The Art of Naming
命名的艺术

☺ *Agent Zhang（章亦春）* ☺

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Why naming *matters*?

为什么命名很*重要*？

Good hackers

➥ poets and wordsmiths

好的黑客

➥ 诗人和词汇大师

A *poetry* in Pugs' Main.hs ⇒

Pugs 的 Main.hs 中的英文诗歌 ⇒

A *ship* then new they built for *him*
Of mithril and of elven-glass
With shining prow; no shaven oar
Nor sail *she* bore on silver mast;
The Silmaril as lantern light
And banner bright with living flame
To gleam thereon by Elbereth
Herself was set, who thither came...

众人为彼造新舟，
铸以秘银精灵璃。
船首闪耀何需桨，
银桅未有风帆系。

无双宝钻作灯炬，
旗帜辉煌展生焰。
映照燃星雅碧绿，
神祇乘梭下九天。

-- *唐风*

Perl 6 *translation* ⇒

翻译到 Perl 6 编程语言 ⇒

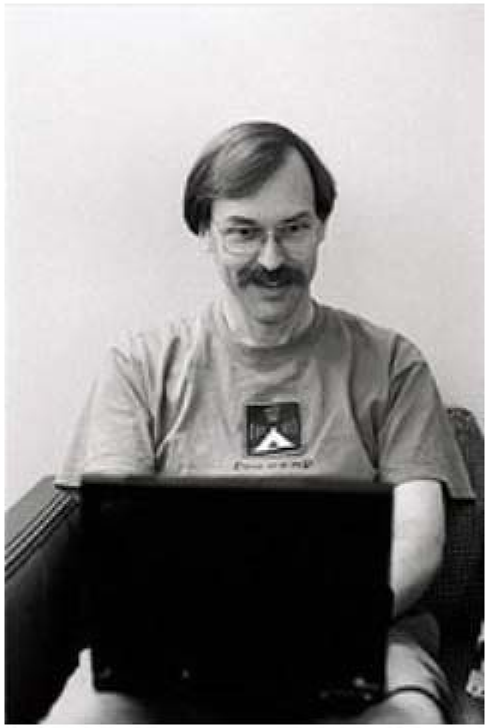
```
use v6 ;
for  $*Larry  {
     our  Ship  $pugs  .=  new (:of <mithril elven-glass> );
     given  $pugs  {
          $.prow   does  Shine;
          Silver  $.mast   but none (Oar::Shaven, Sail);
          Light   $.lantern  :=  $*Silmaril ;
          Bright  $.banner    := Flame.bless:{};
          when   $*Elbereth .gleam {
              .sail(...);
          }
     }
}
```

Top programmers take naming issues very seriously

顶级的程序员对命名问题
非常认真。

as seen on the *#perl6* channel
of irc.freenode.net...

正如在 irc.freenode.net 上的 #perl6 通道里
所看见的那样……


Larry Wall

```
<agentzh>   TimToady++  # JIT syn fixes
<TimToady>  thanks
<TimToady>  I looked at several hundred words
              before picking START.


<章亦春>       (Larry Wall)++  # 即时 Perl 6 文档修改
<Larry Wall>  谢谢
<Larry Wall>  我在挑选出 START 这个名字之前查看了
               几百个单词。
```

Audrey Tang

```
<gaal>  defer? slothlike
<audreyt>  I like "defer"
<audreyt>  gaal++
* audreyt deletes Data::Thunk and uploads Data::Defer
<audreyt>  ...and it's now Scalar::Defer
<audreyt>  naming takes more time than tests+doc+code
```

```
<高浪>  defer 怎么样？有些惰性的味道
<唐凤>  我喜欢“defer”
<唐凤>  高浪++
* 唐凤删除了 Data::Thunk 并上传了 Data::Defer
<唐凤>  ……现在它叫做 Scalar::Defer 了
<唐凤>  命名所花费的时间比测试 + 文档 + 实现代码还要多
```

☆ Follow the naming convention of the language *you* are using and try to be consistent.

遵循你所使用的语言的命名约定，并努力保持一致性。

The problem with being consistent is that there are *lots* of ways to be consistent, and they're all inconsistent with each other.

-- *Larry Wall*

保持一致性的困难在于存在许许多多种不同方式来实现一致性，而且它们彼此之间都是不一致的。

-- *Larry Wall*

```
// C++ STL naming style
vector<string> list;
list.push_back("hello");
while (!list.empty()) {...}
```

```
// Java naming style
List list = new ArrayList();
list.add("hello");
while (!list.isEmpty()) {...}
```

```
 // C# naming style
 ArrayList myAL = new ArrayList();
myAL.Add("hello");
Console.WriteLine(myAL.ToString());
```

☆ Use *meaningful* names

使用*有意义*的名字

```
?   Button button1 = new Button("New");
?   Button button2 = new Button("Open");
?   Button button3 = new Button("Save");
? Button button1 = new Button("New");
? Button button2 = new Button("Open");
? Button button3 = new Button("Save");
```

☹ This is *bad*.

```
? Button button_New  = new Button("New");
? Button button_Open = new Button("Open");
? Button button_Save = new Button("Save");
? Button button_New  = new Button("New");
? Button button_Open = new Button("Open");
? Button button_Save = new Button("Save");
```

☹ This is *ugly*.

```
Button btnNew  = new Button("New");
Button btnOpen = new Button("Open");
Button btnSave = new Button("Save");
Button btnNew   = new Button("New");
Button btnOpen  = new Button("Open");
Button btnSave  = new Button("Save");
```

☺ This is *good*.

The Ugly, the Bad, and the Good

丑的，坏的，好的

☆ Choose *nouns* for your class names

从名词中为你的类取名

dog

```
class Evaluator { ... }
class Solver { ... }
class Withdrawal { ... }
class Evaluator { ... }
class Solver { ... }
class Withdrawal { ... }
```

☺ These are *good*.

? `class Evaluate { ... }`

? `class Solve { ... }`

? `class Withdraw { ... }`

```
?  class Evaluate { ... }
?  class Solve { ... }
?  class Withdraw { ... }
```

☹ These are *bad*.

```perl
# The following class/module names are
# also good:
package CGI::Simple;
package XML::Smart;
package Class::DBI::Sweet;
package Test::Easy;
```

☆ Choose active *verbs* for your method names

从主动动词中为你的方法取名

Home

```
$dbh = DBI.connect('dbi:odbc:qqbase');
$dbh.commit();
$account.update(balance => 100);
```

```
$dbh = DBI.connect('dbi:odbc:qqbase');
$dbh.commit();
$account.update(balance => 100);
```

☺ These are *good*.

? `$dbh = DBI.connection('dbi:odbc:qqbase');`

? `$dbh.committing();`

? `$account.updated(balance => 100);`

```
?   $dbh = DBI.connection('dbi:odbc:qqbase');
?   $dbh.committing();
?   $account.updated(balance => 100);
```

☹ These are *bad*.

☆ Choose *nouns* or *adjectives* for your property names

从名词或者形容词中为你的属性取名

```
@list.length
$persion.name
 if $dbh.available { ... }
 if $set.is_empty;
```

```
@list.length
$persion.name
 if $dbh.available { ... }
 if $set.is_empty;
```

☺ These are *good*.

☆ Use namespaces to split your *verbose* class names.

使用命名空间来分割你冗长的类名。

```
? class Makefile_Parser_AST_Element {
?       ...
? }
? Makefile_Parser_AST_Element elem();
?  class Makefile_Parser_AST_Element {
?      ...
?  }
?  Makefile_Parser_AST_Element elem();
```

☹ This is *ugly*.

```
namespace Makefile::Parser::AST {
    class Element { ... }
}
Makefile::Parser::AST::Element elem();
```

```
namespace Makefile::Parser::AST {
    class Element { ... }
}
Makefile::Parser::AST::Element elem();
```

☺ This is *good*.

☆ Use short names for *common* things.

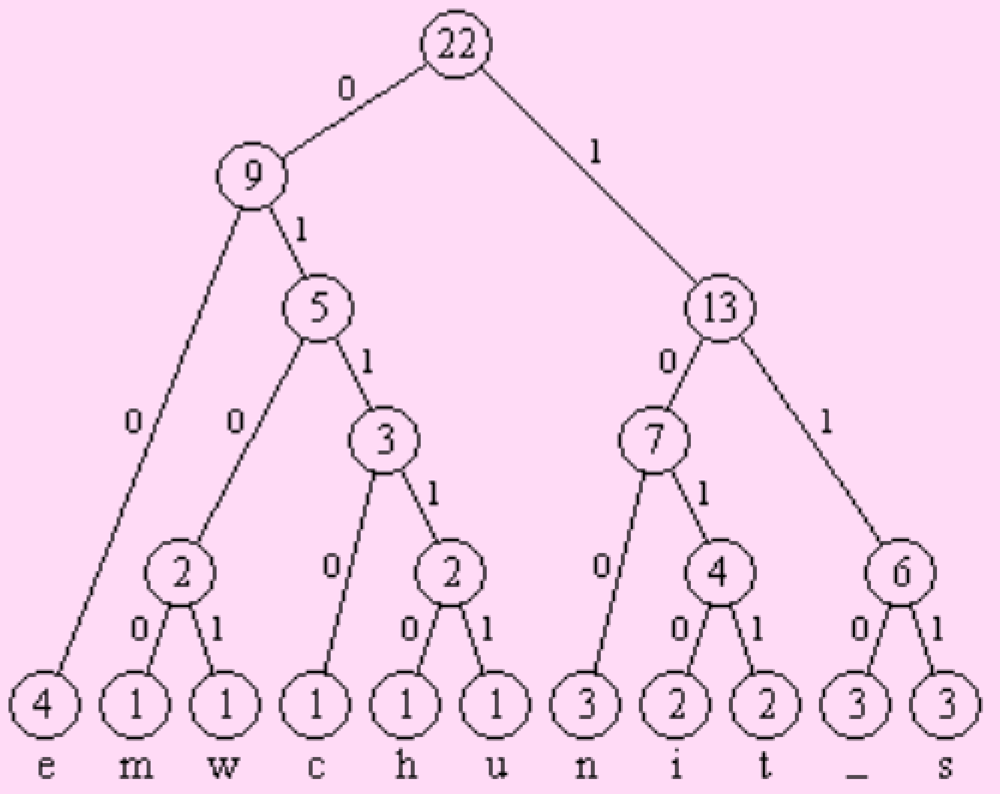
为常用的东西取短名字。

Common operations should be "Huffman coded". That is, frequently used operators should be *shorter* than infrequently used ones.

-- *Larry Wall* (Perl 6 Apocalypse 3)

对常见的操作应该进行“哈夫曼编码”。也就是说，频繁使用的运算符的名称应该比那些不经常使用的要短。

-- *Larry Wall* (Perl 6 启示录 3)



Huffman Coding

```java
// The Java way:
System.out.println("Computing the sum...");
for ( int i = 1; i <= n; i++) {
    sum += i;
    System.out.println(i);
}
System.out.println("Sum: " + sum);
```

```
// The Java way:
System.out.println("Computing the sum...");
for ( int  i = 1; i <= n; i++) {
    sum += i;
    System.out.println(i);
}
System.out.println("Sum: " + sum);
```

☹ This is *ugly*.

```
# The Perl 6 way:
say "Computing the sum...";
for 1..$n -> $i {
    $sum += $i;
    say $i;
}
say "Sum: $sum";
```

```
# The Perl 6 way:
say "Computing the sum...";
for 1..$n -> $i {
    $sum += $i;
    say $i;
}
say "Sum: $sum";
```

☺ This is *good*.

☆ Use short names for *locals*.

为局部变量取短名字。

```
int len = list.length;
for (int i = 0; i < len; i++)
    System.out.println(list[i]);
```

```
int len = list.length;
for ( int i = 0; i < len ; i++)
    System.out.println(list[ i ]);
```

☺ This is *good*.

```
int  length = list.length;
for ( int  index = 0; index < length ; index++)
    System.out.println(list[ index ]);
```

```
int  length  = list.length;
for  ( int  index  = 0; index  <  length ;  index ++)
     System.out.println(list[ index ]);
```

☺ This is *ugly* .

☆ Use descriptive names for *globals*.
(long names are okay.)

为全局结构取描述性的名字。
（长名字也可以。）

? `# Globals in smartlinks.pl:`

? `my ($count, $broken_count);`

```
?   # Globals in smartlinks.pl:
?   my ($count, $broken_count);
```

☹ This is *bad*.

```perl
# Globals in smartlinks.pl:
my ($link_count, $broken_link_count);
```

```perl
# Globals in smartlinks.pl:
my ($link_count, $broken_link_count);
```

☺ This is *better*.

☆ Don't *repeat* yourself.
(The **DRY** principle)

不要重复你自己
（DRY 原则）

```
?   // The Java way:
?   double value = Double.parseDouble("3.14");
```

-
  ```java
  // The Java way:
  ```

-
  ```java
  double value = Double.parseDouble("3.14");
  ```

☹ This is *ugly*.

```csharp
 // The C# way:
double value = double.Parse("3.14");
```

```
// The C# way:
double value = double.Parse("3.14");
```

☹ Just a bit better.

```
// The Perl 6 way:
my  Double $value = "3.14";
```

```
// The Perl 6 way:
my  Double $value = "3.14";
```

☺ This is *good*!

```
// The C/C++ way:
double value = atof("3.14");
```

```
// The C/C++ way:
double value = atof("3.14");
```

☺ This is *good* too,
though a bit fuzzy.

```
class UserQueue {
    int noOfItemsInQ;
    int frontOfTheQueue;
    int queueCapacity;
    public int noOfUsersInQueue() { ... }
}
```

```
?  class UserQueue {
?      int noOfItemsInQ;
?      int frontOfTheQueue;
?      int queueCapacity;
?      public int noOfUsersInQueue() { ... }
?  }
```

☹ This is *ugly*.

```
class UserQueue {
    int nitems;
    int front;
    int capacity;
    public int nusers() { ... }
}
```

```
class UserQueue {
    int nitems;
    int front;
    int capacity;
    public int nusers() { ... }
}
```

☺ This is *good*!

☆ Tell me *more*!
(Don't be handwaving.)

多告诉我一些！
（不要遮遮掩掩。）

```
?   if (check_even(num)) { ... }
?  if (check_even(num)) { ... }
```

☹ Check if it *is* an even number?

```
?   if (check_even(num)) { ... }
```

☹ Check if it *is* an even number?

☹ Check if it *is not* an even number?

```
if (is_even(num)) { ... }
if (is_even(num)) { ... }
```

☺ Now it is *good*!

☆ Improper abbreviations can be *very confusing* .

不恰当的缩写名可能会让人
非常迷糊。

<Sal> what is "JQL"?

<clkao> Jabberwocky Query Language?

<TimToady> Just Quack Loudly?

<audreyt> Junctional Quantum Library?

<仲伟祥> 什么是“JQL”？

<高嘉良> 废话查询语言？

<Larry Wall> 不过是高声吹嘘？

<唐凤> 联结性量子库？

☆ *Widely-used* abbreviations are recommended.

提倡选择
广泛使用的缩写。

var	←	variable
val	←	value
init	←	initialize / initialization
elem	←	element
id	←	identifier
len	←	length
eval	←	evaluate / evaluation
func	←	function
sub	←	subroutine
AST	←	Abstract Syntax Tree

... *and many more*

☆ Chinese Pinyin abbreviations can be *extremely* hateful.

汉语拼音缩写会非常令人讨厌。

http://…/ xs _main.aspx? xh =3030602110#

http://…/ xscj _ gc .aspx? xh =3030602110& xm =章亦春

http://…/ xscxbm .aspx? xh =3030602110& xm =章亦春

http://.../ xs _main.aspx? xh =3030602110#
http://.../ xscj _ gc .aspx? xh =3030602110& xm =章亦春
http://.../ xscxbm .aspx? xh =3030602110& xm =章亦春

xs == 学生 (student) ?

http://.../xs_main.aspx?xh=3030602110#
http://.../xscj_gc.aspx?xh=3030602110&xm=章亦春
http://.../xscxbm.aspx?xh=3030602110&xm=章亦春

xs == 学生 (student) ?
xh == 学号 (student id) ?

http://.../xs_main.aspx?xh=3030602110#
http://.../xscj_gc.aspx?xh=3030602110&xm=章亦春
http://.../xscxbm.aspx?xh=3030602110&xm=章亦春

xs == 学生 (student) ?
xh == 学号 (student id) ?
xm == 姓名 (name) ?

http://.../ xs _main.aspx? xh =3030602110#
http://.../ xscj _ gc .aspx? xh =3030602110& xm =章亦春
http://.../ xscxbm .aspx? xh =3030602110& xm =章亦春

xs == 学生 (student) ?
xh == 学号 (student id) ?
xm == 姓名 (name) ?
xscj == 学生成绩 (student grades) ?

http://.../xs_main.aspx?xh=3030602110#
http://.../xscj_gc.aspx?xh=3030602110&xm=章亦春
http://.../xscxbm.aspx?xh=3030602110&xm=章亦春

xs == 学生 (student) ?
xh == 学号 (student id) ?
xm == 姓名 (name) ?
xscj == 学生成绩 (student grades) ?
xscxbm == 学生重修报名 (XXX) ?

http://.../ xs _main.aspx? xh =3030602110#
http://.../ xscj _ gc .aspx? xh =3030602110& xm =章亦春
http://.../ xscxbm .aspx? xh =3030602110& xm =章亦春

xs == 学生 (student) ?
xh == 学号 (student id) ?
xm == 姓名 (name) ?
xscj == 学生成绩 (student grades) ?
xscxbm == 学生重修报名 (XXX) ?
gc == ???

I'm a Chinese ,
but I still find it *hard* to understand.

我是中国人，
但我发现理解它们仍然很困难。

☆ Avoid potential *ambiguity* and *confusion* .

避免可能的歧义和混淆。

To get the number of elements in an array, use the *.elems* method. You can also ask for the total string length of an array's elements, in bytes, codepoints or graphemes, using these methods *.bytes*, *.codes* or *.graphs* respectively on the array. The same methods apply to strings as well.

There is no *.length* method for either arrays or strings, because length does *not* specify a **unit**.

-- *Larry Wall* (The Perl 6 Synopsis 2)

想得到数组中的元素数目，可以使用 *`.elems`* 方法。你也可以利用 *`.bytes`*、 *`.codes`* 或者 *`.graphs`* 分别以字节、编码点、或者字形为单位来查询数组元素的总长度。字符串也拥有这些方法。

对数组和字符串而言，都不再有 *`.length`* 方法了，因为 **`length`** 并*没有*指明长度单位。

-- *Larry Wall* （Perl 6 纲要 2）

☆ DWIM? Do what *you* mean!

言行一致！

```
?   class  Array {
?        // print out the contents:
?        public void  init() {
?             for  ( int  i = 0; i < this.length; i++)
?                 System.out.println(this.get(i));
?        }
?   }
?   class Array {
?       // print out the contents:
?       public void init() {
?           for ( int i = 0; i < this.length; i++)
?               System.out.println(this.get(i));
?       }
?   }
```

init? emit?

Get the slides today!

♨

http://perlcabal.org/agent/slides/naming/naming.xul

You need Firefox to access the link above.

Contact me on the *web*!

♨

agentzh@gmail.com

These slides are *powered* by Sporx and 😆*Takahashi*++

Thank you!

☺