ShaderMaker

ShaderMaker is a source code template that can be used to compile FreeframeGL plugins from shader source copied from "*GLSL Sandbox*" and "*ShaderToy*".

Plugins can be created from these shaders by copy/paste of the fragment shader code into the ShaderMaker.cpp source file and re-compiling.

The code is pasted into a section of the source file which uses the Stringizing operator (**#**) which converts the shader code into a string which is then used by the shader compiler on load of the plugin.

There are some limitations of using the stringizing operator in this way because it depends on the "#" symbol, e.g. #(.. code), therefore there cannot be any # characters in the code itself.

It is useful to create, select and test shaders with the *ShaderLoader* plugin first. Then they will compile successfuly in *ShaderMaker*. Refer to the *ShaderLoader* documentation for details.

GLSL Sandbox and *ShaderToy* examples are included in the source.

Compilation

To make your own shader plugin, all you do is copy/paste the shader code into the source file, change the plugin information and recompile. There are some things to take note of, but hopefully the code and documentation are clear enough.

To change the plugin information, find "PluginInfo" in ShaderMaker.cpp and change both the plugin ID and the plugin name. If you don't give the plugin a unique ID, it will conflict with any other copies you may have made even if it is a different name. Some programs warn of duplicate ID's and some simply ignore them and your plugin might not show up.

A good start is to refer to the list of ID's is catalogued here :

http://community.freeframe.org/plugindatabase

Windows

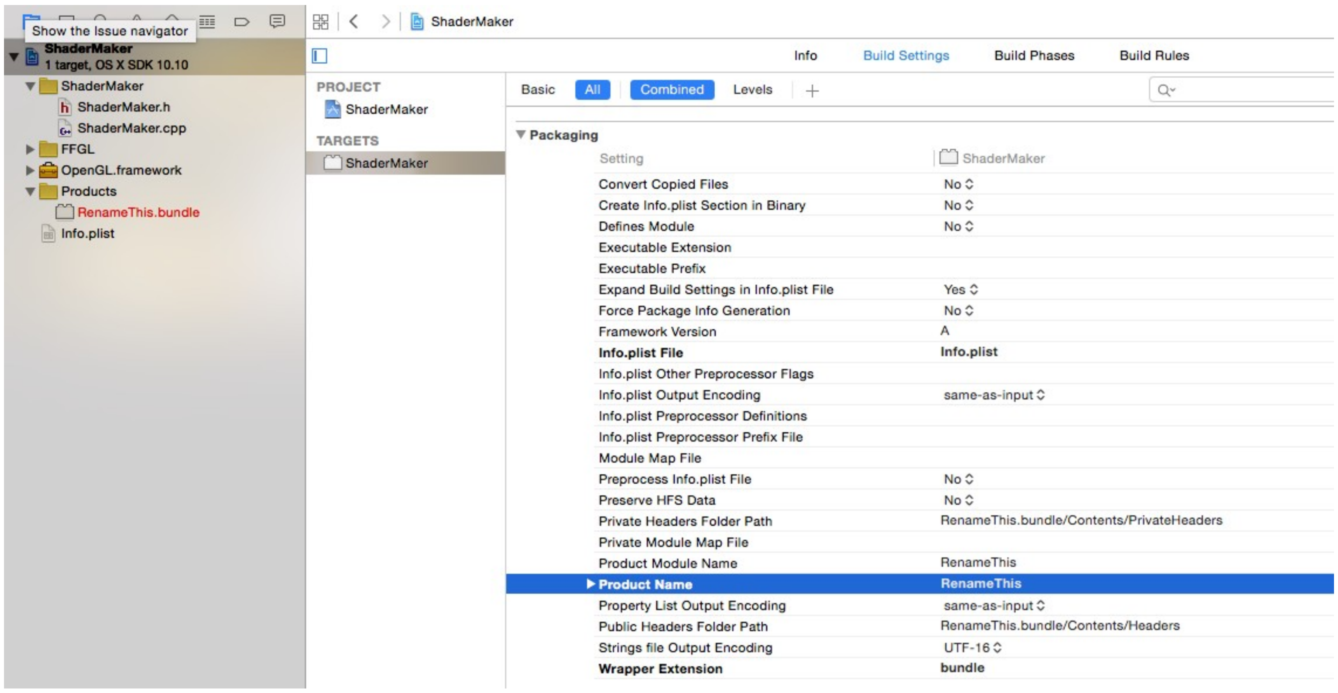
This is a Visual Studio C++ project that can make any number of them. Download everything and unzip into in any folder, open the VS2010 solution file with Visual Studio and change to "release", it should build OK as-is. More examples are in the source file.

Compilation will result in a FreeframeGL plugin "ShaderMaker.dll". Simply rename the file as you require. The dll can then be copied into the plugin folder for the host application.

Mac

In build/osx there are both an XCode project and a makefile. In both cases, the resulting bundle will be created in Binaries/osx.

Within XCode the "Product Name" has to be changed :



Setting	ShaderMaker
Convert Copied Files	No
Create Info.plist Section in Binary	No
Defines Module	No
Executable Extension	
Executable Prefix	
Expand Build Settings in Info.plist File	Yes
Force Package Info Generation	No
Framework Version	A
Info.plist File	**Info.plist**
Info.plist Other Preprocessor Flags	
Info.plist Output Encoding	same-as-input
Info.plist Preprocessor Definitions	
Info.plist Preprocessor Prefix File	
Module Map File	
Preprocess Info.plist File	No
Preserve HFS Data	No
Private Headers Folder Path	RenameThis.bundle/Contents/PrivateHeaders
Private Module Map File	
Product Module Name	RenameThis
Product Name	**RenameThis**
Property List Output Encoding	same-as-input
Public Headers Folder Path	RenameThis.bundle/Contents/Headers
Strings file Output Encoding	UTF-16
Wrapper Extension	**bundle**

Where to copy the plugin

For “*Resolume Avenue*” or “*Resolume Arena*”, you can copy them to the default plugin “vfx” folder. Or you can define specific folders for effects. The plugin will show up in the list of effects.

For "*Isadora*" copy to the Program files "..\Common Files\Freeframe" folder. Create this folder if it does not exist.

Magic allows "additional module folders" to be defined so using the "..\Common Files\Freeframe" folder is a good idea.

Operation

Although *ShaderMaker* results in an "effect" plugin, it will load without any texture input even if one is required by the shader, but it simply will not show anything. If a texture is not required by the shader, any input texture is ignored.

The plugin allows for two texture inputs. Hosts tested : *Magic*, *Isadora*, *Resolume*

For *Magic*, connect one or two texture inputs or none. The textures are used if the shader requires them or are ignored if not.

Resolume will also work with no texture source or with one or two sources and similarly the textures are either used or not depending on whether the shader requires them.

For *Isadora*, the plugin will not work without a texture input. Both texture inputs have to be connected to a texture source.

Changing the speed

The "Speed" control allows the animation rate of the shader to be controlled in the same way as for the speed controls in *GLSL Sandbox* or *ShaderToy*. *ShaderMaker* time is calculated internally rather than using FFGL time input from the host.

Position control

ShaderMaker does not react on mouse movement, but parameters can be used in an equivalent way to the Mouse input variables within the shader.

Mouse X & Mouse Y are passed through from the first two parameters of the plugin.

A further two "mouse" coordinates are passed through from the next two parameters of the plugin Mouse Left X and Mouse Left Y. These are equivalent to the left button pressed.

Colour control

An additional uniform for colour input can be used. The values do not need to be used for colour, so the four floats are available for other purposes.

```
uniform vec4 inputColour; // (red, green, blue, alpha)
```

This uniform is added internally for a ShaderToy shader file, but for a GLSL Sandbox file it has to be entered into the file itself.

Contact, Credits and License

Contact

Contact us at spout.zeal.co

Credits

Implementation by Lynn Jarvis leadedge@adam.com.au. MacOSX port by Amaury Hazan amaury@billaboop.com.

The MacOSX port was supported by Coldcut/Ninja Tune as a contribution to the Visuals Community.

Thanks to Joris de Jong from the Resolume team for the hint on changing the Product Name in XCode.

License