

Computer Graphics Practicals

Assignment 3

U18CO081
Krunal Rank

Write a program to draw the following shapes:

1. Points (individual points)
2. Lines (pairs of vertices interpreted as individual line segments)
3. Line Strip (series of connected line segments)
4. Line Loop (same as above, with a segment added between last and first vertices)

```
#include <GL/glut.h>
#include <stdio.h>

// To Compile:-
// g++ -pthread 1.cpp -lglfw3 -lGLEW -lGLU -lGL -lXrandr -lXxf86vm -lXi -lXinerama
-lX11 -lrt -ldl -lglut

float points[6][2] =
{{0.25f,0.433f},{-0.25f,0.433f},{-0.5f,0.0f},{-0.25f,-0.433f},{0.25f,-0.433f},{0.5f,0.0f}};

void showPoints()
{
    glClear(GL_COLOR_BUFFER_BIT);
    glColor3f(0, 0, 1);

    for(int i = 0;i<6;i++){
        glBegin(GL_POINTS);
        glVertex2f(points[i][0],points[i][1]);
        glEnd();
    }
    glutSwapBuffers();
}

void showLines() {

    glClear(GL_COLOR_BUFFER_BIT);
    glColor3f(0, 0, 1);

    for(int i = 0;i<5;i+=2){
        glBegin(GL_LINES);
        glVertex2f(points[i][0],points[i][1]);
        glVertex2f(points[i+1][0],points[i+1][1]);
        glEnd();
    }
}
```

```

    }
    glutSwapBuffers();
}

void showLineStrips() {
    glClear(GL_COLOR_BUFFER_BIT);
    glColor3f(0, 0, 1);

    for(int i = 0; i < 5; i++) {
        glBegin(GL_LINES);
        glVertex2f(points[i][0], points[i][1]);
        glVertex2f(points[i+1][0], points[i+1][1]);
        glEnd();
    }
    glutSwapBuffers();
}

void showLoop() {
    glClear(GL_COLOR_BUFFER_BIT);
    glColor3f(0, 0, 1);

    for(int i = 0; i < 6; i++) {
        glBegin(GL_LINES);
        glVertex2f(points[i][0], points[i][1]);
        glVertex2f(points[(i+1)%6][0], points[(i+1)%6][1]);
        glEnd();
    }
    glutSwapBuffers();
}

int main(int argc, char *argv[])
{
    glutInit(&argc, argv);
    glutInitDisplayMode(GLUT_DOUBLE | GLUT_RGB);

    glutInitWindowSize(800, 600);
    glutCreateWindow("Assignment 4");

    glClearColor(1, 1, 1, 0);
    glShadeModel(GLU_FLAT);
    glPointSize(6.0);

```

```
glutDisplayFunc(showLoop);  
glutMainLoop();  
}
```





