

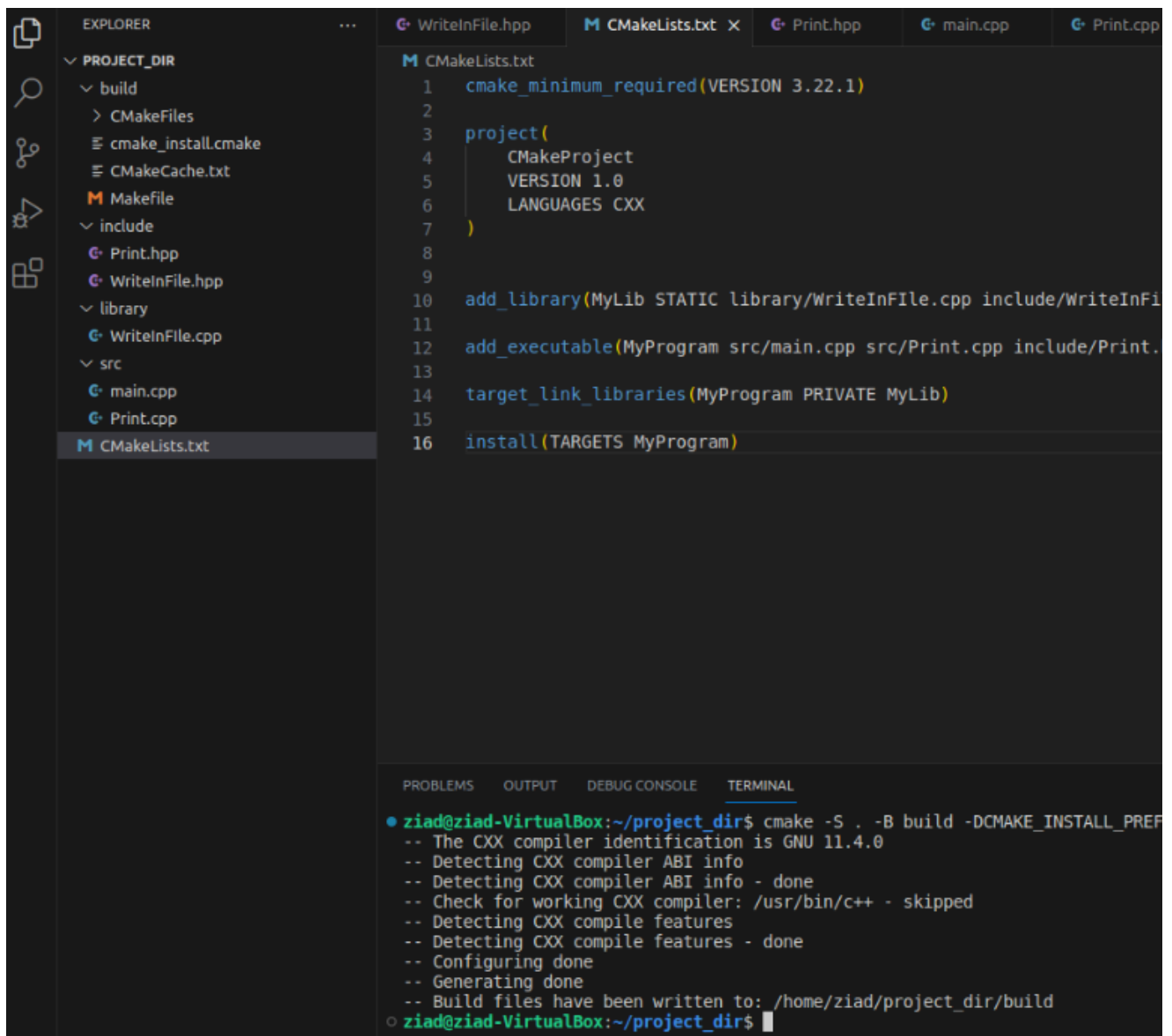
# CMake Task

By : Ziad Ahmed Ibrahim

Requirements: build a project using Cmake

## Building steps

### 1) generate the makefile



The screenshot shows the Visual Studio Code interface. On the left, the Explorer panel displays the project structure: PROJECT\_DIR, build (containing CMakeFiles), include, library, and src. The CMakeLists.txt file is selected in the Explorer and also in the editor. The editor shows the following CMakeLists.txt content:

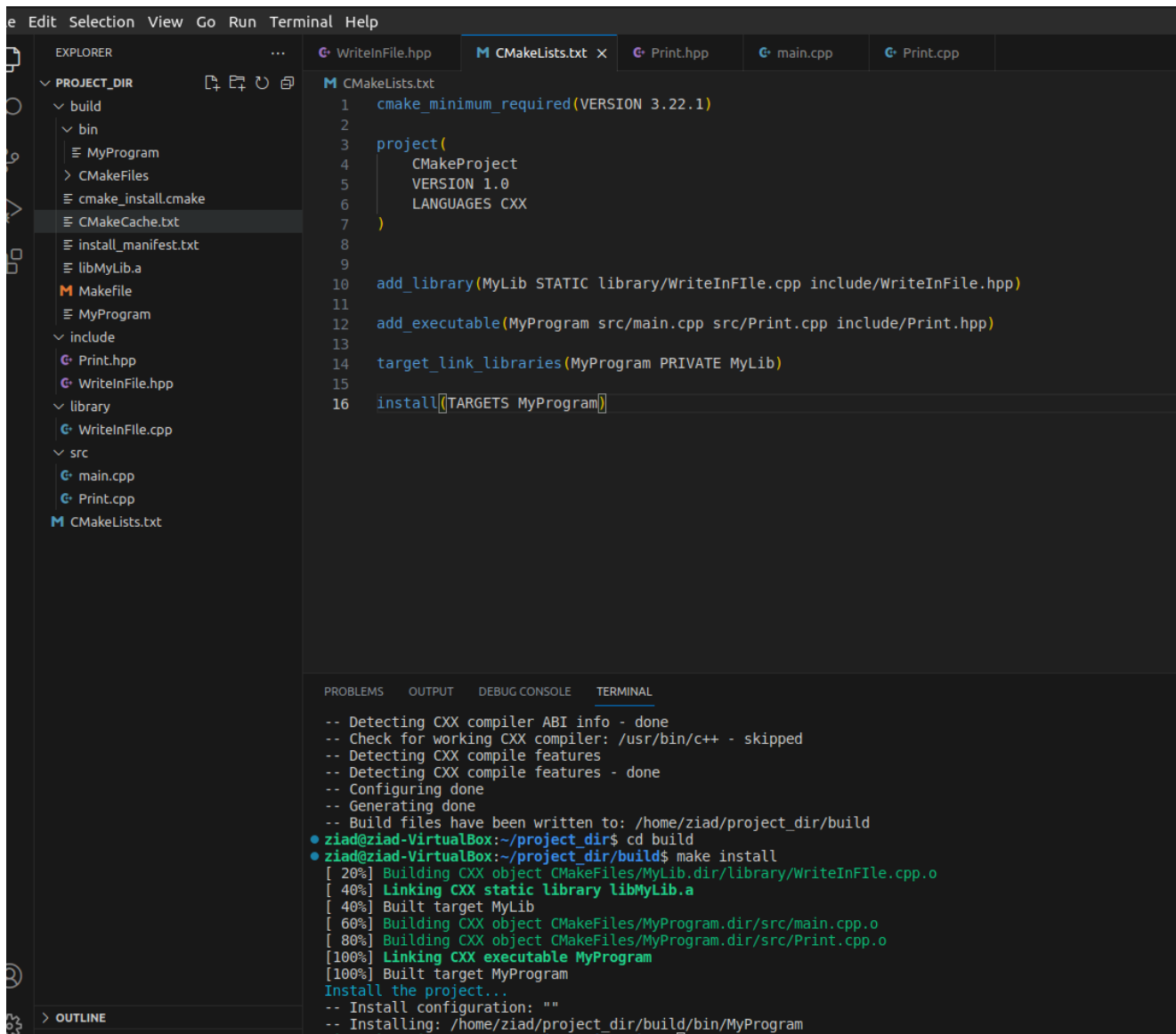
```
1 cmake_minimum_required(VERSION 3.22.1)
2
3 project(
4     CMakeProject
5     VERSION 1.0
6     LANGUAGES CXX
7 )
8
9
10 add_library(MyLib STATIC library/WriteInFile.cpp include/WriteInFi
11
12 add_executable(MyProgram src/main.cpp src/Print.cpp include/Print.
13
14 target_link_libraries(MyProgram PRIVATE MyLib)
15
16 install(TARGETS MyProgram)
```

At the bottom, the TERMINAL panel shows the output of the command `cmake -S . -B build -DCMAKE_INSTALL_PREFIX=~/project_dir`:

```
ziad@ziad-VirtualBox:~/project_dir$ cmake -S . -B build -DCMAKE_INSTALL_PREFIX=~/project_dir
-- The CXX compiler identification is GNU 11.4.0
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Check for working CXX compiler: /usr/bin/c++ - skipped
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- Configuring done
-- Generating done
-- Build files have been written to: /home/ziad/project_dir/build
ziad@ziad-VirtualBox:~/project_dir$
```

- execute `cmake -S . -B build -DCMAKE_INSTALL_PREFIX=~/build/`

### 2) Build the project



- `make install`

### 3) Execute the binary

```
-- Installing: /home/ziad/project_dir/build/bin/MyProgram
● ziad@ziad-VirtualBox:~/project_dir/build$ cd bin
● ziad@ziad-VirtualBox:~/project_dir/build/bin$ ./MyProgram -c
hello world
○ ziad@ziad-VirtualBox:~/project_dir/build/bin$
```

File

Edit

Selection

View

Go

Run

Terminal

Help

EXPLOER

PROJECT\_DIR

build

bin

helloworld.txt

MyProgram

CMakeFiles

cmake\_install.cmake

CMakeCache.txt

install\_manifest.txt

libMyLib.a

Makefile

MyProgram

include

Print.hpp

WriteInFile.hpp

library

WriteInFile.cpp

src

main.cpp

Print.cpp

CMakeLists.txt

WriteInFile.hpp

CMakeLists.txt

Print.hpp

main.cpp

CMakeLists.txt

1 cmake\_minimum\_required(VERSION 3.22.1)

2

3 project(

4 CMakeProject

5 VERSION 1.0

6 LANGUAGES CXX

7 )

8

9

10 add\_library(MyLib STATIC library/WriteInFile.cpp include/Wri

11

12 add\_executable(MyProgram src/main.cpp src/Print.cpp include/

13

14 target\_link\_libraries(MyProgram PRIVATE MyLib)

15

16 install(TARGETS MyProgram)

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

-- Generating done

-- Build files have been written to: /home/ziad/project\_dir/build

● ziad@ziad-VirtualBox:~/project\_dir\$ cd build

● ziad@ziad-VirtualBox:~/project\_dir/build\$ make install

[ 20%] Building CXX object CMakeFiles/MyLib.dir/library/WriteInFile.c

[ 40%] Linking CXX static library libMyLib.a

[ 40%] Built target MyLib

[ 60%] Building CXX object CMakeFiles/MyProgram.dir/src/main.cpp.o

[ 80%] Building CXX object CMakeFiles/MyProgram.dir/src/Print.cpp.o

[100%] Linking CXX executable MyProgram

[100%] Built target MyProgram

Install the project...

-- Install configuration: ""

-- Installing: /home/ziad/project\_dir/build/bin/MyProgram

● ziad@ziad-VirtualBox:~/project\_dir/build\$ cd bin

● ziad@ziad-VirtualBox:~/project\_dir/build/bin\$ ./MyProgram -c

hello world

● ziad@ziad-VirtualBox:~/project\_dir/build/bin\$ ./MyProgram -f

● ziad@ziad-VirtualBox:~/project\_dir/build/bin\$ cat helloworld.txt

○ hello Worldziad@ziad-VirtualBox:~/project\_dir/build/bin\$

## Project tree

- ✓ include
  - Print.hpp
  - WriteInFile.hpp
- ✓ library
  - WriteInFile.cpp
- ✓ src
  - main.cpp
  - Print.cpp
- CMakeLists.txt