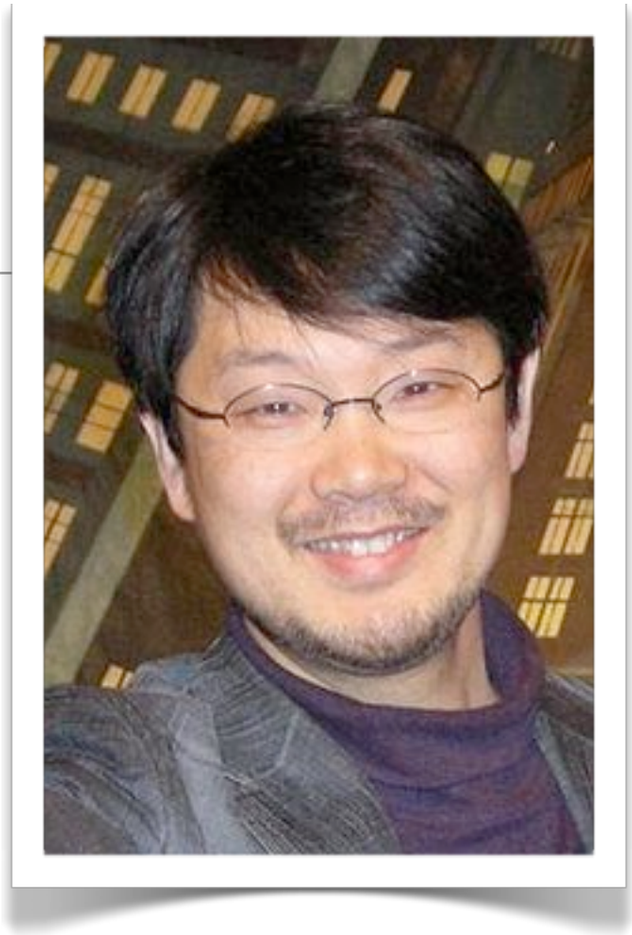
Ruby & Perl

Ein Vergleich im Hinblick auf Erlernbarkeit und Übertragbarkeit auf andere Sprachen

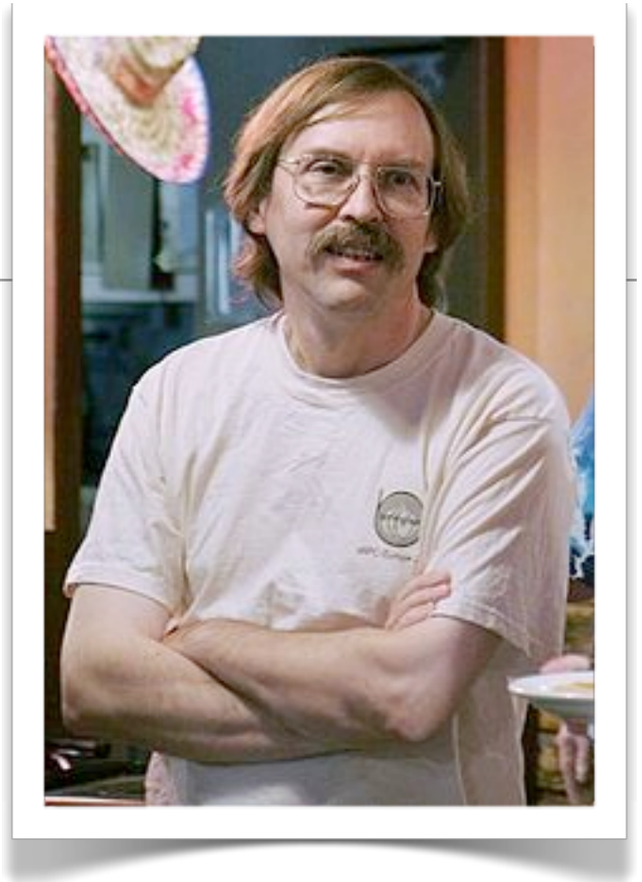
Kurzprofil

Ruby



- Shöpfer: Yukihiro “matz” Matsumoto (1995)
- Aktuelle Version : 1.9.x
- Einflüsse : Perl, Smalltalk, Eiffel, Ada und Lisp
- Paradigmen: dynamsich, reflektiv, Objektorientiert
- Mottos: principle of least astonishment (POLA), TIMTOWTDI

Perl



- Schöpfer: Larry Wall (1987)
- Aktuelle Version: 5.10.x (seit)
- Nachfolger: Perl 6, seit 2000 in Entwicklung
- Einflüsse : Awk, C, LISP, Pascal, Sed, Unix-Shell
- Paradigmen: prozedural, modular, teilweise objektorientiert
- Mottos: TIMTOWTDI, makes easy jobs easy and hard jobs possible

Vergleich

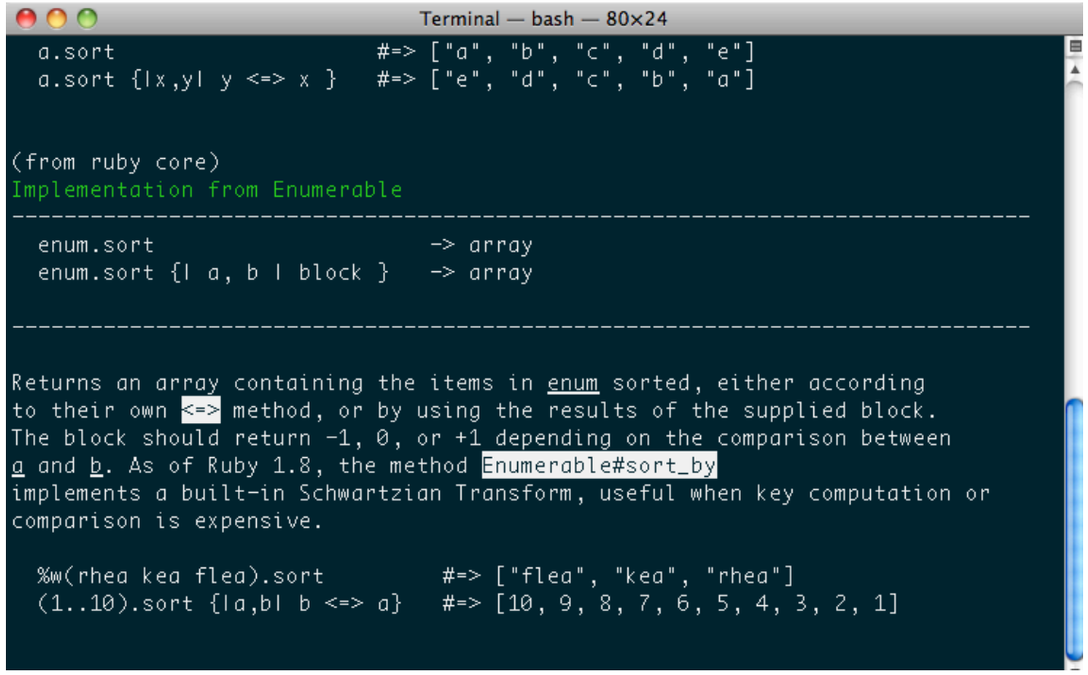
Implementierungen

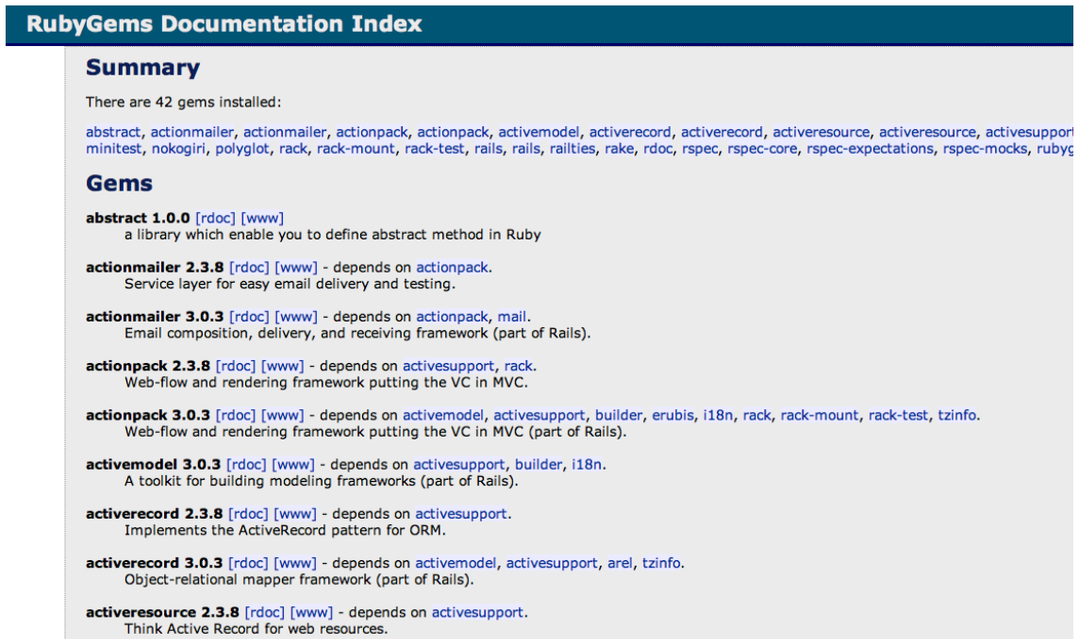
- MRI (Matz's Ruby Interpreter, in C)
- JRuby
- Mac-Ruby
- Rubinius
- IronRuby
- ...

- Perl-Interpretor in C für Perl 5
- für Perl 6:
- Parrot
- Rakudo
- Pugs

Ruby - out of the box

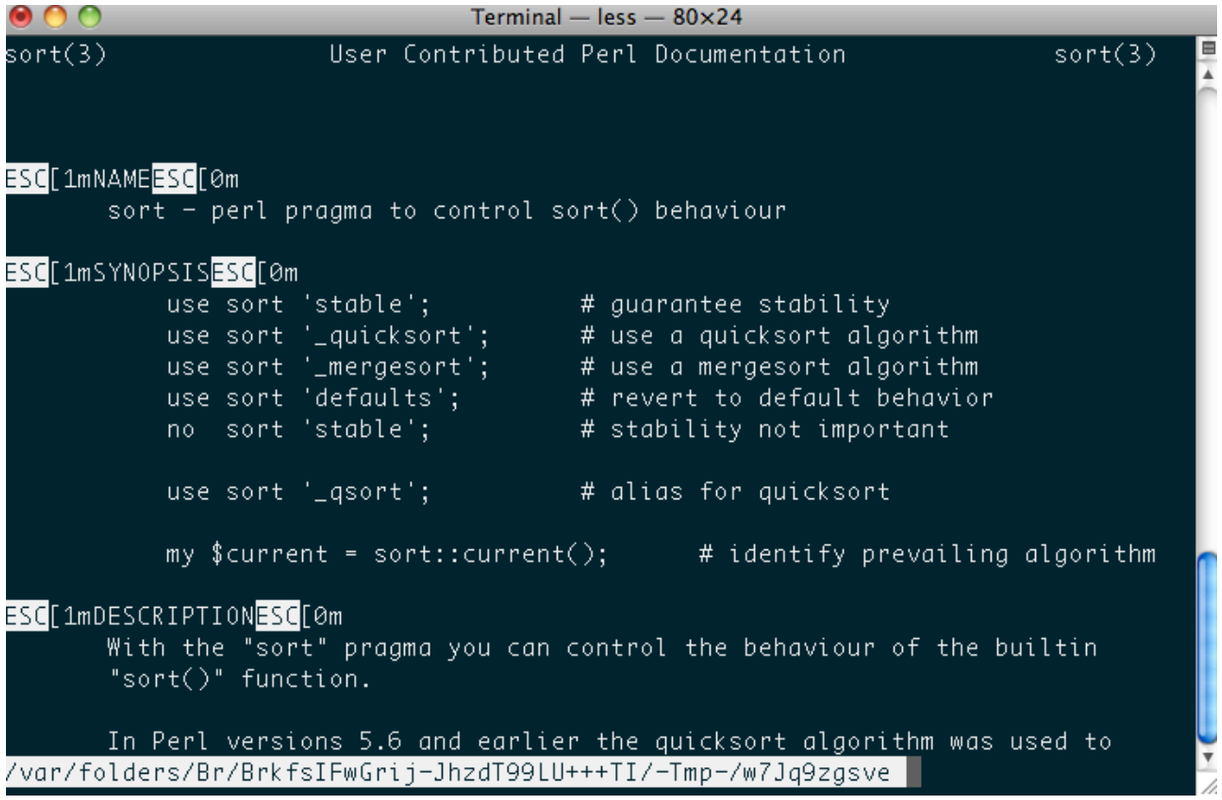
- ruby : Der Interpretor
- irb : Interaktive Shell
- ri : Ruby-Dokumentation
- gem : Paketverwaltung





Perl - out of the box

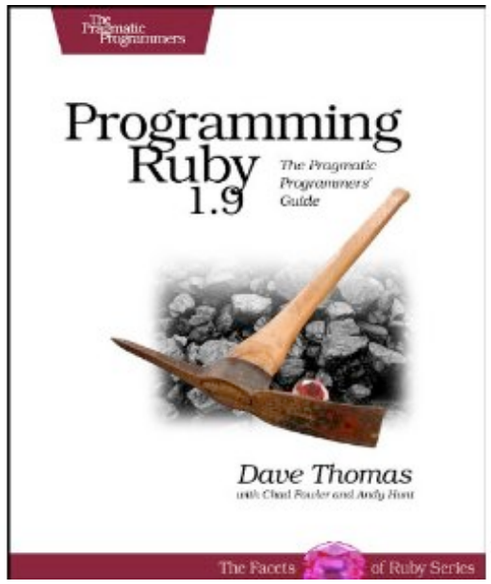
- perl : Der Interpretor
- perldoc : Perl-Dokumentation
- cpan : Paketverwaltung

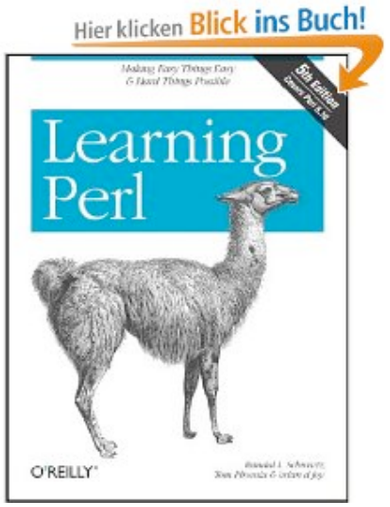


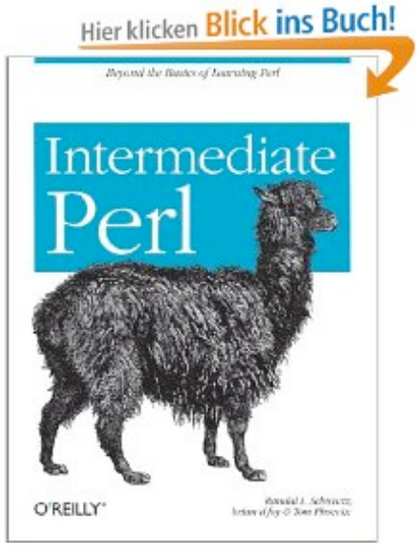
Erweiterungen

- RubyForge und Ruby Application Archive (RAA): 7000 Anwendungen
- CPAN: 19.000 Anwendungen

Literatur : Einsteiger / Fortgeschrittene



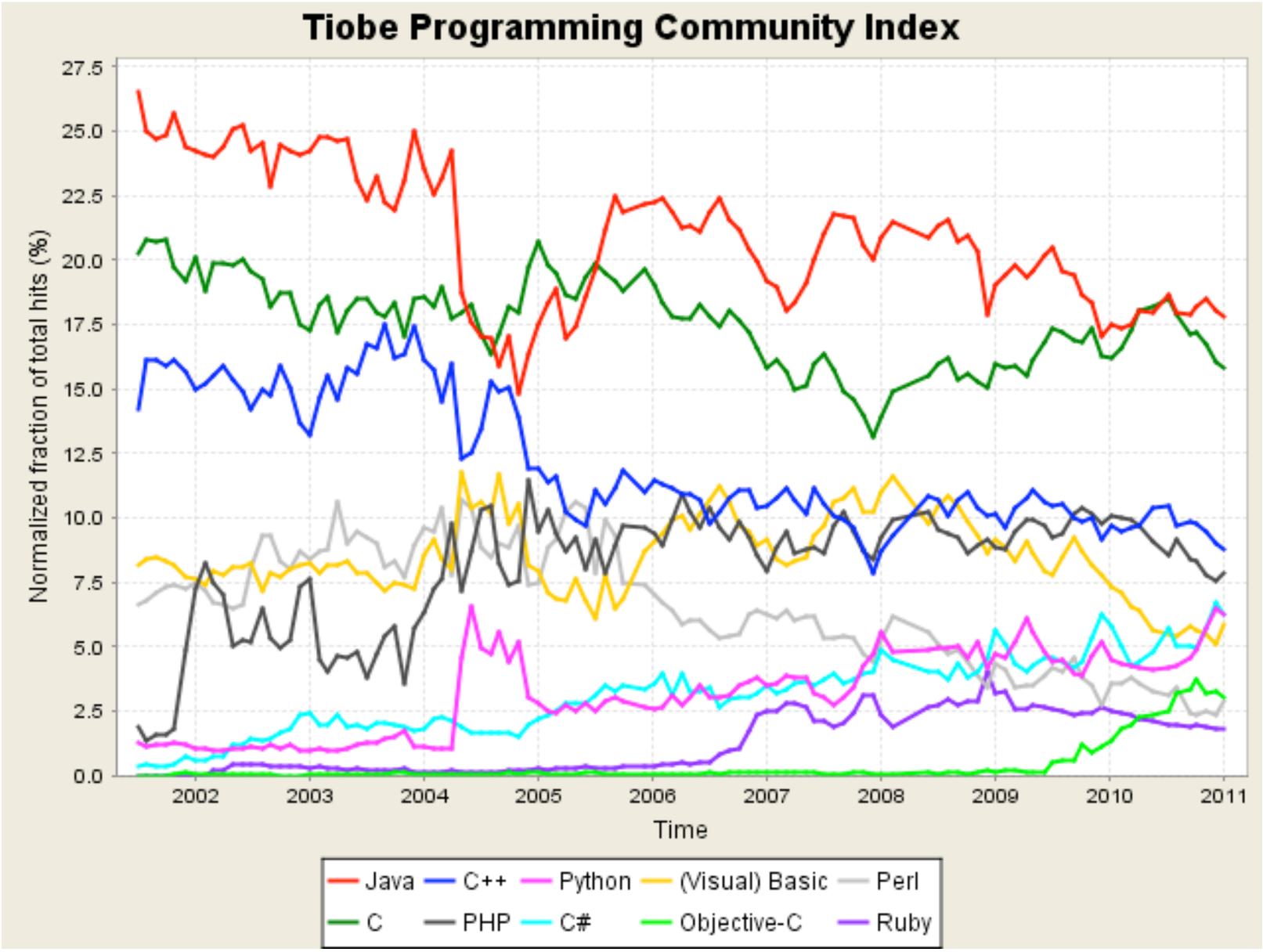




- Thomas: Programming Ruby
- ISBN: 978-1934356081

- Schwartz: Learning Perl
- ISBN: 978-0596520106
- Schwartz: Intermediate Perl
- 978-0596102067

Verbreitung und Entwicklung : Tiobe



Syntax: Methodendefinition

```ruby
#!/usr/bin/env ruby -w
def methode(a,b)
  puts "a:#{a} und b:#{b}"
end

methode(1,"test")
methode(1)
```

```
a:1 und b:test
```

ArgumentError: wrong number of arguments (1 for 2)

method methode in **methode.txt** at line 3
method <main> in **methode.txt** at line 8

Program exited with code #1 after 0.03 seconds. copy output

```perl
#/usr/bin/env perl -w

sub methode {
  ($a,$b) = @_;
  print "a:".$a." und b:".$b."\n";
}

methode(1,"test");
methode(3,4,5);
methode(1);
```

```
a:1 und b:test
a:3 und b:4
a:1 und b:
```

Program exited with code #0 after 0.04 seconds. copy output

Syntax: Erstellen einer einfachen Klasse

```ruby
#!/usr/bin/env ruby -w
class Greeter
    attr_accessor :name
    def initialize(name)
        @name = name
    end
    def say_hello
        puts "Hello #{name}"
    end
end
g = Greeter.new("Max")
g.say_hello
```

```
Hello Max
```

Program exited with code #0 after 0.03 seconds. copy output

```perl
#!/usr/bin/env perl
package Greeter;
sub new{
    my ($class,$name) = @_;
    my $self = {
        _name => $name
    };
    bless($self, $class);
    return $self;
}
sub say_hello {
    $self=shift;
    print "Hello ".$self->{_name}."\n";
}
package main;
$g = Greeter->new("Max");
$g->say_hello();
```

```
Hello Max
```

Program exited with code #0 after 0.03 seconds. copy output

Syntax: Arbeiten mit Encodings

```ruby
#!/usr/bin/env ruby
# coding: UTF-8
# Datei in Latin1 öffnen und als utf-8 bearbeiten und
speichern

latin1_file = File.open "latin1.txt", "r:iso-8859-1:utf-8"
utf8_file = File.open "utf-8.txt", "w:utf-8"

latin1_file.each_line do |line|
    utf8_file << line
end
```

```perl
#!/usr/bin/perl -w

open (LATIN1,"<","latin1.txt");
open (UTF8,">:utf8","utf-8.txt");

while (<LATIN1>) {
    print UTF8;
}
close LATIN1;
close UTF8;
```

Reguläre Ausrücke

```ruby
#!/usr/bin/env ruby -w
# coding: utf-8

%w{Baum Bär Bier Ärger}.each do |wort|
    puts wort if wort =~/är/i
end
```

```perl
#!/usr/bin/env perl -w
use utf8;

foreach(qw(Baum Bär Bier Ärger)) {
    print $_ if $_ =~/är/i
}
```

Syntax: Erstellen einer Frequenzliste

```
#!/usr/bin/ruby -w

# Liest eine Datei ein und erstellt eine Frequenzliste daraus.

#==Author: Andi Neumann
#==Date=11.07.07

h=Hash.new(0)

while zeile=gets
    zeile.chomp!
    zeile.split(/\s/).each do |wort|
      h[wort]+=1
    end
end

sorted=h.sort {|a,b|b[1]<=>a[1]}
sorted.each {|frq| puts "#{frq[1]}\t#{frq[0]}\n"}
```

```
#!/usr/bin/perl -w

#Liest eine Datei ein und erstellt daraus eine Frequenzliste
#Autor:Andreas Neumann
#Date:11.07.07

while(<>) {
     chomp;
     foreach (split /\s/,$_){
          $h{$_}++;
     }
}

foreach (sort {$h{$b} <=> $h{$a} } keys %h) {
     print "$h{$_}\t$_\n";
}
```

```
#!/usr/bin/perl -an0
map {$h{$_}++} @F;
map {print "$h{$_}\t$_\n"} (sort {$h{$b}<=>$h{$a}} (keys
%h));
```

Ruby Interpretor + Besipiele für Reflection

```
irb(main):001:0> "Weißbier"
=> "Weißbier"
irb(main):002:0> "Weißbier".encoding
=> #<Encoding:UTF-8>
irb(main):003:0> "Weißbier".class
=> String
irb(main):004:0> "Weißbier".methods
=> [:<=>, :==, :===, :eql?, :hash, :casecmp, :+, :*, :%, :[], :[]=, :insert, :length, :
size, :bytesize, :empty?, :=~, :match, :succ, :succ!, :next, :next!, :upto, :index, :ri
ndex, :replace, :clear, :chr, :getbyte, :setbyte, :to_i, :to_f, :to_s, :to_str, :inspec
t, :dump, :upcase, :downcase, :capitalize, :swapcase, :upcase!, :downcase!, :capitalize
!, :swapcase!, :hex, :oct, :split, :lines, :bytes, :chars, :codepoints, :reverse, :reve
rse!, :concat, :<<, :crypt, :intern, :to_sym, :ord, :include?, :start_with?, :end_with?
, :scan, :ljust, :rjust, :center, :sub, :gsub, :chop, :chomp, :strip, :lstrip, :rstrip,
 :sub!, :gsub!, :chop!, :chomp!, :strip!, :lstrip!, :rstrip!, :tr, :tr_s, :delete, :squ
eeze, :count, :tr!, :tr_s!, :delete!, :squeeze!, :each_line, :each_byte, :each_char, :e
ach_codepoint, :sum, :slice, :slice!, :partition, :rpartition, :encoding, :force_encodi
ng, :valid_encoding?, :ascii_only?, :unpack, :encode, :encode!, :to_r, :to_c, :>, :>=,
:<, :<=, :between?, :nil?, :!~, :class, :singleton_class, :clone, :dup, :initialize_dup
, :initialize_clone, :taint, :tainted?, :untaint, :untrust, :untrusted?, :trust, :freez
e, :frozen?, :methods, :singleton_methods, :protected_methods, :private_methods, :publi
c_methods, :instance_variables, :instance_variable_get, :instance_variable_set, :instan
ce_variable_defined?, :instance_of?, :kind_of?, :is_a?, :tap, :send, :public_send, :res
pond_to?, :respond_to_missing?, :extend, :display, :method, :public_method, :define_sin
gleton_method, :__id__, :object_id, :to_enum, :enum_for, :equal?, :!, :!=, :instance_ev
al, :instance_exec, :__send__]
```

Ruby Codebeispiele

```ruby
#!/usr/bin/env ruby -w
# coding: utf-8

class Fixnum
  def the_meaning_of_life
    42
  end
end

puts 1.class
puts 1.the_meaning_of_life
```

```
Fixnum
42
```

```ruby
#!/usr/bin/env ruby -w
# coding: utf-8

for number in 1.upto 10 do
    number.times { print "*"}
    puts "_"
end
```

```
*_
**_
***_
****_
*****_
******_
*******_
********_
*********_
**********_
```

Warum Perl?

- Riesige Auswahl an Modulen (CPAN)
- ziemlich schnell
- Reguläre Ausdrücke

Warum kein Perl

- schwer wartbarer Code (Lesbarkeit)
- Objektorientierung wirkt aufgesetzt
- Perl 6 immer noch kein Produktivstatus
- Viele Sonderwege: Subroutinendefintion, Objektorientierung, Exceptions, Unit-Testing. Daher Umstieg auf andere Sprachen (Java, Python) schwierig
- Gibt wenig Rückmeldung bei offensichtlichen Fehlern

Warum Ruby

- Gut lesbare Syntax
- Metaprogrammierung
- leichter Umstieg auf Python
- Reguläre Ausdrücke komplett integriert
- Internationalisierung
- Integration in .Net und JVM möglich
- Alles ist ein Objekt