#include<conio.h>

#include<stdio.h>

#include<graphics.h>

static int LEFT=1,RIGHT=2,BOTTOM=4,TOP=8,xl,yl,xh,yh;

int getcode(int x,int y){

int code = 0;

if(y > yh) code |=TOP;

if(y < yl) code |=BOTTOM;

if(x < xl) code |=LEFT;

if(x > xh) code |=RIGHT;

return code;

}

void main()

{

int gd=DETECT,gm;

int x1,y1,x2,y2;

//int gdriver = DETECT,gmode,x1,y1,x2,y2;

int outcode1=getcode(x1,y1), outcode2=getcode(x2,y2);

int accept = 0;

initgraph(&gd,&gm,"C:\\TC\\BGI");

setcolor(BLUE);

printf("Enter bottom left and top right co-ordinates of window: ");

scanf("%d%d%d%d",&xl,&yl,&xh,&yh);

rectangle(xl,yl,xh,yh);

printf("Enter the endpoints of the line: ");

scanf("%d%d%d%d",&x1,&y1,&x2,&y2);

line(x1,y1,x2,y2);

getch();

while(1){

float m =(float)(y2-y1)/(x2-x1);

if(outcode1==0 && outcode2==0){

accept = 1;

break;

}

else if((outcode1 & outcode2)!=0){

break;

}else{

int x,y;

int temp;

//Decide if point1 is inside, if not, calculate intersection

if(outcode1==0)

temp = outcode2;

else

temp = outcode1;

//Line clips top edge

if(temp & TOP){

x = x1+ (yh-y1)/m;

y = yh;

}

else if(temp & BOTTOM){ //Line clips bottom edge

x = x1+ (yl-y1)/m;

y = yl;

}else if(temp & LEFT){ //Line clips left edge

x = xl;

y = y1+ m\*(xl-x1);

}else if(temp & RIGHT){ //Line clips right edge

x = xh;

y = y1+ m\*(xh-x1);

}

//Check which point we had selected earlier as temp, and replace its co-ordinates

if(temp == outcode1){

x1 = x;

y1 = y;

outcode1 = getcode(x1,y1);

}else{

x2 = x;

y2 = y;

outcode2 = getcode(x2,y2);

}

}

}

setcolor(WHITE);

printf("After clipping:");

if(accept)

line(x1,y1,x2,y2);

getch();

closegraph();

}

