

HEADER

```
#ifndef MAINWINDOW_H
#define MAINWINDOW_H

#include <QMainWindow>

QT_BEGIN_NAMESPACE
namespace Ui { class MainWindow; }
QT_END_NAMESPACE

class MainWindow : public QMainWindow
{
    Q_OBJECT

public:
    MainWindow(QWidget *parent = nullptr);
    ~MainWindow();

private slots:
    void on_pushButton_clicked();
    void Bresenham_circle(float,float,float);
    void display(float,float,int,int);

    void on_pushButton_2_clicked();
    void DDA(int,int,int,int);
    void display1(int,int);

private:
    Ui::MainWindow *ui;
};
#endif // MAINWINDOW_H
```

MAINWINDOW.CPP WALA

```
#include "mainwindow.h"
#include "ui_mainwindow.h"
QImage img(400,400,QImage::Format_RGB888);

MainWindow::MainWindow(QWidget *parent)
    : QMainWindow(parent)
    , ui(new Ui::MainWindow)
{
    ui->setupUi(this);
}
```

```

MainWindow::~MainWindow()
{
    delete ui;
}

void MainWindow::on_pushButton_clicked()
{
    float xc,yc,r;
    xc=ui->textEdit_5->toPlainText().toFloat();
    yc=ui->textEdit_6->toPlainText().toFloat();
    r=ui->textEdit_7->toPlainText().toFloat();
    Bresenham_circle(xc,yc,r);
    ui->label->setPixmap(QPixmap::fromImage(img));
}

void MainWindow::Bresenham_circle(float xc,float yc,float r)
{
    int x = 0, y = r;
    int d = 3 - 2 * r;
    display(xc, yc, x, y);
    while (y >= x)
    {
        // for each pixel we will
        // draw all eight pixels

        x++;

        // check for decision parameter
        // and correspondingly
        // update d, x, y
        if (d > 0)
        {
            y--;
            d = d + 4 * (x - y) + 10;
        }
        else
            d = d + 4 * x + 6;
        display(xc, yc, x, y);
    }
}

void MainWindow::display(float xc,float yc,int x,int y)
{
    img.setPixel(xc+x,yc+y,qRgb(255,255,255));
    img.setPixel(xc-x,yc+y,qRgb(255,255,255));
    img.setPixel(xc+x,yc-y,qRgb(255,255,255));

```

```

        img.setPixel(xc-x,yc-y,qRgb(255,255,255));
        img.setPixel(xc+y,yc+x,qRgb(255,255,255));
        img.setPixel(xc-y,yc+x,qRgb(255,255,255));
        img.setPixel(xc+y,yc-x,qRgb(255,255,255));
        img.setPixel(xc-y,yc-x,qRgb(255,255,255));
    }

void MainWindow::on_pushButton_2_clicked()
{
    int x1,y1,x2,y2;
    x1=ui->textEdit->toPlainText().toInt();
    y1=ui->textEdit_2->toPlainText().toInt();
    x2=ui->textEdit_3->toPlainText().toInt();
    y2=ui->textEdit_4->toPlainText().toInt();
    DDA(x1,y1,x2,y2);
    ui->label->setPixmap(QPixmap::fromImage(img));
}

void MainWindow::DDA(int x1,int y1,int x2,int y2)
{
    float x,y,dx,dy,step;
    int i;
    dx=(x2-x1);
    dy=(y2-y1);
    if(abs(dx)>=abs(dy))
        step=abs(dx);
    else
        step=abs(dy);

    dx=dx/step;
    dy=dy/step;
    x=x1;
    y=y1;
    i=1;
    while(i<=step)
    {
        x=x+dx;
        y=y+dy;
        display1(x,y);
        i=i+1;
    }
}

void MainWindow::display1(int x,int y)
{
    img.setPixel(x,y,qRgb(255,255,255));
}

```

```
}
```

UI

