Irony

Irony is a C/C++ minor mode based on *libclang*, which aims context-sensitive completion and syntax checking using the clang compiler. To do so the following packages from (M)ELPA are needed:

- *irony*,
- *company-irony* (context-sensitive completion)
- *company-irony-c-headers* (header file name completion)
- *flycheck* (generic syntax checker)
- *flycheck-irony* (C/C++ syntax checking with *clang*)

But secondly (to get all that stuff working) the clang compiler must know the exact command line options. For that purpose a so called Compiler Database (CDB) must exist in a (sub-) directory, from `irony-cdb-search-directory-list`. For details on that issue see:

- https://github.com/Sarcasm/irony-mode#Compilation-Database,
- https://sarcasm.github.io/notes/dev/compilation-database.html,
- variable `irony-cdb-compilation-databases`

Sometimes i simply use a static `.clang_complete` file in project root directory, according to this one:

```
-std=c99
-Wall
-Wextra
-DDEBUG
-D_DEBUG_
-D_GNU_SOURCE
-D_REENRANT
-I.
-I./include
-I/usr/include
-I/usr/include/clang/3.8/include
-I/usr/include/gsl
-I/usr/include/glib-2.0
-I/usr/include/cairo
-I/usr/include/pango-1.0
-I/usr/include/gtk-3.0
```



When (fly) checking C++ source files including C++ header files named `*.h` (or C++ header files w/o an extension) then option `-D__cplusplus=201103L` (example for C++11) might be needed.

In case a project is using *CMake* then a file `compile_commands.json` can be generated on each build. For that purpose one has simply to add the following line to `CMakeLists.txt`:

```
set(CMAKE_EXPORT_COMPILE_COMMANDS ON)
```

More information on *Irony* setup can be found on:

- Zuogong Yue: Emacs as C++ IDE,
- Nils Deppe: Using Emacs as a C++ IDE,
- Gregory J. Stein: C/C++ Completion In Emacs,
- Soonho Kong: How to Setup emacs irony-mode in Ubuntu-12.04,
- Martin Törnqvist: How to Setup emacs `irony-mode` in Ubuntu-12.04,
- Stack Exchange: Add include paths to flycheck and to company-irony?

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