//house using dda

#include <GL/freeglut.h>

#include <GL/gl.h>

#include <math.h>

void SetPixel(int x, int y){

glColor3f(0,0,0);

glBegin(GL\_POINTS);

glVertex2i(x,y);

glEnd();

}

void dda(int xs, int ys, int xe, int ye){

float dx, dy, steps;

float xinc, yinc, x, y;

dx = xe - xs;

dy = ye - ys;

if(abs(dx) > abs(dy)){

steps = abs(dx);

}else{

steps = abs(dy);

}

xinc = dx/steps;

yinc = dy/steps;

x=xs;

y=ys;

SetPixel(round(x), round(y));

for(int i=0; i<steps; i++){

x = x + xinc;

y = y + yinc;

SetPixel(round(x), round(y));

}

}

void renderFunction(){

glClearColor(1.0, 1.0, 1.0, 0.0);

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(0.0, 0.0,0.0);

gluOrtho2D(0,700,0,500);

glBegin(GL\_LINES);

//front

dda(175, 350, 175, 280);

dda(215, 280, 215, 350);

dda(175, 350, 215, 350);

dda(175, 280, 215, 280);

//window

dda(185, 295, 205, 295);

dda(205, 295, 205, 325);

dda(205, 325, 185, 325);

dda(185, 325, 185, 295);

//rest of the house

dda(215, 280, 300, 305);

dda(165, 330, 195, 390);

dda(225, 330, 195, 390);

dda(225, 330, 310, 355);

dda(195, 390, 280, 415);

dda(280, 415, 310, 355);

dda(300, 305, 300, 353);

dda(165, 330, 175, 335);

dda(249, 290, 249, 325);

dda(266, 295, 266, 330);

dda(266, 330, 249, 325);

glEnd();

glFlush();

}

int main(int argc, char\*\* argv)

{

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE);

glutInitWindowSize(700,500);

glutInitWindowPosition(100,100);

glutCreateWindow("OpenGL - house using dda");

glutDisplayFunc(renderFunction);

glutMainLoop();

return 0;

}

