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/* simple graphics program to demonstrate display list and mouse event */

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```
#include<windows.h>
#include<GL/glut.h>
#define QSTRIP 1
//function to define display list
void display()
{
glClearColor(0.0,0.0,0.0,0.0);
glClear(GL_COLOR_BUFFER_BIT|GL_DEPTH_BUFFER_BIT);
glNewList(QSTRIP, GL_COMPILE);//display list
      glBegin(GL_QUAD_STRIP);
            glColor3f(0.0,0.0,1.0);
            glVertex3f(0.0,0.0,0.0);//v0
            glVertex3f(2.0,0.0,0.0);//v1
            glColor3f(0.0,1.0,0.0);
            glVertex3f(0.0,2.0,0.0);//v2
            glVertex3f(2.0,2.0,0.0);//v3
            glColor3f(1.0,0.0,0.0);
            glVertex3f(0.0,4.0,0.0);//v4
            glVertex3f(2.0,4.0,0.0);//v5
      glEnd();
glEndList();
}
//functions which calls display list
void quad()
{
      glCallList(QSTRIP);
      glFlush();
}
//reshape event handling function
void reshape(GLint w, GLint h)
{
glMatrixMode(GL_PROJECTION);
glLoadIdentity();
gluOrtho2D(-5,5,-5,5);
glMatrixMode(GL_MODELVIEW);
glViewport(0,0,w,h);
}
//mouse event handling function
void myMouse(int button, int state, int x, int y)
{
      if(button==GLUT_LEFT_BUTTON && state==GLUT_DOWN)
            quad();
      if(button==GLUT_RIGHT_BUTTON && state==GLUT_DOWN)
            exit(0);
}
int main(int argc, char **argv)
{
      glutInit(&argc, argv);
      glutInitDisplayMode(GLUT_DEPTH|GLUT_RGB|GLUT_SINGLE);
      glutInitWindowSize(400,400);
      glutInitWindowPosition(100,100);
      glutCreateWindow("display list");
      glutDisplayFunc(display);
      glutMouseFunc(myMouse);
      glutReshapeFunc(reshape);
      glutMainLoop();
}
```

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/* program to draw a small square at the location of the screen where the mouse left button is Clicked and window is closed when 'q' key is pressed*/

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```
#include<windows.h>
#include<GL/glut.h>
#define QSTRIP 1
GLfloat size=50.0;
GLsizei wh=300, ww=300;
void display()
{
glClearColor(0.0,0.0,0.0,0.0);
glClear(GL_COLOR_BUFFER_BIT|GL_DEPTH_BUFFER_BIT);
}
void drawsquare(int x, int y)
{
	glBegin(GL_POLYGON);
		glColor3f(0.0,0.0,1.0);
		glVertex2f(x+size, y+size);
		glVertex2f(x-size, y+size);
		glVertex2f(x-size, y-size);
		glVertex2f(x+size, y-size);
	glEnd();
	glFlush();
}
void reshape(GLint w, GLint h)
{
glMatrixMode(GL_PROJECTION);
glLoadIdentity();
gluOrtho2D(0.0,(GLdouble)w,0.0,(GLdouble)h);
glMatrixMode(GL_MODELVIEW);
glViewport(0,0,w,h);
ww=w;
wh=h;
}
void myMouse(int button, int state, int x, int y)
{
	if(button==GLUT_LEFT_BUTTON && state==GLUT_DOWN)
		drawsquare(x,y);
	}
void myKey(unsigned char key, int x, int y)
{
	if(key=='q'||key=='Q')
		exit(0);
}
int main(int argc, char **argv)
{
	glutInit(&argc, argv);
	glutInitDisplayMode(GLUT_DEPTH|GLUT_RGB|GLUT_SINGLE);
	glutInitWindowSize(ww,wh);
	glutInitWindowPosition(100,100);
	glutCreateWindow("display list");
	glutDisplayFunc(display);
	glutMouseFunc(myMouse);
	glutReshapeFunc(reshape);
	glutKeyboardFunc(myKey);
	glutMainLoop();
}
```

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/*sample program Pop up Menu using GLUT*/ www.FirstRanker.com www.FirstRanker.com

```
#include<windows.h>
#include<GL/glut.h>
GLint size=2;
void display()
{
      glClearColor(0.0,0.0,0.0,1.0);
      glClear(GL_COLOR_BUFFER_BIT);
 }
void reshape(GLint w, GLint h)
{
      glMatrixMode(GL_PROJECTION);
      glLoadIdentity();
      gluOrtho2D(-10,10,-10,10);
      glMatrixMode(GL_MODELVIEW);
      glViewport(0,0,w,h);
}
void draw(int size)
{
       glBegin(GL_POLYGON);
              glVertex2f(-size, -size);
              glVertex2f(size, -size);
              glVertex2f(size, size);
              glVertex2f(-size, size);
          glEnd();
      glFlush();
}
void demo_menu(int id)
{
      switch(id)
      {
          case 1: exit(0);
                    break;
          case 3: size=2*size;
                    glColor3f(0.0,0.0,1.0);
                    draw(size);
                    break;
          case 4: if(size>3)
                    size=size/2;
                    glColor3f(0.0,1.0,0.0);
                    draw(size);
                    break;
          case 2: glColor3f(1.0,0.0,1.0);
                    draw(size);
                    break;
      }
      glutPostRedisplay();
}

int main(int argc, char **argv)
{
      glutInit(&argc, argv);
      glutInitDisplayMode(GLUT_DEPTH|GLUT_RGB|GLUT_SINGLE);
      glutInitWindowPosition(50,50);
      glutInitWindowSize(500,500);
      glutCreateWindow("sample menu");
      glutCreateMenu(demo_menu);
      glutAddMenuEntry("Quit", 1);
      glutAddMenuEntry("original",2);
      glutAddMenuEntry("Increase",3);
      glutAddMenuEntry("Decrease",4);
      glutAttachMenu(GLUT_RIGHT_BUTTON);
      glutDisplayFunc(display);
```

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```
        glutReshapeFunc(reshape);
        glutMainLoop();
}
```

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/* Program on Menu and sub menu*/

```
#include<windows.h>
#include<GL/glut.h>
GLint size=2;
int sub_menu;
void display()
{
        glClearColor(0.0,0.0,0.0,1.0);
        glClear(GL_COLOR_BUFFER_BIT);
  }
void reshape(GLint w, GLint h)
{
        glMatrixMode(GL_PROJECTION);
        glLoadIdentity();
        gluOrtho2D(-10,10,-10,10);
        glMatrixMode(GL_MODELVIEW);
        glViewport(0,0,w,h);
}
void draw(int size)
{
         glBegin(GL_POLYGON);
                glVertex2f(-size, -size);
                glVertex2f(size, -size);
                glVertex2f(size, size);
                glVertex2f(-size, size);
            glEnd();
        glFlush();
}
void demo_menu(int id)
{
        switch(id)
        {
              case 1: exit(0);
                        break;
              case 2: glColor3f(1.0,0.0,1.0);
                        draw(size);
                        break;
              case 3: size=2*size;
                        glColor3f(0.0,0.0,1.0);
                        draw(size);
                        break;
              case 4: if(size>3)
                        size=size/2;
                        glColor3f(0.0,1.0,0.0);
                        draw(size);
                        break;
        }
        glutPostRedisplay();
}

int main(int argc, char **argv)
{
        glutInit(&argc, argv);
        glutInitDisplayMode(GLUT_DEPTH|GLUT_RGB|GLUT_SINGLE);
        glutInitWindowPosition(50,50);
        glutInitWindowSize(500,500);
        glutCreateWindow("sample menu");
        sub_menu=glutCreateMenu(demo_menu);
        glutAddMenuEntry("Increase",3);
```

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```
glutAddMenuEntry("Decrease",4);
glutCreateMenu(demo_menu);
glutAddMenuEntry("Quit", 1);
glutAddMenuEntry("original",2);
glutAddSubMenu("Resize", sub_menu);
glutAttachMenu(GLUT_RIGHT_BUTTON);
glutDisplayFunc(display);
glutReshapeFunc(reshape);
glutMainLoop();}

/*Program for displaying stroke and raster text*/

#include<windows.h>
#include<GL/glut.h>
void displayText( int r, int g, int b, const char *string ) {
int j = strlen( string );
        glColor3f( r, g, b );
glRasterPos2f(100.0, 10.0 );
for( int i = 0; i < j; i++ ) {
        //glutStrokeCharacter( GLUT_STROKE_MONO_ROMAN, string[i] );
        glutBitmapCharacter(GLUT_BITMAP_TIMES_ROMAN_24, string[i]);
}
glFlush();
}
void display()
{
        glClearColor(0.0,0.0,0.0,1.0);
        glClear(GL_COLOR_BUFFER_BIT|GL_DEPTH_BUFFER_BIT);
        displayText(1.0,0.0,0.0,"M. Praveen Kumar, Assistant Professor, MECS");
}
void reshape(GLsizei w, GLsizei h)
{
        glMatrixMode(GL_PROJECTION);
        glLoadIdentity();
        gluOrtho2D(0.0,(GLdouble)w, 0.0,(GLdouble)h);
        glMatrixMode(GL_MATRIX_MODE);
}
int main(int argc, char **argv)
{
        glutInit(&argc, argv);
        glutInitDisplayMode(GLUT_DEPTH|GLUT_RGB|GLUT_SINGLE);
        glutInitWindowSize(400,400);
        glutInitWindowPosition(100,100);
        glutCreateWindow("Text Display");
        glutDisplayFunc(display);
        glutReshapeFunc(reshape);
        glutMainLoop();
}
```

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