```cpp
//CG Lab 05 Fractals



#include "mainwindow.h"
#include "ui_mainwindow.h"

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


MainWindow::~MainWindow()
{
    delete ui;
}
QImage   img  (  400,400  ,  QImage  ::  Format_RGB888  )  ;



void MainWindow::DDA(float x1,float y1, float x2, float y2){
    float dx,dy ,length,xin,yin ;
    dx=(x2-x1),dy=(y2-y1);
    if ((abs(dx)) >= (abs(dy)))
    {
        length=abs(dx);
    }
    else
    {
        length=abs(dy);
    }

    xin=dx/length;yin=dy/length;
    for(int i=0; i< length; i++)
    {

        img.setPixel(x1,y1,qRgb(225,100,100));
        x1=x1+xin;y1=y1+yin;
    }
    ui->label->setPixmap(QPixmap::fromImage(img));
}
void MainWindow::koch(int it,int x1,int y1,int x5,int y5)
{
int x2,y2,x3,y3,x4,y4;
int dx,dy;
if (it==0)
{
DDA(x1,y1,x5,y5);
}
else
{
```

```cpp
dx=(x5-x1)/3;
dy=(y5-y1)/3;
x2=x1+dx;
y2=y1+dy;
x3=(int)(0.5*(x1+x5)+sqrt(3)*(y1-y5)/6);
y3=(int)(0.5*(y1+y5)+sqrt(3)*(x5-x1)/6);
x4=2*dx+x1;
y4=2*dy+y1;
koch(it-1,x1,y1,x2,y2);
koch(it-1,x2,y2,x3,y3);
koch(it-1,x3,y3,x4,y4);
koch(it-1,x4,y4,x5,y5);
}

};


void MainWindow::on_pushButton_clicked()
{
    int  R;
    R   =  ui->textEdit->toPlainText().toFloat();
    koch(R,150,20,20,280);
    koch(R,280,280,150,20);
    koch(R,20,280,280,280);
};
```