Benchmarking Perl

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Lightning Talk Edition

Benchmarks are
reference points

All Things Being Equal...

* There are lies, damned lies, and benchmarks
* Everyone has an agenda
* You don't run testbeds as production
* Skepticism wins the day

Language Shootout

Benchmarking programming languages?

How can we benchmark a programming language? We can't - we benchmark programming language implementations.

How can we benchmark language implementations? We can't - we measure particular programs.

http://shootout.alioth.debian.org/

Availability Disk Use
Concurrent Users CPU Time
Completion Time Memory Use
Uptime Bandwidth Use
Network Lag Responsiveness
Binary Size
Programmer Time

Programmer Time

Theory of Measurement

* Observation changes the universe
* Nothing is objective
* Tools have inherent uncertainities

Modules

* Devel::Size - size(), total_size()
* Devel::Peek - mstat()
* DBI::Profile
* Benchmark
* Devel::DProf, Devel::Smallprof

Common Benchmark misuse

```
use Benchmark 'cmpthese';
my @long  = ('a' .. 'z', '');
my $iter = shift || -1;
cmpthese(
    $iter,{
        long_block_ne  => q{grep {$_ ne ''} @long},
        long_block_len => q{grep {length}   @long},
        long_bare_ne   => q{grep $_ ne '',  @long},
        long_bare_len  => q{grep length,    @long},
    }
);
```

http://www.perlmonks.org/index.pl?node_id=536503

What's wrong with this picture?

Rate		bare_ne	block_len	block_ne	bare_len
long_bare_ne	3635361/s	--	-6%	-6%	-8%
long_block_len	3869054/s	6%	--	-0%	-2%
long_block_ne	3872708/s	7%	0%	--	-2%
long_bare_len	3963159/s	9%	2%	2%	--

Do something useful

```
use Benchmark 'cmpthese';
our @long  = ('a' .. 'z', '');
my $iter = shift || -1;
cmpthese(
    $iter,{
        long_block_ne  => q{my @array = grep {$_ ne ''} @long},
        long_block_len => q{my @array = grep {length}   @long},
        long_bare_ne   => q{my @array = grep $_ ne '',  @long},
        long_bare_len  => q{my @array = grep length,    @long},
    }
);
```

These numbers make sense

15" Powerbook G5, Mac OS X.4.5, perl5.8.4

	Rate	block_ne	block_len	bare_ne	bare_len
long_block_ne	31210/s	--	-3%	-3%	-5%
long_block_len	32119/s	3%	--	-0%	-2%
long_bare_ne	32237/s	3%	0%	--	-2%
long_bare_len	32755/s	5%	2%	2%	--

Conclusion

* Decide what is important to you
* Realize you have bias
* Report the situation
* Don't turn off your brain
* Make predictions that you can verify