Project 1: Sierpinski Triangle

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CST-310: Computer Graphics

**Description**

For our first project in CST-30f: Computer Graphics, we focus on the Sierpinski Gasket in order to get OpenGL working and to begin understanding the use of OpenGL with C++. In this project, I have included a small user interface that allows the user to choose between a 2D or 3D rendering of the project.

**Methodology**

The Sierpinski triangle is constructed by repeatedly connecting the sides of previously built triangles. This is built in the code through a loop that performs this action. This loop does have a termination point after 100,000 points rendered. This is to ensure that the points don’t build forever.

**Key elements**

The code for this project follows a couple of key steps to build and render the triangle. First, 2D and 3D functions are created to outline coordinates for the rendering of the triangle.

A screenshot of a cell phone

Description automatically generated

Next, the reshaping code is written to ensure that no matter what dimensions are set for the triangle, it will always fit in the window for easy view of the user.

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NOTE: Please disregard the warnings, as they explain that the OpenGL needs an update, but the program runs well.

Next, the rendering of the first 500 points is done so the program can build the next of the 100,000 points off of it.

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Following this, the color code is set for the background and rendering to ensure optimal viewing for by the user.

After this, the next 100,000 points are drawn in the window to finish the triangle.

**Screenshots of Code**

**A screenshot of a computer

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Code written in Xcode as the IDE.

A close up of a logo

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2D Render

A screenshot of a cell phone

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3D Render