

OpenGL Setup for Code::Blocks

Code::Blocks is GNU's free alternative to Visual Studio. It has fewer features and is easier to use.

Download the binary release of Code::Blocks (which will include mingw32 compiler/linker) and install.

Set the system path for where the MinGW compiler is installed:

Control Panel → System → Advanced system → Environment Variables

For the Mac

Apple no longer supports modern OpenGL. To work with OpenGL on a Mac, programmers should run Boot Camp Assistant (free software) to install MS Windows; this will allow access to OpenGL drivers. For good performance, it may be advisable to allocate more than the minimum storage required for Boot Camp.

If your Mac is of M1 architecture (introduced in 2020) you will be unable to run Boot Camp and unable to use the OpenGL API. Most OpenGL exercises should translate to Apple's graphics API, Metal.

For Windows and Linux Machines and Macs running Bootcamp

Copy Source Files

Let's suppose your name is Robin, and your graphics work is in C:/Users/Robin/Graphics.

From Downloads.zip, copy the Include subdirectory to C:/Users/Robin/Graphics.

Create a subdirectory C:/Users/Robin/Graphics/Lib, and copy to it from Downloads.zip/Lib the files GLXtras.cpp and glad.c.

Create a subdirectory Graphics/Apps, and copy to it the two test applications, 2-VersionGL.cpp and 2-ClearScreen.cpp, from Downloads.zip/Apps.

You should now have:

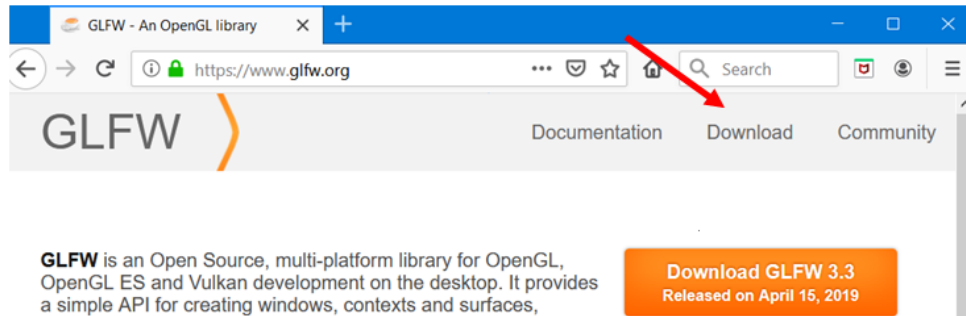
C:/Users/Robin/Code/Graphics/
Apps/(2-VersionGL.cpp, and 2-ClearScreen.cpp)
Include/(.h files)
Lib/(GLXtras.cpp and glad.c)

Copy Library and dll Files

From Downloads.zip/Bin-MinGW, copy libgdi32.a, libglu32.a, and libopengl32.a to C:/Program Files (x86)/CodeBlocks/MinGW/lib.

Copy GLFW files

GLFW library files are obtained from www.glfw.org. Click on the Download button at the upper right.



This should lead to:

Windows pre-compiled binaries

These packages contain the GLFW header files, [documentation](#) and release mode static libraries, DLLs and import libraries for Visual C++ 2010-2019, MinGW-w64 and plain MinGW.

Binaries for Visual C++ 2010 and plain MinGW are only available in the 32-bit package.

64-bit Windows binaries

32-bit Windows binaries

Select the 32-bit version (it'll work on a 64-bit machine) because the 64-bit version is known to be problematic.

Open glfw-3.3.2.bin.WIN32.zip and go to the sub-directory lib-mingw.

Copy glfw3.dll to your dll directory (if your machine is 64-bit, copy to C:/Windows/SysWOW64; if your machine is 32-bit, copy to C:/Windows/System32).

Copy libglfw3.a and libglfw3dll.a to ProgramFiles(x86)/CodeBlocks/MinGW/lib.

Check Glad Version

Glad is an alternative to the now defunct GLEW (GL Extension Wrangler), allowing OpenGL to utilize whichever version is supported by your computer's GPU.

If your laptop is less than five years old, it likely supports OpenGL version 4.5. To double-check, right-click on desktop, select NVidia control panel (if your GPU has an NVidia chip - if not, search for an equivalent option) and then (lower-left) click on System Information; the model number for the chip should be listed. Search the web for technical specifications, which should list the OpenGL version supported.

The files **Include/glad.h** and **Lib/glad.c** are for OpenGL version 4.5. If your GPU is less than 4.5, almost certainly glad.3.2.h and glad.3.2.cpp will work (simply copy them from Downloads.zip and rename them to glad.h and glad.c).

Test

File->New Project, select Empty project

Browse to parent folder, fill in "Project title" (let the other fields default)
Check "Debug", uncheck "Release"

Settings→Compiler→Linker Settings

Add these libraries:

glfw3
opengl32
glu32
gdi32

Settings->Search directories→Compiler

Add these directories:

C:/programfilesx86/codeblocks/mingw/include
C:/users/Robin/include

Settings->Search directories→Linker

Add C:/programfilesx86/codeblocks/mingw/lib

Build and test 2-VersionGL.cpp.

Build and test 2-ClearScreen.cpp.