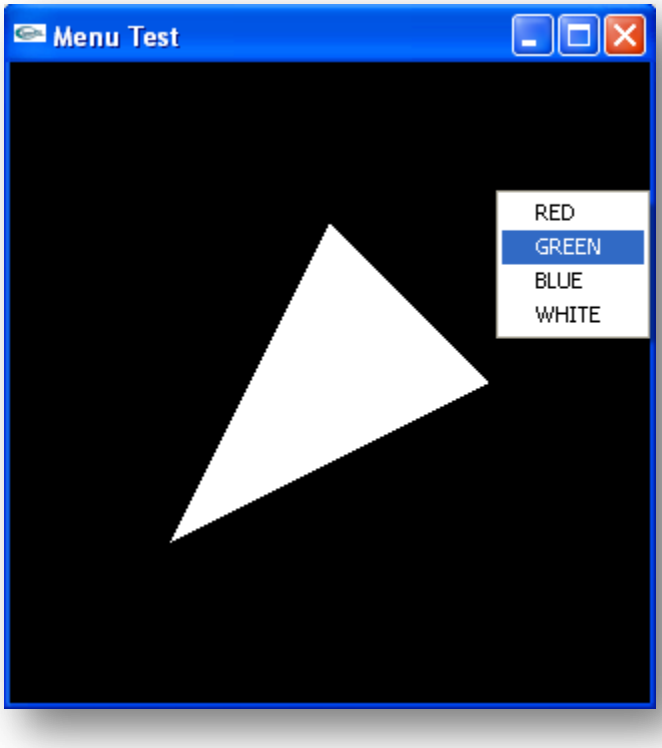
CSC 305 **Computer Graphics**

Lab Exercise - work with the Menu

We will build a single menu that will allow the user to change the color of a triangle, the user activates the menu by right click in the OpenGL window, at that point a choice of four colors is provided.

The user chooses the desired color by a left-click on one of the options.

Sample Output



Source Code

```
#include "stdafx.h"
#include <windows.h>   // use as needed for your system
#include <gl/gl.h>
#include <gl/glu.h>
#include <gl/glut.h>

#define RED 1
#define GREEN 2
#define BLUE 3
#define WHITE 4

float angle= 0.0; // for rotating the triangle
float red= 1.0, blue=1.0, green=1.0; // possible triangle colors

void setWindow(GLdouble left, GLdouble right, GLdouble bottom, GLdouble top)
{
      glMatrixMode(GL_PROJECTION);
      glLoadIdentity();
      gluOrtho2D(left,right,bottom,top);
}

void processMenuEvents(int option)
{
      switch(option)
      {
      case RED: red= 1.0; green= 0.0; blue= 0.0; break;
      case GREEN: red= 0.0; green= 1.0; blue= 0.0; break;
      case BLUE:red= 0.0; green= 0.0; blue= 1.0; break;
      case WHITE:red= 1.0; green= 1.0; blue= 1.0; break;
      }

}

void myInit(void)
{
    glClearColor(0.0,0.0,0.0,0.0);       // set white background color
      glColor3f(0.0f, 0.0f, 0.0f);         // set the drawing color
      glPointSize(4.0);                    // a 'dot' is 4 by 4 pixels
      setWindow(0.0, 320.0, 0.0, 320.0);

      glutCreateMenu(processMenuEvents);
      glutAddMenuEntry("RED",RED);
      glutAddMenuEntry("GREEN",GREEN);
      glutAddMenuEntry("BLUE",BLUE);
      glutAddMenuEntry("WHITE",WHITE);
      glutAttachMenu(GLUT_RIGHT_BUTTON);
}

void myDisplay(void)
{

      glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);     // clear the screen
      glLoadIdentity();
      glColor3f(red,green,blue); // change its color
      glBegin(GL_TRIANGLES);
            glVertex2f(-0.5,-0.5);         // draw three points
            glVertex2f(0.5,0.0);
            glVertex2f(0.0,0.5);
```

```
	glEnd();
	glutSwapBuffers();
	glFlush();
}


void main(int argc, char** argv)
{
	glutInit(&argc, argv);                          // initialize the toolkit
	glutInitDisplayMode(GLUT_DEPTH | GLUT_DOUBLE | GLUT_RGBA); // set display mode

	glutInitWindowSize(320,320);              // set window size
	glutInitWindowPosition(100, 100);               // set window position on
screen
	glutCreateWindow("Menu Test");      // open the screen window

	glutDisplayFunc(myDisplay);                     // register redraw function
	glutIdleFunc(myDisplay);


	myInit();
	glutMainLoop();                                 // go into a perpetual loop
}
```