

Bifrost : Engine Specification 2019-2020 (v0.0.1)

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Abstract

This document is a very tentative overview of the Bifrost Game Engine.

Overview

This document describes the API design of the Engine as a whole not on any specifics. Typically you will need to add more functionality than what is described here but this is the baseline so that all engine Modules can interact with each-other in a sane way. The member variables on any class is a suggestion while the **member functions are a requirement**.

Dependencies

Library	Explanation
C++ STL (C++11, C++14, C++17)	Provides template containers so that we don't need to reinvent the wheel.
C Runtime Library	Provides a good set of utility functions such as 'cos', and 'sin'.
glfw (w/ glad)	Provides windowing (w/ OpenGL context creation) and input to our game.
glm	Provides a very optimized and stable set of vector / matrix math operations.
OpenGL v4.4	Provides a way to interface with the GPU Pipeline.
FMOD	Provides audio output and other sound utilities.
DEAR ImGui	Provides an easy way to create GUIs for in engine editing of our game.
stb_image	Provides 2D asset loading utilities for use with OpenGL.

Engine Overview / Ideals

- Cmake 3.11 used for our build system.
 - “project/CmakeLists.txt”
- GitHub used for source control
 - engine/*
 - game/*
- Visual Studio for compiling and debugging although not strictly required by our setup.
- Clangformat is used for enforcing the styleguide.

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