Help! I want people to use my CMake pa

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CMake is a portable build system that is becoming a *de facto* standard for
C++ package management.
Also usable with C and Fortran.

Table of contents

Make your package discoverable

Some packages come with `FindWhatever.cmake` or similar files.
Pity that there is not just one standard.
These define some macros, but you need to read the docs to see which.
Pity that there is not just one standard.
Some examples follow.

```
1  cmake_minimum_required( VERSION 3.12 )
2  project( cxxprogram VERSION 1.0 )
3
4  add_executable( ${PROJECT_NAME} ${PROJECT_NAME}.cxx )
5  find_package( MPI )
6  target_include_directories(
7          ${PROJECT_NAME} PUBLIC
8          ${MPI_C_INCLUDE_DIRS} ${CMAKE_CURRENT_SOURCE_DIR} )
9  target_link_libraries(
10         ${PROJECT_NAME} PUBLIC
11         ${MPI_C_LIBRARIES} )
12
13 install( TARGETS ${PROJECT_NAME} DESTINATION . )
```

```
1  cmake_minimum_required( VERSION 3.12 )
2  project( ${PROJECT_NAME} VERSION 1.0 )
3
4  enable_language(Fortran)
5
6  find_package( MPI )
7
8  if( MPI_Fortran_HAVE_F08_MODULE )
9  else()
10   message( FATAL_ERROR "No f08 module for this MPI" )
11 endif()
12
13 add_executable( ${PROJECT_NAME} ${PROJECT_NAME}.F90 )
14 target_include_directories(
15         ${PROJECT_NAME} PUBLIC
16         ${MPI_Fortran_INCLUDE_DIRS} ${CMAKE_CURRENT_SOURCE_DIR}
         )
17 target_link_directories(
18         ${PROJECT_NAME} PUBLIC
19         ${MPI_LIBRARY_DIRS} )
20 target_link_libraries(
21         ${PROJECT_NAME} PUBLIC
```

```
1  cmake_minimum_required( VERSION 3.12 )
2  project( ompprogram VERSION 1.0 )
3
4  find_package(OpenMP)
5  if(OpenMP_CXX_FOUND)
6  else()
7          message( FATAL_ERROR "Could not find OpenMP" )
8  endif()
9
10 add_executable( program program.cxx )
11 target_link_libraries( program
12     PUBLIC OpenMP::OpenMP_CXX)
13
14 install( TARGETS program DESTINATION . )
```

CMake creates makefiles;
makefiles ensure minimal required compilation

```
cmake             ## make the makefiles
make              ## compile your project
emacs onefile.c   ## edit
make              ## minimal recompile
```

Only if you add (include) files do you rerun CMake.