Computer Graphics

Exercises 4

1) Impelment the ImGui library for prototyping UI. Use the following CMake snippet:

```
FetchContent_Declare(imgui
    GIT_REPOSITORY "https://github.com/ocornut/imgui.git"
    GIT_TAG "v1.91.5"
    GIT_SHALLOW ON)
FetchContent_MakeAvailable(imgui)
target_include_directories(${PROJECT_NAME} PRIVATE
    "${imgui_SOURCE_DIR}/"
    "${imgui_SOURCE_DIR}/backends")
target_sources(${PROJECT_NAME} PRIVATE
    "${imgui_SOURCE_DIR}/imgui.cpp"
    "${imgui_SOURCE_DIR}/imgui_draw.cpp"
    "${imgui_SOURCE_DIR}/imgui_demo.cpp"
    "${imgui_SOURCE_DIR}/imgui_tables.cpp"
    "${imgui_SOURCE_DIR}/imgui_widgets.cpp"
    "${imgui_SOURCE_DIR}/backends/imgui_impl_sdl3.cpp"
    "${imgui_SOURCE_DIR}/backends/imgui_impl_opengl3.cpp")
```

Use the implementation guide located at
https://github.com/ocornut/imgui/wiki/Getting-Started#example-if-you-are-using-sdl2--openglwebgl
to implement it (use section “Example: If you are using SDL2 + OpenGL/WebGL“) . Take care to to use sdl 3 instead of 2 where appropriate. Try the following snippet to render a simple FPS display:

```
ImGui::Begin("FPS window");
ImGui::Text("%.1f fps", ImGui::GetIO().Framerate);
ImGui::End();
```

2) Render a second cube using vertex colors rather than the texture. There are many ways to approach this, but the recommended way is to create a second set of shaders, another pipeline, mesh and transform. Binding order of these will be important!