

Задания 1

1. Создание CMakeLists.txt

```
cmake_minimum_required(VERSION 3.10)
project(formatter)
set(CMAKE_CXX_STANDARD 14)
set(CMAKE_CXX_STANDARD_REQUIRED ON)
add_library(formatter STATIC ${CMAKE_CURRENT_SOURCE_DIR}/formatter.cpp)
include_directories(${CMAKE_CURRENT_SOURCE_DIR}/include) █
```

2. Билд проекта

```
theblindpew@MacBook-Pro-Vladislav formatter_lib % vi CMakeLists.txt
theblindpew@MacBook-Pro-Vladislav formatter_lib % cmake -H. -B_build
-- Configuring done
-- Generating done
-- Build files have been written to: /Users/theblindpew/Lab03_TIMP/formatter_lib/_build
theblindpew@MacBook-Pro-Vladislav formatter_lib % cmake --build _build
[ 50%] Building CXX object CMakeFiles/formatter.dir/formatter.cpp.o
[100%] Linking CXX static library libformatter.a
[100%] Built target formatter
theblindpew@MacBook-Pro-Vladislav formatter_lib % ls _build
CMakeCache.txt      CMakeFiles          Makefile            cmake_install.cmake  libformatter.a
theblindpew@MacBook-Pro-Vladislav formatter_lib % ls _build/libformatter.a
_build/libformatter.a
```

Задание 2

1. Автосборка проекта

```
theblindpew@MacBook-Pro-Vladislav formatter_ex_lib % cat > CMakeLists.txt <<EOF
cmake_minimum_required(VERSION 3.10)
project(formatter_ex)
EOF
```

2. Параметры языка и присваивание пути переменной (для удобства)

```
theblindpew@MacBook-Pro-Vladislav formatter_ex_lib % cat >> CMakeLists.txt <<EOF
set(CMAKE_CXX_STANDARD 14)
set(CMAKE_CXX_STANDARD_REQUIRED ON)
set(CMAKE_CURRENT_SOURCE_DIR /Home//Heinene/workspace/projects/lab03dz)
EOF
```

3. Пофиксил ошибки, которые возникли при использовании команды cat

```
cmake_minimum_required(VERSION 3.10)
project(formatter_ex)
set(CMAKE_CXX_STANDARD 14)
set(CMAKE_CXX_STANDARD_REQUIRED ON)
set(CMAKE_CURRENT_SOURCE_DIR /Users/theblindpew/Lab03_TIMP)
add_library(formatter_ex STATIC ${CMAKE_CURRENT_SOURCE_DIR}/formatter_ex_lib/formatter_ex.cpp)
include_directories(${CMAKE_CURRENT_SOURCE_DIR})
include_directories(${CMAKE_CURRENT_SOURCE_DIR}/formatter_lib)
target_link_libraries(formatter_ex formatter)
~
~
```

4. Сборка библиотеки

```
theblindpew@MacBook-Pro-Vladislav formatter_ex_lib % cmake --build _build
-- Configuring done
-- Generating done
-- Build files have been written to: /Users/theblindpew/Lab03_TIMP/formatter_ex_lib/_build
[ 50%] Building CXX object CMakeFiles/formatter_ex.dir/formatter_ex.cpp.o
[100%] Linking CXX static library libformatter_ex.a
[100%] Built target formatter_ex
theblindpew@MacBook-Pro-Vladislav formatter_ex_lib % █
```

5. Проверил наличие исполняемого файла .a

```
theblindpew@MacBook-Pro-Vladislav formatter_ex_lib % ls
CMakeLists.txt      _build              formatter_ex.cpp      formatter_ex.h
theblindpew@MacBook-Pro-Vladislav formatter_ex_lib % ls _build
CMakeCache.txt      CMakeFiles          Makefile            cmake_install.cmake  libformatter_ex.a
theblindpew@MacBook-Pro-Vladislav formatter_ex_lib % ls _build/libformatter_ex.a
_build/libformatter_ex.a
```

Задание 3

1. Автосборка проекта

```
theblindpew@MacBook-Pro-Vladislav Lab03_TIMP % cd hello_world_application
theblindpew@MacBook-Pro-Vladislav hello_world_application % cat > CMakeLists.txt <<EOF
heredoc> cmake_minimum_required(VERSION 3.10)
heredoc> project(hello_world)
heredoc> EOF
```

2. Параметры языка и присваивание пути

```
theblindpew@MacBook-Pro-Vladislav hello_world_application % cat >> CMakeLists.txt <<EOF
heredoc> set(CMAKE_CXX_STANDARD 14)
heredoc> set(CMAKE_CXX_STANDARD_REQUIRED ON)
heredoc> set(CMAKE_CURRENT_SOURCE_DIR /Users/theblindpew/Lab03_TIMP)
heredoc> EOF
```

3. Итоговый файл

```
cmake_minimum_required(VERSION 3.10)
project(hello_world)
set(CMAKE_CXX_STANDARD 14)
set(CMAKE_CXX_STANDARD_REQUIRED ON)
set(CMAKE_CURRENT_SOURCE_DIR /Users/theblindpew/Lab03_TIMP)
add_executable(hello_world ${CMAKE_CURRENT_SOURCE_DIR}/hello_world_application/hello_world.cpp)
include_directories(${CMAKE_CURRENT_SOURCE_DIR}/formatter_lib ${CMAKE_CURRENT_SOURCE_DIR}/formatter_ex_lib)
find_library(formatter NAMES libformatter.a PATHS ${CMAKE_CURRENT_SOURCE_DIR}/formatter_lib)
find_library(formatter_ex NAMES libformatter_ex.a PATHS ${CMAKE_CURRENT_SOURCE_DIR}/formatter_ex_lib)
target_link_libraries(hello_world ${CMAKE_CURRENT_SOURCE_DIR}/formatter_lib/_build/libformatter.a ${CMAKE_CURRENT_SOURCE_DIR}/formatter_ex_lib/_build/libformatter_ex.a)
~
```

4. Билд проекта

```
theblindpew@MacBook-Pro-Vladislav hello_world_application % vi CMakeLists.txt
theblindpew@MacBook-Pro-Vladislav hello_world_application % cmake --build _build
-- Configuring done
-- Generating done
-- Build files have been written to: /Users/theblindpew/Lab03_TIMP/hello_world_application/_build
Consolidate compiler generated dependencies of target hello_world
[ 50%] Linking CXX executable hello_world
[100%] Built target hello_world
```

5. Запуск проекта

```
theblindpew@MacBook-Pro-Vladislav hello_world_application % _build/hello_world
hello, world!
```

6. Итоговый файл (solve_app)

```
cmake_minimum_required(VERSION 3.10)
project(solver_app)
set(CMAKE_CXX_STANDARD 14)
set(CMAKE_CXX_STANDARD_REQUIRED ON)
set(CMAKE_CURRENT_SOURCE_DIR /Users/theblindpew/Lab03_TIMP)
add_executable(solver_app ${CMAKE_CURRENT_SOURCE_DIR}/solver_application/equation.cpp)
include_directories(${CMAKE_CURRENT_SOURCE_DIR}/formatter_lib ${CMAKE_CURRENT_SOURCE_DIR}/formatter_ex_lib ${CMAKE_CURRENT_SOURCE_DIR}/solver_lib)
find_library(formatter NAMES libformatter.a PATHS ${CMAKE_CURRENT_SOURCE_DIR}/formatter_lib)
find_library(formatter_ex NAMES libformatter_ex.a PATHS ${CMAKE_CURRENT_SOURCE_DIR}/formatter_ex_lib)
find_library(solver_lib NAMES libsolver_lib.a PATHS ${CMAKE_CURRENT_SOURCE_DIR}/solver_lib)
target_link_libraries(solver_app ${CMAKE_CURRENT_SOURCE_DIR}/formatter_lib/_build/libformatter.a ${CMAKE_CURRENT_SOURCE_DIR}/formatter_ex_lib/_build/libformatter_ex.a ${CMAKE_CURRENT_SOURCE_DIR}/solver_lib/_build/libsolver_lib.a)
~
```

7. Сборка

```
theblindpew@MacBook-Pro-Vladislav solver_application % cmake -H. -B_build
-- Configuring done
-- Generating done
-- Build files have been written to: /Users/theblindpew/Lab03_TIMP/solver_application/_build
theblindpew@MacBook-Pro-Vladislav solver_application % cmake --build _build
[ 50%] Building CXX object CMakeFiles/solver_app.dir/equation.cpp.o
[100%] Linking CXX executable solver_app
[100%] Built target solver_app
```

8. Запуск программы

```
theblindpew@MacBook-Pro-Vladislav solver_application % _build/solver_app
1 5 1
-----
x1 = -4.791288
-----
x2 = -0.208712
-----
```