

A newline character.

\$ scalar

@ array

% hash

& subroutine

* typeglob

Double quotes perform variable interpolation and backslash interpretation. Single quotes do not.

Back ticks capture the output from executing a command.

" " or 0, as appropriate.

As the expected type, depending on context.

interpolative context

list context

```
@threeprimes = (2, 3, 5);  
($a, $b, $c) = @threeprimes;
```

Either involves a scalar so use \$ not @.

```
$lst[n] = new_el  
print $lst[n]
```



```
@birthmonths = (  
  "John" => "February",  
  "Mary" => "March",  
);
```

Arrows are just a nicer way of writing more arrows.

```
$hash{ "key" }  
$hash{ "key" } = val
```

As with arrays, notice the use of `$` when dealing with individual elements.

Nouns can be singular (scalars) or plural (arrays and hashes).
Verbs can be procedures or functions.

```
perl -e 'some perl'  
perl file.pl
```

The `-w` option prints warnings.

A data type that can represent files, devices, sockets, and pipes.

`STDOUT` and `STDERR` are provided by default.

Use `open`, whose simplest form is:

```
open (HANDLENAME, "filename");
```

Readonly (default): "<filename"

Write (clobber): ">filename"

Write (append): ">>filename"

```
open(FILEHANDLE, "file") or die "Error opening file: $!\n";
```

\$! is the OS's error message.


```
$str = <FILEHANDLE>
```

```
$str = <STDIN>
```

```
print FILEHANDLE 'str'
```

These two are the same:

```
print STDOUT 'str'
```

```
print 'str'
```

`chop` removes the last character of the string passed to it, and returns it.

`chomp` removes `endl` from the string passed to it, and returns the *number* of characters removed.

Use a period (.) for string concatenation.

Because of weak typing addition of scalars created as strings, but that can be interpreted as numbers, would result in a sum.

Use the repeat operator (\times).

- Using the dot operator (like idiomatic Java using +)
- Using interpolation (like idiomatic bash using \$)
- Using list literal syntax

* *

... specially.

In general, the following two are equivalent:

`lval op= expr`

`lval = lval op expr`

The value assigned.

Java

&& - and

|| - or

! - not

The English ones bind less tightly.

There are numeric and string versions.

`==` - `eq`

`!=` - `ne`

`<` - `lt`

`>` - `gt`

`<=` - `le`

The standard "greater or equal" is absent.

Nonstandard, but handy:

`<=>` - `cmp`

- e (exists)
- r (readable)
- w (writable)
- d (directory)
- f (regular file)
- T (text file)

Any string except "" and "0".

Any number except 0.

References evaluate to non-0 addresses.

Undefined values evaluate to 0 or "".

... booleans operators.


```
if (cond1) {  
    #block1  
}  
elseif (cond2) {  
    #block2  
}  
...  
else {  
    #blocknN  
}
```

Braces are *always* required.

```
unless (cond) {  
  #block  
}
```

- while
- until
- for
- foreach

... unless which executes the block as long as the condition is falsy.

```
for ($i = 0; $i < num; $i++) {  
    #body  
}
```

```
foreach $el (@arr) {  
    #body  
}
```

`$el` is by reference, not value, so you can in fact mutate `@arr` by re-assigning `$el`.

next, last, **and** redo.

next **is just like** continue.

last **is just like** break.

redo **executes the same iteration again.**

Block labels, identifying which enclosing looping construction is being referred to.

It depends on context. List context can be provided various ways, including by assigning to a list or by an operator that provides the `LIST` context to its arguments.