Assignment 4

#include "mainwindow.h"

#include "ui\_mainwindow.h"

#include "QMouseEvent"

#include "QColorDialog"

#include "QColor"

#include "QDebug"

QImage img(400,400,QImage::Format\_RGB888);

QColor color;

MainWindow::MainWindow(QWidget \*parent) :

QMainWindow(parent),

ui(new Ui::MainWindow)

{

j = 0;

start = true;

ui->setupUi(this);

}

MainWindow::~*MainWindow*()

{

delete ui;

}

void MainWindow::*mousePressEvent*(QMouseEvent \*ev)

{

if(start == true)

{

p = ev->pos().x();

q = ev->pos().y();

a[j] = p;

b[j] = q;

if(ev->button() == Qt::RightButton)

{

bresenham\_line(a[0],b[0],a[j-1],b[j-1]);

start = false;

}

else

{

if(j>0)

{

bresenham\_line(a[j-1],b[j-1],a[j],b[j]);

}

}

j++;

}

}

int MainWindow::sign(int p)

{

if(p<0)

return -1;

else

return 1;

}

void MainWindow::bresenham\_line(float x1, float y1, float x2, float y2)

{

float dx,dy,x,y,p;

float i = 0;

x = x1;

y = y1;

dx = abs(x2-x1);

dy = abs(y2-y1);

if(dx>=dy)

{

p = 2\*dy-dx;

while(i<dx)

{

img.setPixel(x,y,color.rgb());

if(p<0)

p = p+2\*dy;

else

{

p = p+2\*(dy-dx);

y = y+sign(y2-y1);

}

x = x+sign(x2-x1);

i++;

}

}

else

{

p = 2\*dx-dy;

while(i<dy)

{

img.setPixel(x,y,color.rgb());

if(p<0)

p = p+2\*dx;

else

{

p = p+2\*(dx-dy);

x = x+sign(x2-x1);

}

y = y+sign(y2-y1);

i++;

}

}

ui->label->setPixmap(QPixmap::fromImage(img));

}

void MainWindow::on\_pushButton\_clicked()

{

color = QColorDialog::getColor(Qt::yellow,this);

}

**Output:**

****