

**NAME**

O - Generic interface to Perl Compiler backends

**SYNOPSIS**

```
perl -MO=[-q,]Backend[,OPTIONS] foo.pl
```

**DESCRIPTION**

This is the module that is used as a frontend to the Perl Compiler.

If you pass the `-q` option to the module, then the `STDOUT` filehandle will be redirected into the variable `$O::BEGIN_output` during compilation. This has the effect that any output printed to `STDOUT` by `BEGIN` blocks or use'd modules will be stored in this variable rather than printed. It's useful with those backends which produce output themselves (`Deparse`, `Concise` etc), so that their output is not confused with that generated by the code being compiled.

The `-qq` option behaves like `-q`, except that it also closes `STDERR` after deparsing has finished. This suppresses the "Syntax OK" message normally produced by perl.

**CONVENTIONS**

Most compiler backends use the following conventions: `OPTIONS` consists of a comma-separated list of words (no white-space). The `-v` option usually puts the backend into verbose mode. The `-ofile` option generates output to `file` instead of `stdout`. The `-D` option followed by various letters turns on various internal debugging flags. See the documentation for the desired backend (named `B::Backend` for the example above) to find out about that backend.

**IMPLEMENTATION**

This section is only necessary for those who want to write a compiler backend module that can be used via this module.

The command-line mentioned in the `SYNOPSIS` section corresponds to the Perl code

```
use O ("Backend", OPTIONS);
```

The `O::import` function loads the appropriate `B::Backend` module and calls its `compile` function, passing it `OPTIONS`. That function is expected to return a sub reference which we'll call `CALLBACK`. Next, the "compile-only" flag is switched on (equivalent to the command-line option `-c`) and a `CHECK` block is registered which calls `CALLBACK`. Thus the main Perl program mentioned on the command-line is read in, parsed and compiled into internal syntax tree form. Since the `-c` flag is set, the program does not start running (excepting `BEGIN` blocks of course) but the `CALLBACK` function registered by the compiler backend is called.

In summary, a compiler backend module should be called "B::Foo" for some `foo` and live in the appropriate directory for that name. It should define a function called `compile`. When the user types

```
perl -MO=Foo,OPTIONS foo.pl
```

that function is called and is passed those `OPTIONS` (split on commas). It should return a sub ref to the main compilation function. After the user's program is loaded and parsed, that returned sub ref is invoked which can then go ahead and do the compilation, usually by making use of the `B` module's functionality.

**BUGS**

The `-q` and `-qq` options don't work correctly if perl isn't compiled with `PerlIO` support : `STDOUT` will be closed instead of being redirected to `$O::BEGIN_output`.

**AUTHOR**

Malcolm Beattie, [mbeattie@sable.ox.ac.uk](mailto:mbeattie@sable.ox.ac.uk)