#include "drawpoly.h"

#include "ui\_drawpoly.h"

#include "QMouseEvent"

drawpoly::drawpoly(QWidget \*parent) :

QMainWindow(parent),

ui(new Ui::drawpoly)

{

ui->setupUi(this);

}

drawpoly::~drawpoly()

{

delete ui;

}

void drawpoly ::draw()

{

QPainter p(this);

i=flag=0;

x[n]=x[0];

y[n]=y[0];

int j;

for(j=0;j<n;j++)

p.drawLine(x[j],y[j],x[j+1],y[j+1]);

}

void drawpoly::fill()

{

QPainter paint(this);

int maxy=0,miny=y[0],p,point[10],dx,dy;

float m[15];

for(int j=0;j<n;j++)

{

if(y[j]>maxy)

maxy=y[j];

if(y[j]<miny)

miny=y[j];

dx=x[j]-x[j+1];

dy=y[j]-y[j+1];

if(dx==0)

m[j]=0;

if(dy==0)

m[j]=1;

if(dx!=0 && dy!=0)

m[j]=(float)(dx)/(dy);

}

for(int j=miny;j<=maxy;j++)

{

p=0;

int k,max,min;

for(k=0;k<n;k++)

{

if(y[k]>y[k+1])

{

max=y[k];

min=y[k+1];

}

else

{

max=y[k+1];

min=y[k];

}

if(max>j&&min<=j)

{

point[p]=((j-y[k])\*m[k])+x[k];

p++;

}

}

sort(point,p);

for(k=0;k<p-1;k+=2)

paint.drawLine(point[k],j,point[k+1],j);

}

}

void drawpoly::sort(int arr[], int l)

{

int temp;

for(int j=0;j<l;j++)

for(int k=0;k<l-1-j;k++)

{

if(arr[k]>arr[k+1])

{

temp=arr[k];

arr[k]=arr[k+1];

arr[k+1]=temp;

}

}

}

void drawpoly::paintEvent(QPaintEvent \*)

{

if(flag==2)

draw();

if(flag==3)

{

draw();

fill();

}

}

void drawpoly::mousePressEvent(QMouseEvent \*)

{

if(i<n)

{

x[i]=QCursor::pos().x();

y[i]=QCursor::pos().y();

i++;

}

}

void drawpoly::on\_pushButton\_clicked()//select

{

flag=0;

n=ui->textEdit->toPlainText().toInt();

update();

}

void drawpoly::on\_pushButton\_2\_clicked()//draw

{

flag=2;

update();

}

void drawpoly::on\_pushButton\_3\_clicked()//fill

{

flag=3;

update();

}

**OUTPUT:**

Selecting 5 points by mouse.

We get the following after filling :

