Assignment 1 : Creating a simple keyframe-based animation

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1 INTRODUCTION

A interactive keyframe base animation is implemented. You can set rotation angle at any time point between 0 to 10 seconds to determine keyframe. Rotation at other time point will be caculated using cubic spline.

2 IMPLEMENTATION DETAILS

Cubic spline is implemented totally in *cubicSpliner.h*, *testOpenGL.cpp* contains main render process, other *.h* are mostly from learn OpenGL for render usage. All four tasks are implemented. For render, glad(a OpenGL extension) and glfw are used. For gui, imgui is used. For asset read, assimp is used. For matrix caculation, eigen and glm are used. For package management, conan(a cpp package manager is used). The conanfile.txt specifies packages used. For cubic spline, the article https://zhuanlan.zhihu.com/p/62860859 which contains all and only math derivation is referenced.

3 RESULTS

A gif result will be on www.github.com/Eric-Song-Nop/keyframeBasedAni. Source code won't be open sourced until oct 21. On my computer(7th gen i7), it is stable at 60fps.