

CMake

Pin Loon Lee
21/7/2021

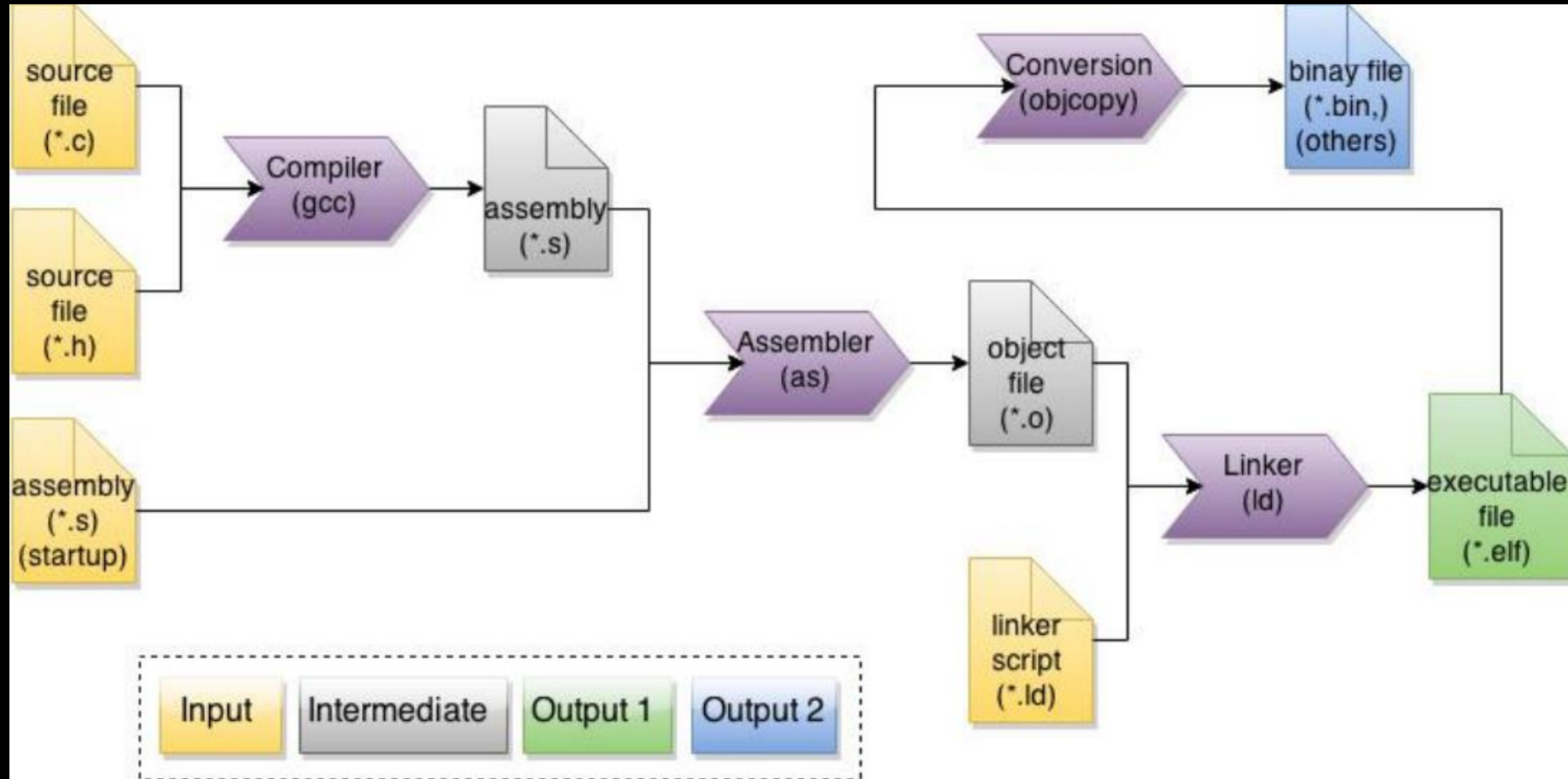
Let's start with the basic

Normally in IDE, there are 2 main steps:

1. build/compile
2. debug/run/flash

So, what is done behind the scene?

Build process in C/C++



Demo of simple program

Let's try tutorial1 program consisted of just 4 lines of code!

What is Cmake?

- cross-platform free and open-source software
- for build automation, testing, packaging and installation of software by using a compiler-independent method.
- CMake is not a build system but rather it generates another system's build files

Demo of simple program

Let's try tutorial2 program which includes other directory!

Examples of Cmake commands

- `add_subdirectory()`
- `add_executable()`
- `add_library()`
- `add_custom_command()`
- `add_custom_target()`

- `target_include_directories()`
- `target_link_libraries()`
- `target_compile_options()`

Examples of Cmake commands

- `include()`
- `macro()`
- `file()`
- `list()`

- `get_filename_component()`

FAQ

1. For microcontroller application, why we don't use IDE? Since it is easy and fast to start?
 - > Higher flexibility (board target, robot)
 - > Code reusability (driver, control logic)
 - > Better control for environment
2. Where should the CMakeLists.txt file be located?
 - > Depends on the application, for every subdirectory added using `add_subdirectory()`, the folder should contains CMakeLists.txt
3. Why there are a lot of CMakeLists.txt files?
 - > To make each folder as a single component and thus easier to be reused, more flexible and cleaner

Q & A

Thank you for your time