

# 1. perl语法速查

## 1.1 技巧文章

- [cpan](#)
  - [bit-vector](#)
  - [text-table](#)
- [clipboard复制中文字符到剪切板乱码](#)
- [perl\\_crlf](#)
- [perl向上取整](#)
- [perl打包linux](#)
- [perl打包windows](#)
- [perl非贪婪匹配](#)
- [windows平台perl推荐](#)
- [使用cpanm安装包](#)
- [剪贴板分析工时](#)
- [用perl产生verilog文件](#)

## 1.2 perl单行命令

```
# linux里面可以用"
perl -e "print 0;"
perl -E "print 0;"

perl -e "$i = int(rand(100000)); print $i" # 单行命令产生随机数
```

## 1.3 正则表达式

### 1.3.1 匹配多次

`/a{5,15}/`将匹配5个到15个a中的任意一个（包括5，和15）

`/(fred){3,}/`将在一行中有3个或者更多个fred

`^w{8}/`将严格的匹配8个word

星号(\*)等同于{0,}，表示0个或多个。

加号(+)等同于{1,}，表示1个或多个。

而问号(?)则等同于{0,1}。

### 1.3.2 匹配非

`[^def]`将匹配上这三个字符中之外的任意单个字符

## 1.4 number

浮点数

1.25

255.000

255.0

7.25e45 # 7.25 times 10 to the 45th power (a big number)

-6.5e24 # negative 6.5 times 10 to the 24th  
# (a big negative number)

-12e-24 # negative 12 times 10 to the -24th  
# (a very small negative number)

-1.2E-23 # another way to say that the E may be uppercase

整数

0

2001

-40

255

61298040283768

61\_298\_040\_283\_768 可自动识别下划线，与上面数字相同，方便人眼观察。

0xff # FF hex, also 255 decimal 十六进制数

## 1.5 list

```
@ar = ();
push @ar, $xx;
push @ar, $yy; # 将变量压到数组最后
$aa = shift @ar; # 取出数组第一个元素给变量，数组长度减1
$bb = pop $ar; # 取出数组最后一个元素给变量，数组长度减1
unshift @ar, @add; # 将add数据里面的数据移入ar前面
```

```
@a = (1, 2, 3);
$a = (21, 22, 33);
print "a = $a\n"; # 结果为33,不清楚为什么为这样，不要将数组直接给普通变量
print "a = @a\n";
```

输出：

a = 33

a = 1 2 3

```
@a = ((1, 2), (3, 4));
for $i (@a) {
    print "$i\n";
}
```

输出：

1

```
2
3
4
```

## 1.6 hash

```
%hash = ();

$hash{"a"} = 1;
$hash{"b"} = 2;
$hash{"c"} = 3;

for $key (keys %hash) {
    $value = $hash{$key};
    print "key = $key, value = $value\n";
}

delete $hash{"a"};

for $key (sort keys %hash) {
    $value = $hash{$key};
    print "key = $key, value = $value\n";
}

my @descending = reverse sort { $a <=> $b } @some_numbers;
my @descending = sort { $b <=> $a } @some_numbers;

for $key (sort {$hash{$a} <=> $hash{$b} keys %hash) {
    #按值的升序排列
}
for $key (sort {$hash{$a}->{idx} <=> $hash{$b}->{idx} keys %hash) {
    #按ref值的升序排列
}
for $key (sort {$hash{$b} <=> $hash{$a} keys %hash) {
    #按值的降序排列
}
for $key (sort {$hash{$b}->{idx} <=> $hash{$a}->{idx} keys %hash) {
    #按ref值的降序排列
}
```

## 1.7 reference

### 1.7.1 ref for array

```
@a = (1, 2, 3);
```

```
print "@a\n";      # result: 1 2 3

%hash = ();
$hash{"a"} = \@a; # reference of @a

$ref = $hash{"a"};
print "$ref\n";    # result: ARRAY(0x25d7338)
print "@$ref\n";  # result: 1 2 3
```

```
@a = (1, 2, 3);
@b = (4, 5, 6);
@c = (7, 8, 9);
@o = (\@a, \@b); # 数组放进数组
print "@o\n";
push @o, \@c;
for $i (@o) {
    print "@$i\n";
}
输出：
ARRAY(0x654b20) ARRAY(0x65f568)
1 2 3
4 5 6
7 8 9
```

## 1.7.2 ref for hash

t.pl

```
sub new_block {
    return {
        name => "",
        id => "",
        blk => {},
    }
}

sub new_hash {
    return {
    }
}

$blk = &new_block;
$blk->{name} = "hello";
$blk->{id} = 1;

$blk2 = &new_hash;
$blk2->{a} = "a0";
$blk2->{b} = "b0";

$blk->{blk} = $blk2;
```

```

print "-----\n";
foreach $key (sort keys %{$blk}) {
    print "$key  $blk->{$key}\n";
}
print "\n";

print "-----\n";
foreach $key (sort keys %{$blk->{blk}}) {
    print "$key  $blk->{blk}->{$key}\n";
}
print "\n";

```

运行结果：

```

D:\>perl t.pl
-----
blk  HASH(0x100a950)
id   1
name hello

-----
a    a0
b    b0

```

### 1.7.3 hash包array

```

@a = (1, 2, 3);
@b = (11, 22, 33);
$hash{a} = \@a;
$hash{b} = \@b;
foreach $key (sort keys %hash) {
    $ar_ref = $hash{$key};
    for $i (@{$ar_ref}) {
        print "$i\n";
    }
}
$c = @{$hash{b}}[2]; #输出数组b的第2个值
print "c = $c\n";

```

输出：

```

1
2
3
11
22
33

```

```
c = 33
```

## 1.7.4 array包hash

```
$hash_a{a} = 1;
$hash_b{a} = 2;
@a = (\%hash_a, \%hash_b);
for $i (@a) {
    print "$i\n";
}
for $i (@a) {
    print "$i->{a}\n";
}
```

输出：

```
HASH(0x6efcc0)
HASH(0x6efd20)
```

```
1
2
```

```
$hash_a{a} = 1;
$hash_b{a} = 2;
@a = (%hash_a, %hash_b);
for $i (@a) {
    print "$i\n";
}
```

输出：

```
a
1
a
2
```

```
@ar = ();
sub new_hash {
    return {}
}
for ($i=0; $i<3; $i++) {
    $hash = &new_hash;
    push @ar, $hash;
    $hash->{value} = $i;
    $hash->{value2} = "value_$i";
}
for $i (@ar) {
    print "$i\n";
    print "$i->{value}\n";
    print "$i->{value2}\n";
}
```

输出：

```
HASH(0x1e9520)
```

```
0
value_0
HASH(0x24d42b8)
1
value_1
HASH(0x24d4390)
2
value_2
```

## 1.8 字符串操作

```
"hello" . "world"      # same as "helloworld"
"hello" . ' ' . "world" # same as 'hello world'
'hello world' . "\n"   # same as "hello world\n"

"fred" x 3             # is "fredfredfred"
"barney" x (4+1)      # is "barney" x 5, or "barneybarneybarneybarneybarney"
5 x 4.8               # is really "5" x 4, which is "5555"
```

## 1.9 文件和目录操作

### 1.9.1 读写文件

```
#open读文件
open(my $fh, "<", "input.txt")
  or die "Can't open < input.txt: $!";
and for writing:

#open写文件
open(my $fh, ">", "output.txt")
  or die "Can't open > output.txt: $!";

#close文件
close($handle)
  || warn "close failed: $!";
```

```
#写文件
print $fh "hello\n";

#读文件
while ($line =<$fh) {
  print $line;
}
```

## 1.9.2 readdir

```
# 读目录
my $dir_to_process = '/etc';
opendir my $dh, $dir_to_process or die "Cannot open $dir_to_process: $!";
foreach $file (readdir $dh) {
    print "one file in $dir_to_process is $file\n";
}
closedir $dh;
```

## 1.9.3 删除文件 unlink

```
unlink 'slate', 'bedrock', 'lava';
unlink qw(slate bedrock lava);
unlink glob '*.o';
```

## 1.9.4 rename

```
rename 'old', 'new';
```

## 1.9.5 mkdir rmdir

```
mkdir 'fred', 0755
rmdir $temp_dir;
```

## 1.9.6 chmod

```
chmod 0755, 'fred', 'barney';
```

## 1.9.7 chown

```
chown $user, $group, glob '*.o';
```

## 1.9.8 获取当前目录PATH

有两种方法：

```
use Cwd;
my $dir = getcwd;
#$dir中即为当前目录的完整路径信息。
```

```
my $dir = $ENV{'PWD'};
```

#ENV是一个散列，用于存放环境变量。PWD是Linux的环境变量，表示当前所在目录。

## 1.10 perl处理excel

### 1.10.1 读excel

```
use Spreadsheet::ParseExcel;
use Spreadsheet::ParseXLSX;

if (scalar @ARGV <1) {
    print "usage: perl get_feedthrough.pl xxx.xlsx\n";
    exit 0;
}
$file = shift @ARGV;

# 创建一个解析器对象
if ($file =~ /xlsx/) {
    $parser = Spreadsheet::ParseXLSX->new(); # for xlsx
} else {
    $parser = Spreadsheet::ParseExcel->new(); # for xls
}

# 打开Excel文件并创建一个工作簿对象
$workbook = $parser->parse($file);

# 获取工作表对象
$worksheet = $workbook->worksheet(0);

# 读取单元格数据
$cell = $worksheet->get_cell(2, 1); # 索引值从0开始
if ($cell == under) {
    print "cell = under\n"; # 表格无内容
} else {
    $cell_value = $worksheet->get_cell(2, 1)->value();
    print "Cell A1: $cell_value\n";
}
```

## 1.11 perl处理json

1. use JSON;
2. use Data::Dumper;
3. local \$Data::Dumper::Sortkeys = 1;
- 4.
- 5.
- 6.

```
7.
8. #####      use JSON; # imports encode_json, decode_json, to_json
   and from_json.
9. #####
10. #####     # simple and fast interfaces (expect/generate UTF-8)
11. #####
12. #####     $utf8_encoded_json_text = encode_json
   $perl_hash_or_arrayref;
13. #####     $perl_hash_or_arrayref = decode_json
   $utf8_encoded_json_text;
14. #####
15. #####     # OO-interface
16. #####
17. #####     $json = JSON->new->allow_nonref;
18. #####
19. #####     $json_text  = $json->encode( $perl_scalar );
20. #####     $perl_scalar = $json->decode( $json_text );
21. #####
22. #####     $pretty_printed = $json->pretty->encode( $perl_scalar );
   # pretty-printing
23.
24.
25.
26. my %rec_hash = ('a' => 1, 'b' => 2, 'c' => 3, 'd' => 4, 'e' => 5);
27. my $json = encode_json \%rec_hash;
28. print "$json\n";
29.
30. $ha_ref = decode_json $json;
31.
32. print Dumper($json);
33. print Dumper($ha_ref);
34.
35.
36. # using custom sort function
37. # local $Data::Dumper::Sortkeys = sub { [ sort keys %{@shift} ] };
38.
39. print Dumper {
40.     car => {
41.         '10' => 'y',
42.         '11' => 'y',
43.         '12' => 'y',
44.         '13' => 'y'
45.     },
46.     bus => {
47.         '10' => 'y',
48.         '11' => 'y',
49.         '12' => 'y',
50.         '13' => 'y'
51.     },
52.     tr => {
53.         '10' => 'y',
```

```
54.         '11' => 'y',
55.         '12' => 'y',
56.         '13' => 'y'
57.     }
58. }
```

## UTF8与GBK的转换

```
use Encode;
gbk转uft-8□
$line = encode("utf-8", decode("gbk", $line));
或
$line = encode_utf8(decode("gbk", $line));
utf-8转gbk□
$line = encode("gbk", decode("utf8", $line));
uft-8转gb2312□
$line = encode("gb2312", decode("utf8", $line));
```