

CS 3370 – Computer Graphics

Fall 2009

Lab # 2

Due electronically before 11:59 p.m., September 18, 2009

The goal of this lab is to gain experience with 2D transformations, polygon display functions, and interfacing with input devices.

Write a program that will prompt the user to input the vertices of a polygon using the mouse. After reading the polygon vertices, your program should run a loop, redrawing the polygon every time its configuration changes. Using the keyboard, allow the user to perform the following operations:

- Translate the polygon up, down, left or right
- Scale the polygon in the x or y direction (make sure the scaling occurs with respect to the current polygon position)
- Toggle between displaying a filled polygon and edges only
- Rotate the polygon clockwise or counterclockwise with respect to
 - The origin
 - The polygon's "center" (assume the center is the average (x,y) position of its vertices)
 - A user specified (via mouse) pivot point
- Toggle between position mode and velocity mode for rotation and translation commands.
- Quit the program

For extra credit, consider adding more functionality to your program, including detecting collisions with the display window's boundary, having different fill area styles, multiple polygons, etc.

Deliverables

1. A report following the guidelines stated in the syllabus.
2. Your program source code.