

Lab #3 – csc 471

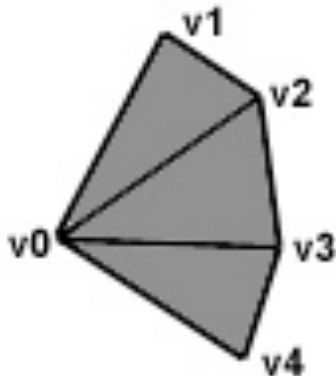
Set-up for writing line rasterization

Objective: This lab is intended to provide you with more practice writing simple OpenGL applications, practice using OpenGL primitives and likewise to generate code you can use for your project 1 and future applications. In addition, it will be the basis for your lab #4, will you will write your own algorithm to rasterize lines.

You will need to write your own OpenGL program, which allows the user to draw either lines or a circle. Use a menu or keyboard toggle to toggle between these two modes. These two primitives are not related to one another other than that both should appear where the user clicks the mouse. Your program should includes a reshape function, exactly as we used in lab #2.

Your program will need to:

- Draw a lines based on the where the user clicks the mouse, using `GL_LINES`. Define a structure or class that contains two 2D points which represent the line. Your program should support up to at least 3 different lines.
 1. The first mouse click (of a pair of clicks) will determine the first point on line
 2. The second will be the second (final) point for this line.
 3. The user should be able to draw three lines total.I suggest using a keyboard event to start and stop drawing lines (in case the user doesn't want to draw all three lines, but this is up to you. You can also force the user to draw three lines if they enter "line drawing" mode, by interpreting the next 6 clicks as lines.)
- Draw a circle using the parametric equation for a circle to generate 30 sample points which are all connected to form a filled in circle using a `GL_TRIANGLE_FAN`, which has the following format:



You will need to demo this lab to me, within one week of it being assigned.