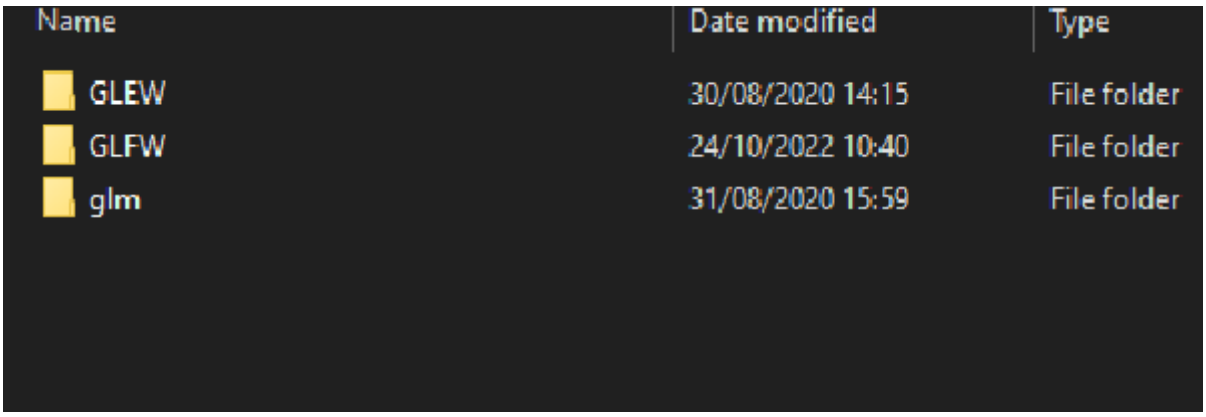
Deep Dive Open - Installation Guide

This document will serve as a guide on installing the project that contains the engine's code and all of its resources in order to either modify it directly or add new content such as custom defined AI games.

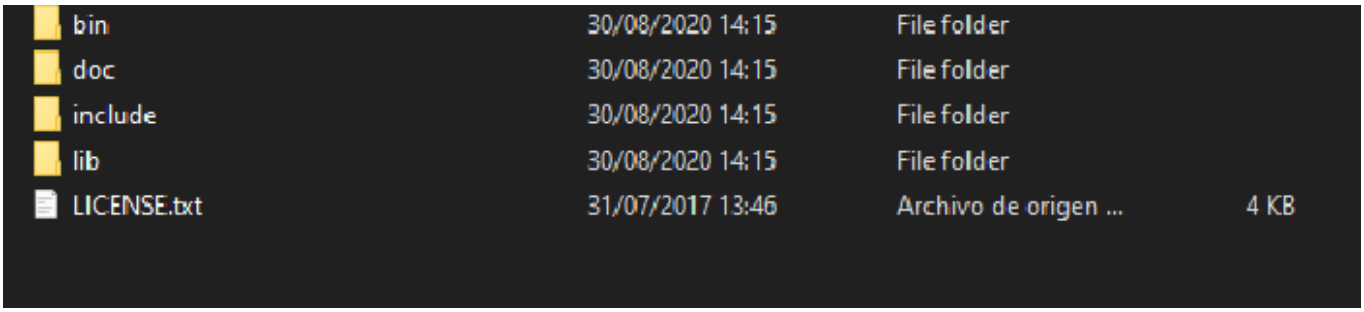
First of all, the following requirements should be downloaded and installed in their proper places:

- **Visual Studio (2019)**. For opening the project that contains the engine's code.
- **OpenGL**
- **ArrayFire**. It is important to write down its installation directory as it will be used later in this document.
- **Library stb_image.h**. Must be installed in "\Deep dive open\code\Externalcode", being the root directory of this address the root directory of the project. Do not remove the stb_image.cpp file found already in said directory.
- Install the following extensions of OpenGL under the "Dependencies" folder located in the rooth of the project's directory structure.
    - **OpenGL Extension Wrangler Library (GLEW)**
    - **GLFW**
    - **OpenGL Mathematics (GLM)**

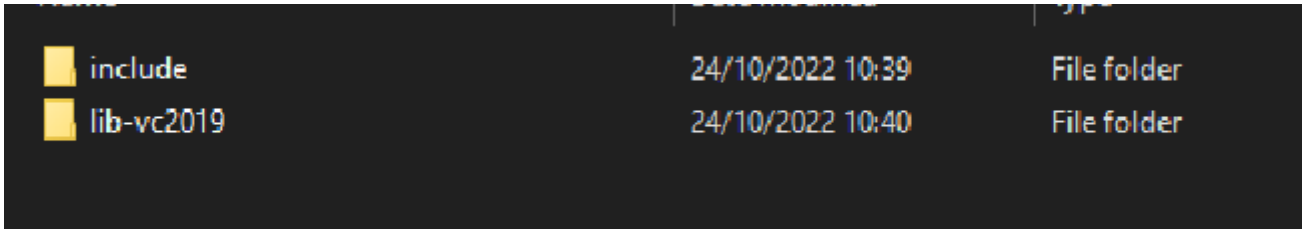
The "Dependencies" folder should look like the following image:



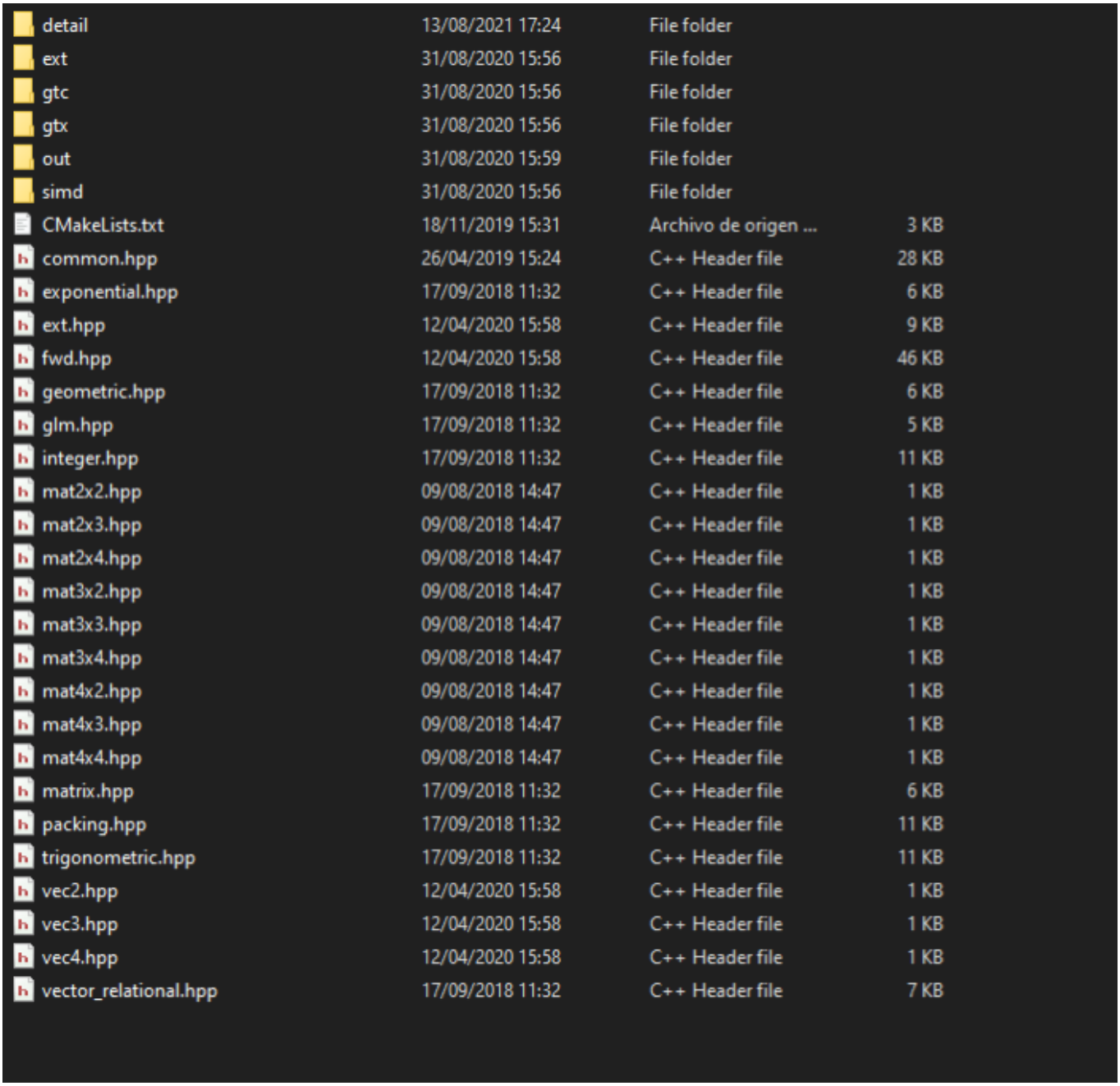
The GLEW folder should look similar to the following screenshot:



The GLFW folder should have a similar appearance to the picture below:



The GLM folder should be like the next figure:



detail	13/08/2021 17:24	File folder	
ext	31/08/2020 15:56	File folder	
gtc	31/08/2020 15:56	File folder	
gtx	31/08/2020 15:56	File folder	
out	31/08/2020 15:59	File folder	
simd	31/08/2020 15:56	File folder	
CMakeLists.txt	18/11/2019 15:31	Archivo de origen ...	3 KB
common.hpp	26/04/2019 15:24	C++ Header file	28 KB
exponential.hpp	17/09/2018 11:32	C++ Header file	6 KB
ext.hpp	12/04/2020 15:58	C++ Header file	9 KB
fwd.hpp	12/04/2020 15:58	C++ Header file	46 KB
geometric.hpp	17/09/2018 11:32	C++ Header file	6 KB
glm.hpp	17/09/2018 11:32	C++ Header file	5 KB
integer.hpp	17/09/2018 11:32	C++ Header file	11 KB
mat2x2.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat2x3.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat2x4.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat3x2.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat3x3.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat3x4.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat4x2.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat4x3.hpp	09/08/2018 14:47	C++ Header file	1 KB
mat4x4.hpp	09/08/2018 14:47	C++ Header file	1 KB
matrix.hpp	17/09/2018 11:32	C++ Header file	6 KB
packing.hpp	17/09/2018 11:32	C++ Header file	11 KB
trigonometric.hpp	17/09/2018 11:32	C++ Header file	11 KB
vec2.hpp	12/04/2020 15:58	C++ Header file	1 KB
vec3.hpp	12/04/2020 15:58	C++ Header file	1 KB
vec4.hpp	12/04/2020 15:58	C++ Header file	1 KB
vector_relational.hpp	17/09/2018 11:32	C++ Header file	7 KB

Once all of this is properly done, open the .sln file found at the project's directory.

In case the project options were not configured properly, the user needs to do the following:

1. Once the project is opened in visual studio, go to Project → Deep dive open properties → C/C++ → General → Additional include directories. Then, add the following paths:
    - Arrayfire's installation path\v3\include(for example, in the writer's computer this path is C:\Program Files\ArrayFire\v3\include)
    - $(SolutionDir)Dependencies\GLFW\include
    - $(SolutionDir)Dependencies\glm\gtc

    - $(SolutionDir)Dependencies\glm
    - $(SolutionDir)Dependencies\GLEW\include
    - $(SolutionDir)Dependencies\glm\gtx
2. While still being in C/C++, go to Preprocessor and add the following: NOMINMAX;GLEW_STATIC
3. Go to C/C++→Code Generation and set the Runtime Library option to Multi-threaded (/MT) and go to C/C++→Language and set the C++ Language Standard option to ISO C++20 Standard (/std::c++20).
4. Go to Linker instead of C/C++ and in General→Additional Library Directories add the following:
    - -$(SolutionDir)Dependencies\GLEW\lib\Release\x64
    - -$(SolutionDir)Dependencies\GLFW\lib-vc2019
    - -$(AF_PATH)\v3\lib (for example, in the writer's computer this path is C:\Program Files\ArrayFire\v3\lib)
5. In General, set the Use library dependency inputs to No.
6. In Linker→Input, add the following to Additional Dependencies:
    - glew32s.lib
    - glfw3_mt.lib
    - opengl32.li
    - User32.lib
    - Gdi32.lib
    - Shell32.lib
    - afcuda.lib