



masak & jnthn

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Dude, where's my flying car?

A whirlwind exposition of the Perl 6 language: its release status, some concrete syntactic examples, a historical overview, a **real live demo**, and current status and roadmap.

programming since being 8 years old

multi-paradigm programming wizard

enjoys beer, mountains, and photography

masak & jnthn

started programming at 10

learns a new language every year

enjoys cooking, writing music, and beer

We like Perl 6.

This talk is about why.

When will Perl 6 be released?

How about a production-ready Perl 6?

6.0.0? You know, an official release.

You may have heard these things about Perl 6...

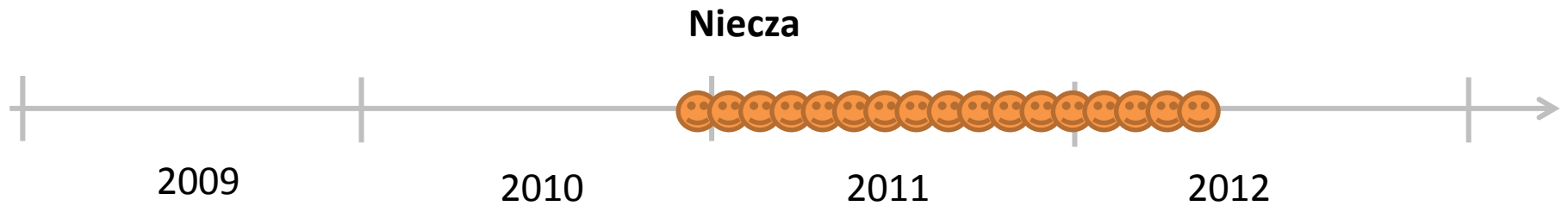
Will it ever be finished?

Perl 6 has “missed the boat”!

Perl 6 is vapourware!

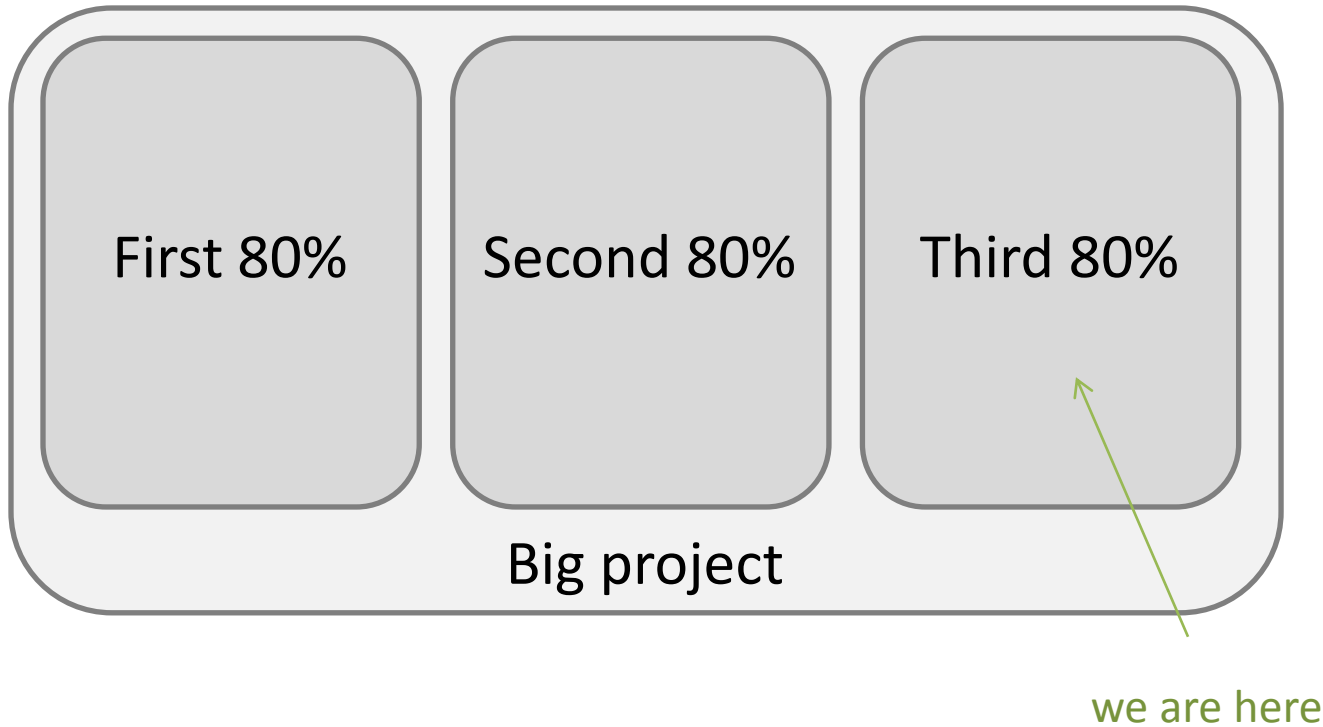


Fun fact: we do make releases! 😊



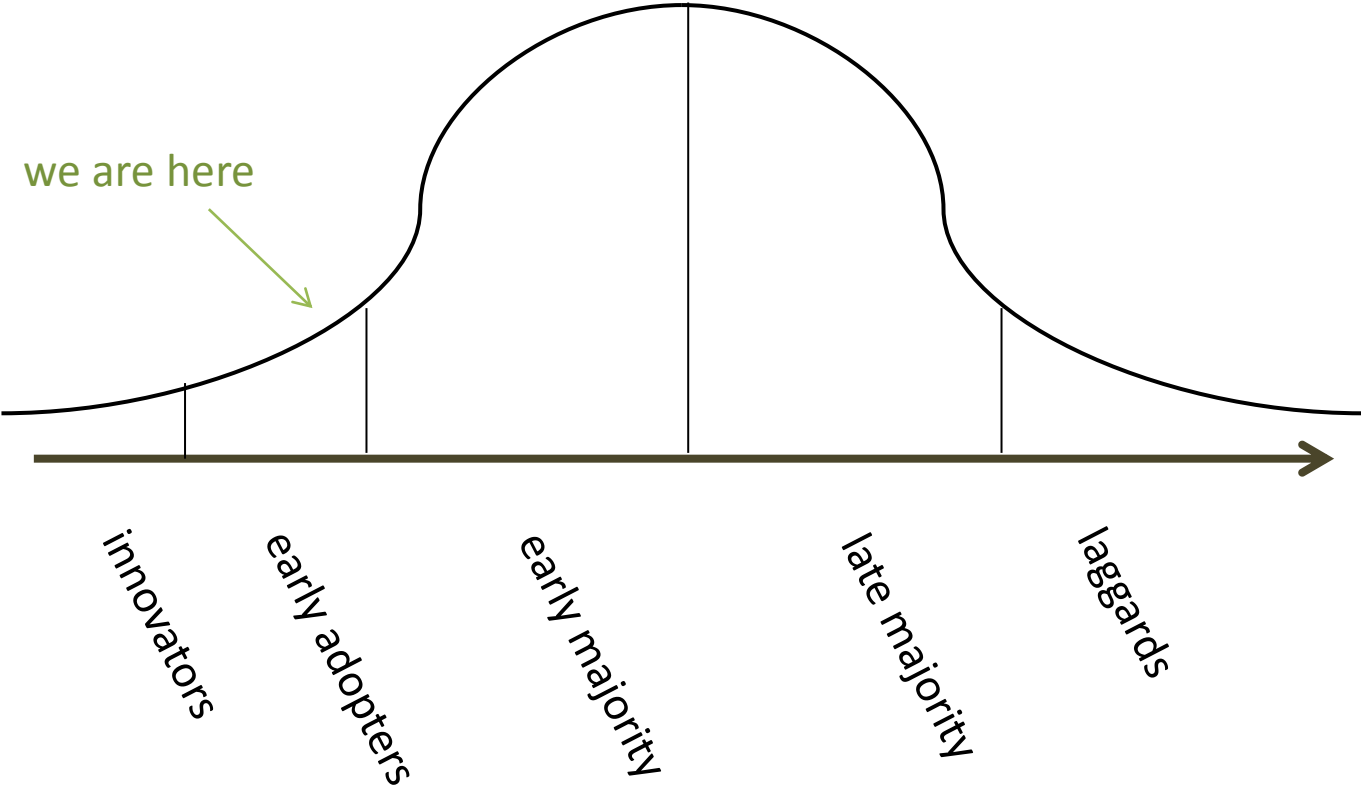
But that's not what people mean when they say "released". 😞

Perl 6 is partway done. Some things are ready for use.



(In this talk and the next one, we'll only talk about things that are implemented already. You'll see that it's quite a lot.)

We're riding the wave of the adoption curve, inviting people as we go along:



**“ The future is already here — ”
it's just not very evenly distributed.**

William Gibson

A few small language examples

Loops

combine together like a zipper

```
for @students { ... }  
for @students -> $student { ... }
```

```
for @tastes Z @foods -> $taste, $food { ... }  
for @tastes X @foods -> $taste, $food { ... }
```

```
while $continue { ... }  
until $quit { ... }
```

combine together
in all possible ways

```
repeat while $continue { ... }  
repeat until $quit { ... }
```

```
loop { ... }  
loop ( ;; ) { ... }
```

C-style loop

test condition
after
first iteration

Subroutines

```
sub foo { say "OH HAI" }
foo();                               # OH HAI
foo;                                  # OH HAI

sub bar($a, $b?) { say defined $b }
bar(1, 2);                            # True
bar(3);                                # False

sub baz($a, $b = 5) { say $b }
baz(1, 2);                             # 2
baz(3);                                 # 5

sub greet($name, :$greeting = "Hello") {
    say "$greeting $name";
}
greet "jnthn";                          # Hello jnthn
greet "kathy", :greeting("你好");      # 你好 kathy
```

Classes

```
class Point {  
  has Real $.x;  
  has Real $.y;  
  
  method gist {  
    "$.x, $.y"  
  }  
}
```

```
my Point $p .=  
  new(:x(3), :y(4));
```

```
say $p;           # (3, 4)
```

```
class Rectangle {  
  has Point $.topleft;  
  has Point $.bottomright;  
  
  method gist {  
    "$.topleft - $.bottomright"  
  }  
}
```

```
class SmoothRectangle is Rectangle {  
  method gist {  
    callsame() ~ " with web 2.0 corners"  
  }  
}
```

Subtypes and enums

```
subset EvenInt of Int where {  $n \% 2 = 0$  };
```

```
say 5 == EvenInt;      # False
```

```
say 8 == EvenInt;      # True
```

```
sub foo(EvenInt $e) { ... }
```

```
enum Day <Sun Mon Tue Wed Thu Fri Sat>;
```

```
say +Fri;              # 5
```

```
say ~Fri;              # Fri
```

```
say Fri.kv;            # Fri 5
```

```
say 3 == Day;          # True
```

```
say 9 == Day;          # False
```

Operator overloading

```
sub postfix:<!>($n) { [*] 1..$n }  
say 5!;
```

- ① Build ranks and suits**
- ② Build a deck of cards**
- ③ Build a table of card points**
- ④ Draw a random hand of five cards**
- ⑤ Print the hand and its total point sum**

With Perl 5


```
my @suits = qw< ♣ ♦ ♥ ♠ >;  
my @ranks = (2..10, qw< J Q K A >);
```

① Build ranks and suits

```
# concatenate each rank with each suit
my @deck;
for my $rank (@ranks) {
    for my $suit (@suits) {
        push @deck, "$rank$suit";
    }
}
```

② Build a deck of cards

③ Build a table of card points

```
my %points;
for my $rank (@ranks) {
    for my $suit (@suits) {
        my $score = $rank eq 'A' ? 11
            : $rank =~ /[JQK]/ ? 10
            : $rank;
        $points{"$rank$suit"} = $score;
    }
}
```

④ Draw a random hand of five cards

```
# grab five cards from the deck  
my @hand;  
for (1..5) {  
    my $card = $deck[rand @deck];  
    redo if grep { $_ eq $card } @hand;  
    push @hand, $card;  
}
```

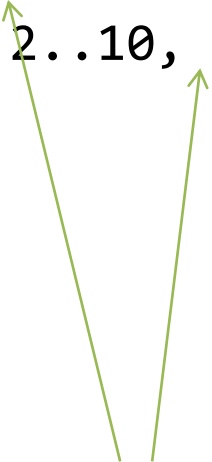
⑤ Print the hand and its total point sum

```
# display my hand
say join ' ', @hand;

# tell me how many points it's worth
my $sum;
for $card (@hand) {
    $sum += $points{$card};
}
say $sum;
```

With Perl 6

```
my @suits = < ♣ ♦ ♥ ♠ >;  
my @ranks = 2..10, < J Q K A >;
```



① Build ranks and suits

no need for qw any more;
<> is now a list quoter

```
# concatenate each rank with each suit  
my @deck = @ranks X~ @suits;
```



the two for loops are gone; cross operator
joins together elements in all possible ways

② **Build a deck of cards**

③ Build a table of card points

```
my %points = @deck Z ((2..10, 10, 10, 10, 11) xx 4);
```



no for loop; zip operator combines two lists

④ Draw a random hand of five cards

```
# grab five cards from the deck  
my @hand = @deck.pick(5);
```

no for loop; built-in .pick method



⑤ Print the hand and its total point sum

```
# display my hand  
say @hand;
```

no join; you get spaces for free



```
# tell me how many points it's worth  
say [+] %points{@hand};
```

for loop folded into reduce operator



```
my @suits = < ♣ ♦ ♥ ♠ >;
my @ranks = 2..10, < J Q K A >;

# concatenate each rank with each suit
my @deck = @ranks X~ @suits;

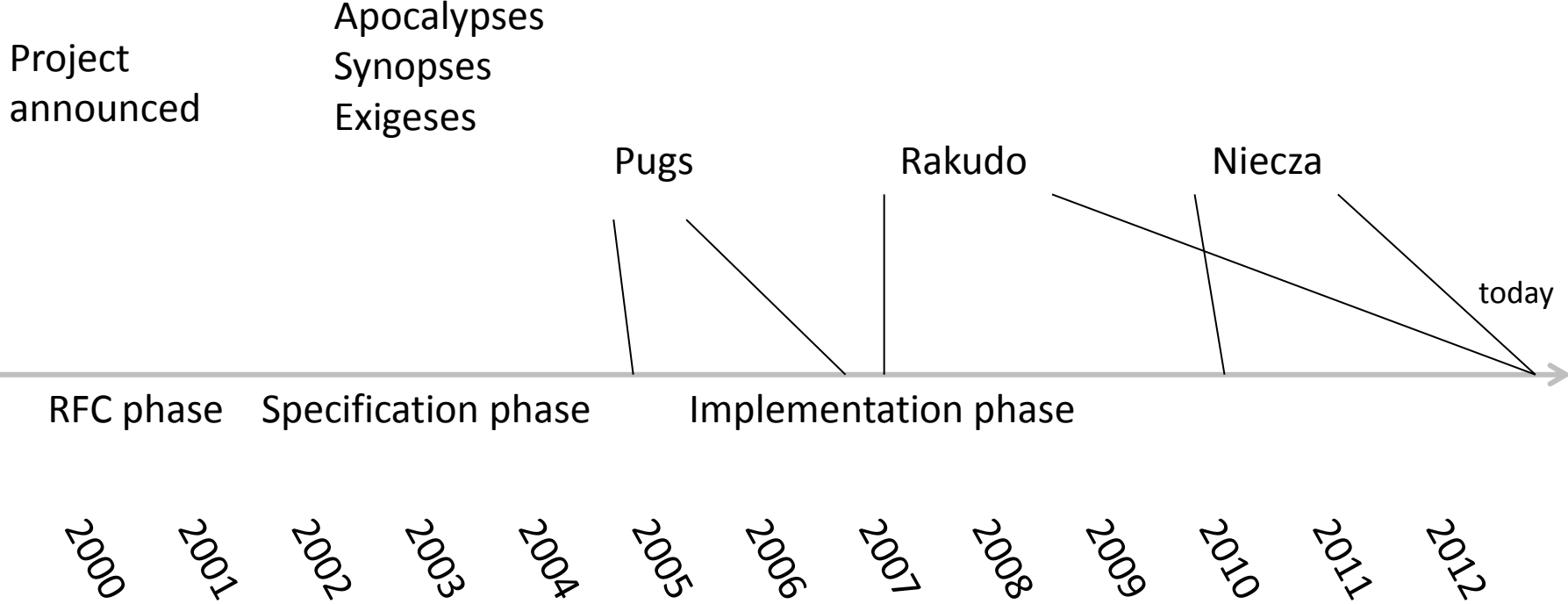
my %points = @deck Z ((2..10, 10, 10, 10, 11) xx 4);

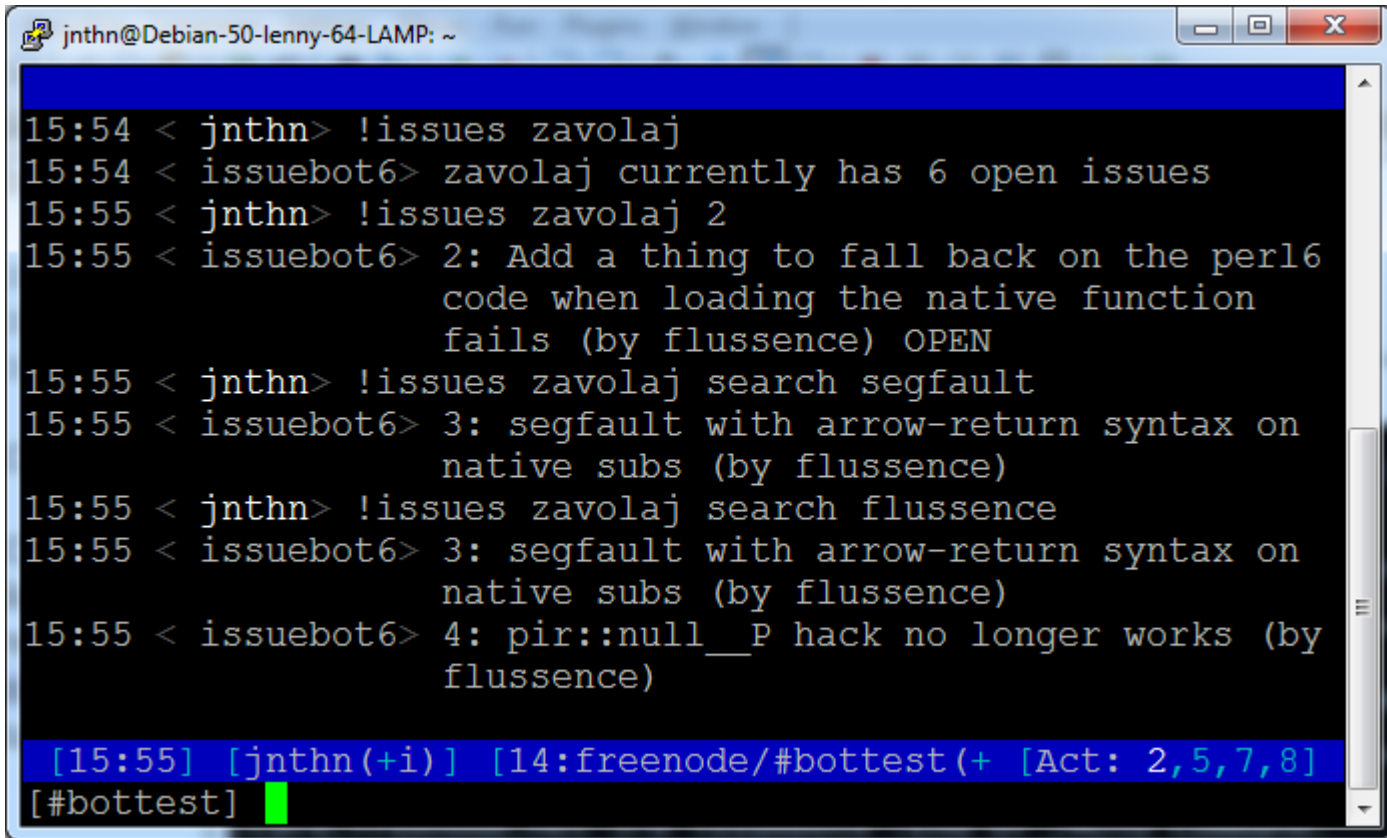
# grab five cards from the deck
my @hand = @deck.pick(5);

# display my hand
say @hand;

# tell me how many points it's worth
say [+] %points{@hand};
```

Overview of the history of Perl 6



A screenshot of an IRC chat window. The window title is 'jnthn@Debian-50-lenny-64-LAMP: ~'. The chat log shows a series of messages between a user 'jnthn' and a bot 'issuebot6'. 'jnthn' sends '!issues zavolaj', and 'issuebot6' responds 'zavolaj currently has 6 open issues'. 'jnthn' sends '!issues zavolaj 2', and 'issuebot6' lists two issues: '2: Add a thing to fall back on the perl6 code when loading the native function fails (by flussence) OPEN' and '3: segfault with arrow-return syntax on native subs (by flussence)'. 'jnthn' sends '!issues zavolaj search segfault', and 'issuebot6' responds '3: segfault with arrow-return syntax on native subs (by flussence)'. 'jnthn' sends '!issues zavolaj search flussence', and 'issuebot6' responds '3: segfault with arrow-return syntax on native subs (by flussence)'. 'jnthn' sends '!issues zavolaj search pir::null__P hack no longer works (by flussence)', and 'issuebot6' responds '4: pir::null__P hack no longer works (by flussence)'. At the bottom, a status bar shows '[15:55] [jnthn(+i)] [14:freenode/#bottest(+ [Act: 2,5,7,8] [#bottest]'.

```
jnthn@Debian-50-lenny-64-LAMP: ~
15:54 < jnthn> !issues zavolaj
15:54 < issuebot6> zavolaj currently has 6 open issues
15:55 < jnthn> !issues zavolaj 2
15:55 < issuebot6> 2: Add a thing to fall back on the perl6
      code when loading the native function
      fails (by flussence) OPEN
15:55 < jnthn> !issues zavolaj search segfault
15:55 < issuebot6> 3: segfault with arrow-return syntax on
      native subs (by flussence)
15:55 < jnthn> !issues zavolaj search flussence
15:55 < issuebot6> 3: segfault with arrow-return syntax on
      native subs (by flussence)
15:55 < issuebot6> 4: pir::null__P hack no longer works (by
      flussence)
[15:55] [jnthn(+i)] [14:freenode/#bottest(+ [Act: 2,5,7,8]
[#bottest]
```

Demo of a real application

IRC bot, running on Rakudo, using Github's REST API to list issues

What's there today

Basic control structures,
blocks, file IO, regexes,
control flow, variables,
constants, functions, etc

Classes

Roles

Subset types

Packages

Enums

Modules

Mixins

Introspection

Junctions

Phasers

Lots of built-in types

Multi dispatch

Advanced signature matching

Operators

Reduction ops

Hyper ops

Cross ops

Zip ops

Meta-
Object
Protocol

Pod documentation

Regexes

Grammars

What's we're still working on

Macros

Performance

Native type stuff

Compile-time optimizations

Slangs

Some advanced
regex constructs

Backend
portability

Perl 5 interop

Perl 6 is partway done.

Some things are ready for use.

Is it finished, polished, production-hardened?

No.

But it's worth checking out.

Try it out!

Perl 6

perl6.org

Welcome to Perl 6



Perl 6 is currently being developed by a team of volunteers. You can help too. The only thing is nice to all kinds of people (and not just Perl 5 programmers) and someone will be glad to help you get started.

Community

[#perl6 IRC channel](#), [system IRC client](#) or [chat live in your browser](#)

[Perl 6 screencasts](#), [Perl 6 on Rosetta Code](#), [Blogs](#), [Perl 6 wiki](#)

»MORE«

Specification

[Synopsis](#) - official Perl 6 design documents

[STD.pm](#) - official Perl 6 grammar

»MORE«

Compilers

[Rakudo](#), a compiler based on [Parrot](#).

[Niecza](#), a Perl 6 compiler for the CLR (mono/.NET)

»MORE«

Documentation

[Using Perl 6](#), an open-source Perl 6 book

[Perl 5 to 6](#), introduction for Perl 5 programmers

»MORE«

download

Modules and Whatever

[Perl 6 modules directory](#)

[Panda](#), a module installer for Rakudo

If you want to contribute to this page, [look here for instructions](#).