Este es el primer código, no he podido probar nada debido a los errores, use la lógica presentada en clase para hacerlo.

```
// PRESENTADO POR JOAN SEBASTIAN TIBAQUIRA COD 1202060

#include <math.h>

#include <GL\glut.h>//INCLUYE LA LIBRERIA OPEN GRAPHICS LIBRARY


GLsizei w = 800, h = 800;


int x1, x2, y1, y2;


void Pixel(int x, int y);

void Plano();

void Mouse(int B, int S, int x, int y);

void Line(int x1, int y1, int x2, int y2);


int main(int argc, char** argv)

{

	glutInit(&argc, argv);

	glutInitDisplayMode(GLUT_RGBA | GLUT_SINGLE);

	glutInitWindowPosition(80, 80);

	glutInitWindowSize(w, h);

	glutCreateWindow("LINE");

	glutMouseFunc(Mouse);

	gluOrtho2D(-(w/2), (w / 2), -(h / 2), (h / 2));

	glutDisplayFunc(Plano);

	glutMainLoop();

	return 0;

}

void Pixel(int x, int y) {
```

```
	glPointSize(3);
	glBegin(GL_POINTS);
	glColor3f(0, 0, 0);
	glVertex2d(x, y);
	glEnd();
	glFlush();
}
void Plano() {
	for (int i = -(w/2); i < w; i++) {
		Pixel(i, 0);
	}
	for (int i = -(h/2); i < h; i++) {
		Pixel(0, i);
	}

}
void Line(int x1, int y1, int x2, int y2) {
	int dx, dy, x, y;
	int s, e;
	float m, b;
	dx = x2 - x1;
	dy = y2 - y1;
	if (dx != 0) {
		m = dy / dx;
		b = y1 - (m * x1);
		if (abs(dx) >= abs(dy)) {
			if (x1 <= x2) {
				s = x1;
				e = x2;
```

```
                }
                else {
                        s = x2;
                        e = x1;
                }
                for (int i = s; i <= e; i++) {
                        y = (m * i) + b;
                        Pixel(i, y);
                }
        }
        else {
                if (y1 <= y2) {
                        s = y1;
                        e = y2;
                }
                else {
                        s = y2;
                        e = y1;
                }
                for (int i = s; i <= e; i++) {
                        x = (y * b) / m;
                        Pixel(x, i);
                }
        }
}
else
{
        if (y1 <= y2) {
                s = y1;
```

```
                e = y2;
            }
            else {
                s = y2;
                e = y1;
            }
            for (int i = s; i <= e; i++) {
                Pixel(x, i);
            }
        }
    }
    void Mouse(int B, int S, int x, int y) {
        if (B == GLUT_LEFT_BUTTON && S == GLUT_DOWN) {
            x1 = x - (w / 2);
            y1 = (h / 2) - y;
            Pixel(x1, y1);
        }
        if (B == GLUT_RIGHT_BUTTON && S == GLUT_DOWN) {
            x2 = x - (w / 2);
            y2 = (h / 2) - y;
            Pixel(x2, y2);
            Line(x1, y1, x2, y2);
        }
    }
```

Este es el segundo.

```
// PRESENTADO POR JOAN SEBASTIAN TIBAQUIRA COD 1202060
#include <GL\glut.h>
#include <math.h>
//INCLUYE LA LIBRERIA OPEN GRAPHICS LIBRARY

int W = 640, H = 640;

void Mouse(int, int, int, int);
void Pixel(int, int);
void Line(float, float, float, float);
void Start();
float Minor(float, float);

int main(int argc, char* argv[]) {
	glutInit(&argc, argv);
	glutInitDisplayMode(GLUT_RGBA | GLUT_SINGLE);
	glutInitWindowPosition(650, 50);
	glutInitWindowSize(W, H);
	glutCreateWindow("LINE");
	glutMouseFunc(Mouse);
	glutDisplayFunc(Start);
	glutMainLoop();
	return 0;
}

void Mouse(int B, int S, int X, int Y) {
	glClear(GL_COLOR_BUFFER_BIT);
	if ((S == GLUT_DOWN) && (B == GLUT_LEFT_BUTTON)) {
		Line(320, 240, X, Y);
	}
}

void Pixel(int X, int Y) {
	glBegin(GL_POINTS);
	glVertex2d(X, Y);
	glEnd;
	glFlush();
}

void Line(float x1, float y1, float x2, float y2) {
	float m, b, dx, dy;
	if (x1 != x2) {
		dx = x2 - x1;
		dy = y2 - y1;
		m = dy / dx;
		b = y1 - (m * x1);
		if (m == 0) {
			for (int i = 0; i <= abs(x1 - x2); i++) {
				Pixel(i + Minor(x1, x2), y1);
			}
		}
		else {
			if (abs(m) == 1 || abs(y1 - y2) < abs(x1 - x2)) {
				for (int i = 0; abs(x1 - x2); i++) {
					Pixel(i + Minor(x1, x2), m * (i + Minor(x1, x2)) + b);
				}
```

```
                        }
                        else {
                                for (int i = 0; i < abs(y1 - y2); i++) {
                                        Pixel((i + Minor(y1, y2) - b) / m, i + Minor(y1, y2));
                                }
                        }
                }
        }
        else {
                for (int i = Minor(y1,y2); i < abs(y1 - y2); i++) {
                        Pixel(x1,i);
                }
        }
}

void Start() {
        glClearColor(1,0.5,3,0);
        glPointSize(5);
        glColor3f(3, 1, 0);
        gluOrtho2D(0, W, H, 0);
}

float Minor(float a, float b) {
        float minor;
        if (a < b) {
                minor = a;
        }
        else{
                minor = b;
        }
        return minor;
}
```

Nicolas muchisimas gracias