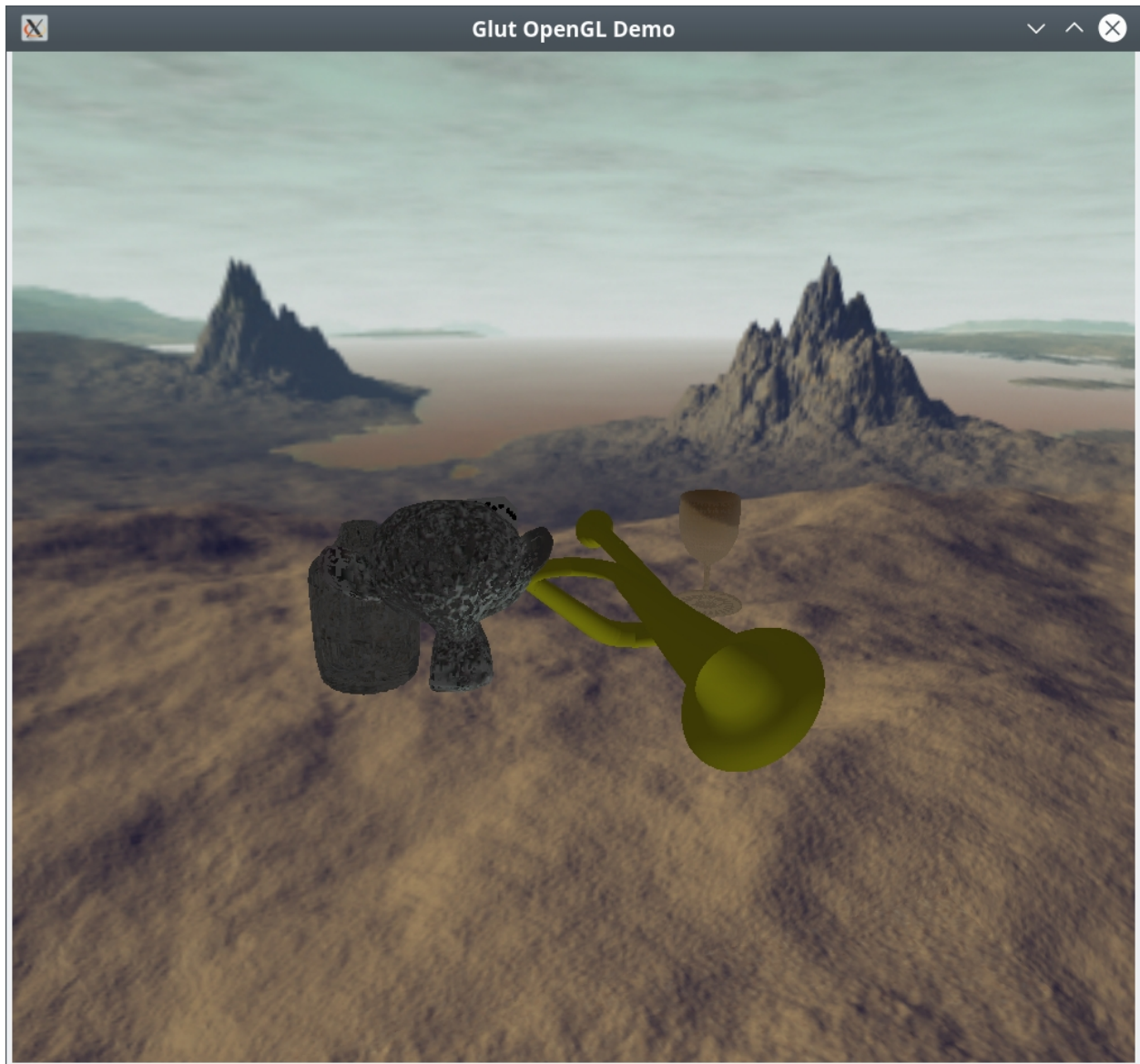


The OpenGL Window Demo





OpenGLWindow is a programmer's resource that demonstrates how to create a window and provide content – an OpenGL scene and sound – in six different windowing libraries. Each window is its own self contained class, in which the class encapsulating the image is instantiated. The OpenGL scene is provided by a separate set of classes that are contained in two libraries: libopenglscene.so and libassimpopengl.so. I did it this way so that the scene would be completely separate from the windows themselves.

There are a few variables you may want to know about. First, SCR_WIDTH and SCR_HEIGHT can be changed for each window to change the startup width and height for the window, however, the windows can be dynamically resized. The variable soundFile will change the music played for the given window and in the datagen/src/openglwindow.cpp file the item.path variable can be changed to add your own blender file, and item.location can be used to place it in the scene, also item.model can be used to orient your object, but please use item.location to define your item.model translation or your results may be various. If you are

going to add new items, be sure to index the modelinfo vector, using item.idval so the vector can be restored to it's original order inside the libassimpopengl.so library.

What follows is the contents of the README.txt file:

openglwindow is a program that displays a group of different kinds of windows with sound using OpenGL.

Initially there is a selection screen to select the type of window to display. Each display has a number of keys enabled.

The keys are as follows.

a right

s back

d left

w forward

r up

f down

x reverse view.

z reset view.

Escape ends the program.

Alt+Return sets full screen.

Up arrow zooms in.

Down arrow zooms out.

To compile the program you will need the following libraries:

FreeImage, GLEW, boost, pthread, Assimp, GLM, Xlib, SFML, and the window libraries, SDL2, freeglut, Allegro5, SFML, and GLFW3.

You must also have cmake and doxygen.

The commands are:

mkdir build

cd build

cmake ..

sudo make doc

sudo make install

To run a program use:

openglwindow

To run one individually use:

openglallegro

openglsdl2

openglglut

openglglfw3

openglSFML

The documentation is located in:

`/usr/share/doc/openglwindow-doc`

The `assimpopengl` subdirectory can be made into a separate program and used to provide Assimp library support for any project you may care to undertake. Just copy the `assimpopengl` directory:

```
cp -r openglwindow/datagen/assimpopengl yourlocation
```

and use it as you wish.

The sources I used to educate myself concerning OpenGL are as follows:

"OpenGL ES 3.0 Programming Guide Second Edition"
by Dan Ginsburg and Budirijanto Purnomo published by Addison-Wesley 2014.
www.learnopengl.com.

GLEW <http://glew.sourceforge.net>, and

CMAKE <http://www.cmake.org>.

Doxygen <http://www.doxygen.nl>

GraphViz <https://www.graphviz.org> for the "dot" program used by doxygen.

SDL2 <https://wiki.libsdl.org/FrontPage>

Allegro <https://liballeg.org>

GLFW <https://www.glfw.org>

Glut <http://freeglut.sourceforge.net>

Assimp <https://www.assimp.org>

SFML <https://www.sfml-dev.org>

pthread <https://www.gnu.org/software/hurd/libpthread.html>

OpenGL is generally available on any system as part of the underlying graphics subsystem and GLEW will get you access to it.

The program was written and compiled on debian linux available at: www.debian.org.

You can reach me at <eberdeed@eberdeed.net>.

Updates will be available at www.eberdeed.net.

Edward Charles Eberle

April 17th, 2020 San Diego, California United States of America

This program is licensed under the Lesser GNU Public license.

It can be found in the `assimpopengl/LGPL` directory and once installed it will be also found at

`/usr/share/doc/openglwindow-doc/LGPL`. This program is given as an instructional aid for learning

and using the libraries presented and is not to be considered fit for any particular use.