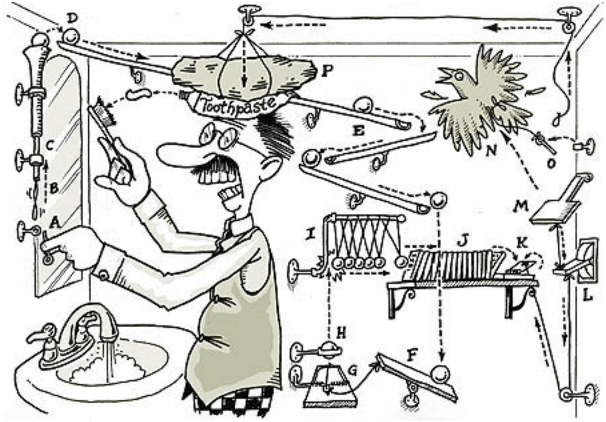
What is Parrot, really?

Parrot is many things:

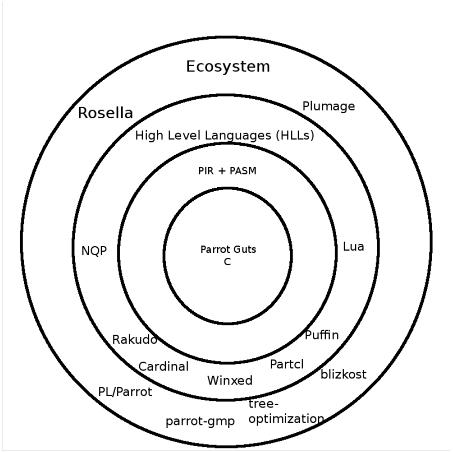
- A culture
- A collection of languages
- A virtual machine to run said languages
- A set of tools to write new languages
- A playground for compiler + language research
- A second cousin to Perl 6

Parrot is what you want it to be.

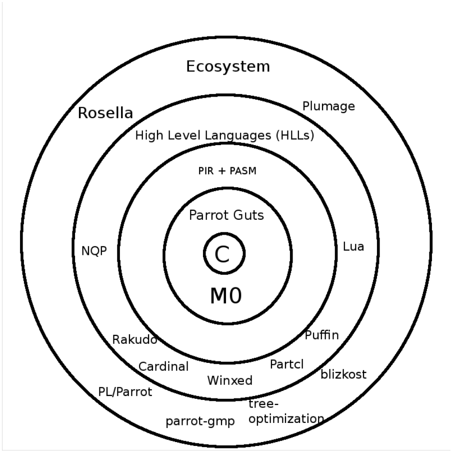
Parrot Culture



The Parrot Onion (NOW)



The Future Parrot Onion



PMC is for Cookie ...

PMC = Parrot Magic Cookie a.k.a. Objects
Serious people prefer to call them PolyMorphic Containers, but not me

PMC is for Cookie ...

Meta-recipe:

- _ cups of _ flour
- _ _ eggs
- _ cups of _ chocolate chips
- _ cups of _ sugar
- _ sticks of _ butter
- _ spoons of _ butter

PMC is for Cookie ...

Some people like really sweet, dark chocolate chip, peanut butter cookies.

- 2 cups of white flour
- 2 organic eggs
- 1 cup of dark chocolate chips
- 3 cups of cane sugar
- 2 sticks of unsalted butter
- 3 spoons of peanut butter

PMC is for Cookie ...

OH NOES! Some people are allergic to peanut butter, dislike processed flour and prefer milk chocolate! Also, almond butter is a delicious replacement for peanut butter.

- 2 cups of wheat flour
- 2 organic eggs
- 1 cup of milk chocolate chips
- 3 cups of cane sugar
- 2 sticks of unsalted butter
- 3 spoons of almond butter

The meta-recipe is actually a VTABLE!

VTABLE = virtual tables
Examples of actual VTABLEs:

- get_integer - get integer representation of PMC
- set_integer - set integer representation of PMC
- get_number - get numeric/float representation
- set_number - set numeric/float representation
- elements - get the number of elements

Just like no recipe uses every ingredient in your fridge, each PMCs does not implement every VTABLE.

Register-based

No stacks! Like Lua VM and Dalvik VM

Different set of optimizations than stack-based VMs

Continuation Passing Style

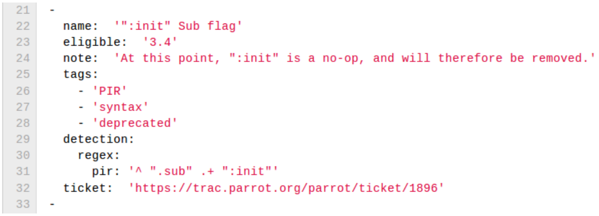
Keep passing it along...

Deprecation Policy

We give our APIs a bath every three months...

Deprecation Policy

api.yaml



```
-
  name:  '":init" Sub flag'
  eligible:  '3.4'
  note:  'At this point, ":init" is a no-op, and will therefore be removed.'
  tags:
    - 'PIR'
    - 'syntax'
    - 'deprecated'
  detection:
    regex:
      pir: '^ ".sub" .+ ":init"'
  ticket:  'https://trac.parrot.org/parrot/ticket/1896'
-
```

tools/dev/show_deprecated.nqp
tools/dev/resolve_deprecated.nqp
tools/dev/show_experimental.nqp
tools/dev/dedeprecator.nqp

Parrot Compiler Toolkit (PCT)

We give you the dough, you cook it...

Parrot Compiler Toolkit (PCT)

Web Interface Coming Real Soon Now

- tools/dev/mk_language_shell.pl - PIR build system
- tools/dev/create_language.pl - Perl 5 build system

Resources

- http://docs.parrot.org
- #parrot on irc.parrot.org
- parrot-dev and parrot-users mailing lists
- https://github.com/Benabik/cish

Thanks!

Slides at https://github.com/leto/presentations