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 snowflake(int,int,int,int,int);
 void displayDDA(int,int,int,int);
private:
 Ui::MainWindow *ui;
};
#endif // MAINWINDOW_H
```

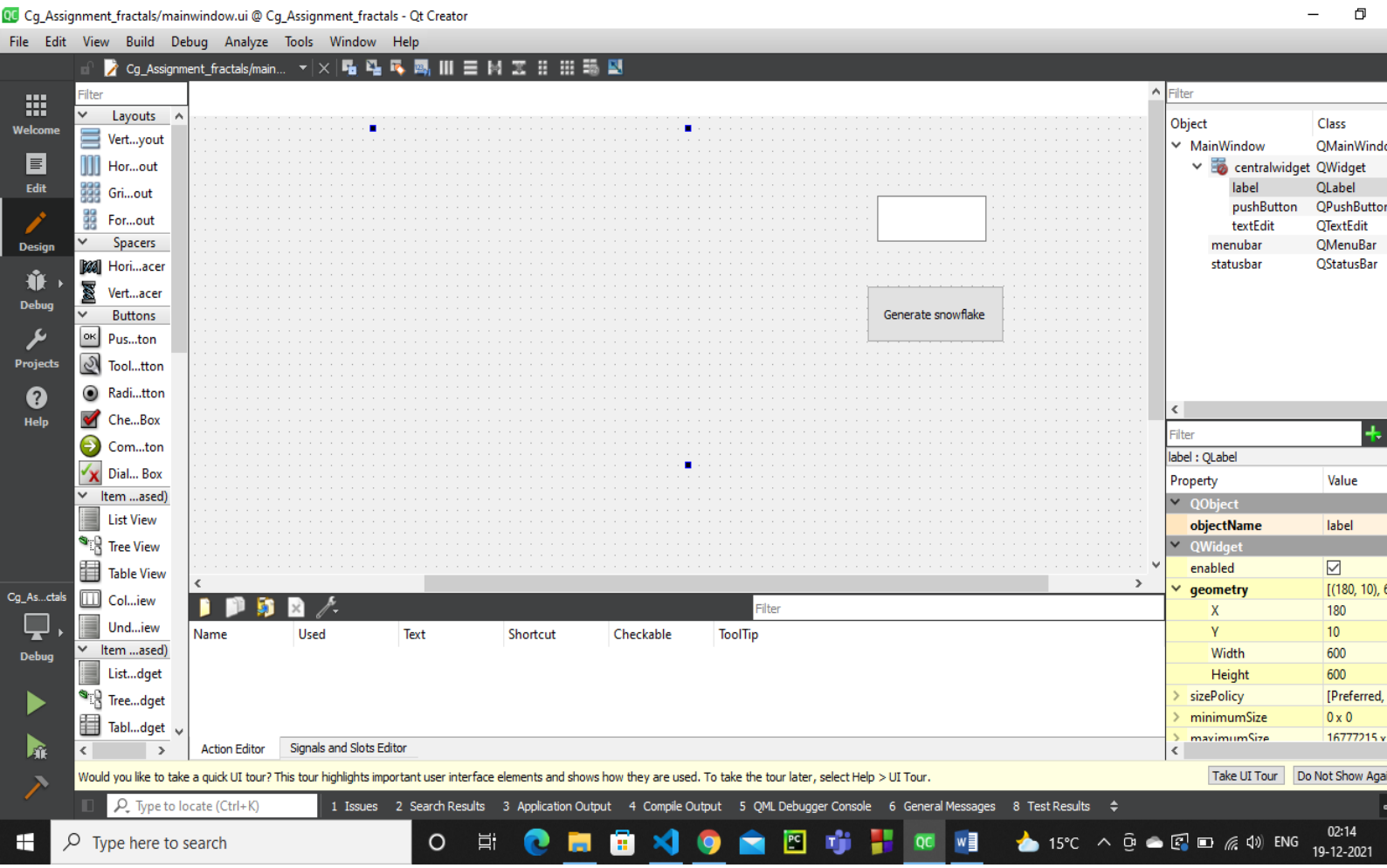
MAINWINDOW

```
#include "mainwindow.h"
#include "ui_mainwindow.h"
QImage img(600,600,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()
{
 int level;
 level=ui->textEdit->toPlainText().toInt();
 int x1=20,x5=300;
```

```
 int y1=280,y5=280;
 snowflake(level,x1,y1,x5,y5);
 ui->label->setPixmap(QPixmap::fromImage(img));
}
void MainWindow::displayDDA(int x1,int y1, int x2, int y2){
 float x,y,dx,dy,l,i=0;
 QRgb value;
 value=qRgb(0,255,0);
 l=std::abs(x2-x1)>std::abs(y2-y1)?std::abs(x2-
x1):std::abs(y2-y1);
 dx=(x2-x1)/l;
 dy=(y2-y1)/l;
 x=x1;
 y=y1;
 while(i<l){

img.setPixel(static_cast<int>(x),static_cast<int>(y),value);
 x=x+dx;
 y=y+dy;
 i++;
 }
}
void MainWindow::snowflake(int order,int x1,int y1, int x5,
int y5){
 int delX,delY,x2,y2,x3,y3,x4,y4;
 if(order==1)
 displayDDA (x1,y1,x5,y5);
 else{
 delX=x5-x1;
 delY=y5-y1;
 x2=x1+delX/3;
 y2=y1+delY/3;
 x3=int((x1+x5)/2+(sqrt(3.0)/6)*(y1-y5));
 y3=int((y1+y5)/2+(sqrt(3.0)/6)*(x5-x1));
 x4=x1+delX*2/3;
 y4=y1+delY*2/3;
 snowflake(order-1,x1,y1,x2,y2);
 snowflake(order-1,x2,y2,x3,y3);
 snowflake(order-1,x3,y3,x4,y4);
 snowflake(order-1,x4,y4,x5,y5);
 }
}
```

UI


Cg_Assignment_fractals/mainwindow.ui @ Cg_Assignment_fractals - Qt Creator
File Edit View Build Debug Analyze Tools Window Help
Generate snowflake
Would you like to take a quick UI tour? This tour highlights important user interface elements and shows how they are used. To take the tour later, select Help > UI Tour.
Take UI Tour
Do Not Show Aga
Type here to search
15°C
ENG
02:14
19-12-2021