Homework 1 - OpenGL Basics

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1 Introduction

This document descibes the architecture and design for the first assignment with OpenGL. The objective with this assignment was to create a triangle that oscillates between colored and non-colored.

There is a single major stakeholder:

1. The professor

2 Design Goals

The priorities for the design are as follows:

- The design should minimize complexity
- The design should be conceptually easy to understand
- The design should be easy to modify

3 System Behavior

The use case view is the prime motivator for the System Behavior. This is because the program is simple with no complex components.

The program starts with the triangle filled in, demonstrated by the left triangle in Figure 1, and then progresses onward infinitely until the Escape Key is pressed. The code describing this behavior will be explained further in Section 4.

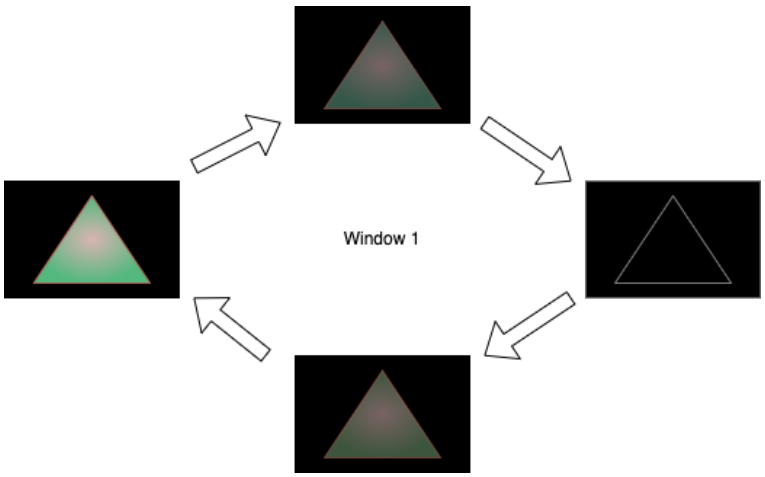

Figure 1: System Behavior for Window 1.

In Figure 1, the right triangle has a white outline and black fill to demonstrate that the triangle exists, but lacks color. When the program is run however, the triangle loses color until it is not visible anymore.

4 Logical View

In this section, the system will be described from a Mid-Level Design View.

4.1 Mid-Level Design

VBA
    VAO

5 Process View

How many threads are running? 2? one for each window?
    There is a single thread managing the program.
    Upon building the program, the triangle is drawn each frame at a slightly different RGB value.

6 Development View

2 threads?
    1 thread with the console
    1 thread with the openGL rendered triangle

7 Physical View

TBD

8 Use Case View

The user has option to press escape and close window 1
    then press any key to close window 2

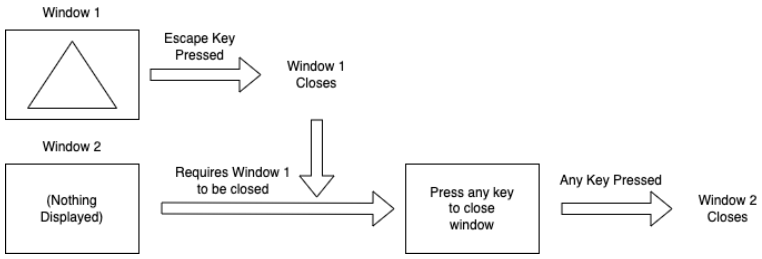

Figure 2: A diagram demonstrating the Use Case Scenario.