实验十一 图形交互控制实验

时间：2022年5月25日

地点：信息学院机房

1、实验内容

通过鼠标函数实现图形交互控制实验

2、实验目的

编程实现图形交互控制

3、实验代码

#define \_STDCALL\_SUPPORTED

#include <GL/glut.h>

#include <math.h>

#include <stdlib.h>

#include <windows.h>

#include <stdio.h>

GLsizei winWidth = 400,winHeight = 300;

void init(void){

glClearColor(0.0,0.0,1.0,1.0);

glMatrixMode(GL\_PROJECTION);

gluOrtho2D(0.0,200.0,0.0,150.0);

}

void displayFcn(void){

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(1.0,0.0,0.0);

glPointSize(3.0);

}

void winReshapeFcn(GLint newWidth, GLint newHeight){

glViewport(0,0,newWidth,newHeight);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

gluOrtho2D(0.0,GLdouble(newWidth),0.0,GLdouble (newHeight));

winWidth = newWidth;

winHeight = newHeight;

}

void plotPoint(GLint x, GLint y){

glBegin(GL\_POINTS);

glVertex2i(x, y);

glEnd();

}

void mousePtPolt (GLint button, GLint action,GLint xMouse, GLint yMouse){

if(button == GLUT\_LEFT\_BUTTON && action == GLUT\_DOWN)

plotPoint(xMouse,winHeight - yMouse);

glFlush();

}

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

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowPosition(100,100);

glutInitWindowSize(winWidth, winHeight);

glutCreateWindow("Mouse Plot Points");

init();

glutDisplayFunc(displayFcn);

glutReshapeFunc(winReshapeFcn);

glutMouseFunc(mousePtPolt);

glutMainLoop();

}

4、实验结果

背景图案

低可信度描述已自动生成

5、实验总结

对图形进行控制变换，点击左键生成一个点，在点击左键生成第二个点，用两点可以画一条直线，点击左键两次再画第二条直线，点击右键把屏幕清空。