NAME

open - perl pragma to set default PerlIO layers for input and output

SYNOPSIS

```
use open IN  => ":crlf", OUT => ":bytes";
use open OUT => ':utf8';
use open IO  => ":encoding(iso-8859-7)";

use open IO  => ':locale';

use open ':encoding(utf8)';
use open ':locale';
use open ':encoding(iso-8859-7)';

use open ':std';
```

DESCRIPTION

Full-fledged support for I/O layers is now implemented provided Perl is configured to use PerlIO as its IO system (which is now the default).

The `open` pragma serves as one of the interfaces to declare default "layers" (also known as "disciplines") for all I/O. Any two-argument open(), readpipe() (aka qx//) and similar operators found within the lexical scope of this pragma will use the declared defaults. Even three-argument opens may be affected by this pragma when they don't specify IO layers in MODE.

With the `IN` subpragma you can declare the default layers of input streams, and with the `OUT` subpragma you can declare the default layers of output streams. With the `IO` subpragma you can control both input and output streams simultaneously.

If you have a legacy encoding, you can use the `:encoding(...)` tag.

If you want to set your encoding layers based on your locale environment variables, you can use the `:locale` tag. For example:

```
$ENV{LANG} = 'ru_RU.KOI8-R';
# the :locale will probe the locale environment variables like LANG
use open OUT => ':locale';
open(O, ">koi8");
print O chr(0x430); # Unicode CYRILLIC SMALL LETTER A = KOI8-R 0xc1
close O;
open(I, "<koi8");
printf "%#x\n", ord(<I>), "\n"; # this should print 0xc1
close I;
```

These are equivalent

```
use open ':encoding(utf8)';
use open IO => ':encoding(utf8)';
```

as are these

```
use open ':locale';
use open IO => ':locale';
```

and these

```
use open ':encoding(iso-8859-7)';
use open IO => ':encoding(iso-8859-7)';
```

The matching of encoding names is loose: case does not matter, and many encodings have several aliases. See *Encode::Supported* for details and the list of supported locales.

When open() is given an explicit list of layers (with the three-arg syntax), they override the list declared using this pragma.

The `:std` subpragma on its own has no effect, but if combined with the `:utf8` or `:encoding` subpragmas, it converts the standard filehandles (STDIN, STDOUT, STDERR) to comply with encoding selected for input/output handles. For example, if both input and out are chosen to be `:encoding(utf8)`, a `:std` will mean that STDIN, STDOUT, and STDERR are also in `:encoding(utf8)`. On the other hand, if only output is chosen to be in `:encoding(koi8r)`, a `:std` will cause only the STDOUT and STDERR to be in `koi8r`. The `:locale` subpragma implicitly turns on `:std`.

The logic of `:locale` is described in full in *encoding*, but in short it is first trying nl_langinfo(CODESET) and then guessing from the LC_ALL and LANG locale environment variables.

Directory handles may also support PerlIO layers in the future.

NONPERLIO FUNCTIONALITY

If Perl is not built to use PerlIO as its IO system then only the two pseudo-layers `:bytes` and `:crlf` are available.

The `:bytes` layer corresponds to "binary mode" and the `:crlf` layer corresponds to "text mode" on platforms that distinguish between the two modes when opening files (which is many DOS-like platforms, including Windows). These two layers are no-ops on platforms where binmode() is a no-op, but perform their functions everywhere if PerlIO is enabled.

IMPLEMENTATION DETAILS

There is a class method in `PerlIO::Layer` `find` which is implemented as XS code. It is called by `import` to validate the layers:

```
PerlIO::Layer::->find("perlio")
```

The return value (if defined) is a Perl object, of class `PerlIO::Layer` which is created by the C code in *perlio.c*. As yet there is nothing useful you can do with the object at the perl level.

SEE ALSO

"binmode" in perlfunc, *"open" in perlfunc*, *perlunicode*, *PerlIO*, *encoding*