Graphical User Interface
Assignment – I1 Solution

This Solution is due to Jared Coplin

Main.cpp

```
#include "window.h"
#include <QApplication>

int main(int argc, char *argv[])
{
   QApplication a(argc, argv);
   Window w;
   w.show();

   return a.exec();
}
```

Window.cpp

```
#include "window.h"
#include <QRadioButton>
#include <QSpinBox>
#include <QDial>
#include <QSlider>
#include <QComboBox>
#include <QVBoxLayout>

Window::Window(){
   createControls();

   QHBoxLayout *layout = new QHBoxLayout;
   layout->addWidget(orientBoxesGroup);
   layout->addWidget(rotationBoxesGroup);
   layout->addWidget(sizeBoxesGroup);
   layout->addWidget(illumBoxesGroup);
   layout->addWidget(colorBoxesGroup);

   setLayout(layout);

   setWindowTitle(tr("Project I1"));
}

void Window::Orientation(){
   orientBoxesGroup = new QGroupBox(tr("Orientation"));

   //allocate and intialize orientation radio buttons
   QRadioButton *landscape_button = new QRadioButton(tr("Landscape"));
   QRadioButton *portrait_button = new QRadioButton(tr("Portrait"));
```

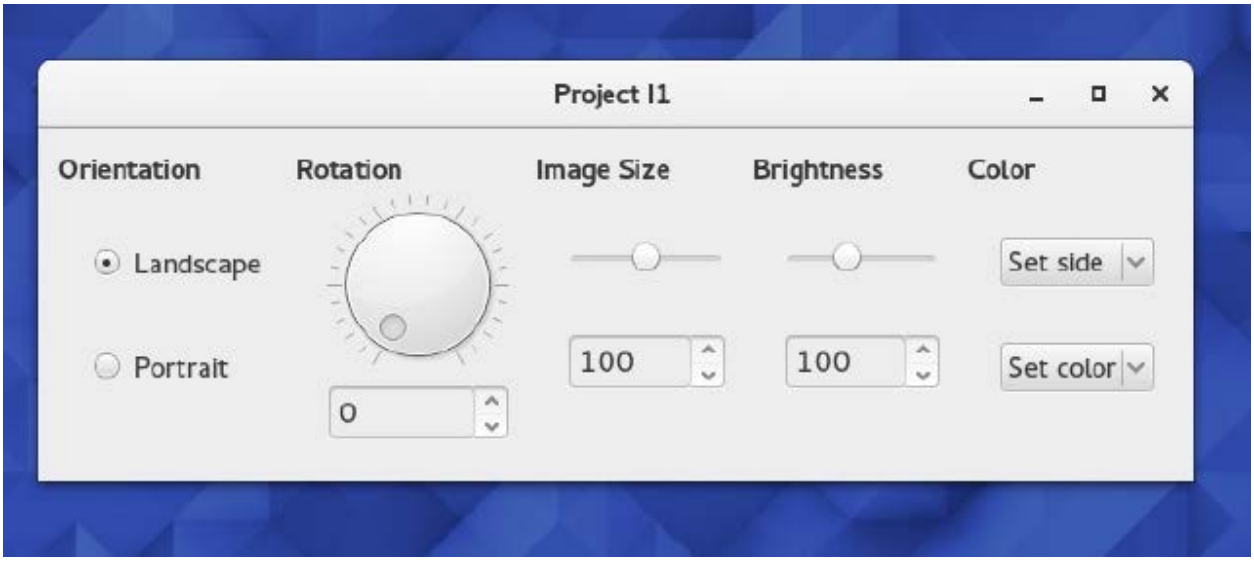
```
    landscape_button->setChecked(true);

    QVBoxLayout *orientBoxLayout = new QVBoxLayout;
    orientBoxLayout->addWidget(landscape_button);
    orientBoxLayout->addWidget(portrait_button);

    orientBoxesGroup->setLayout(orientBoxLayout);
}

void Window::Rotation(){
    rotationBoxesGroup = new QGroupBox(tr("Rotation"));

    //allocate and initialize rotation controls
    QSpinBox *rot_spinbox = new QSpinBox;
    QDial *rot_dial = new QDial;

    rot_dial->setNotchesVisible(true);
    rot_dial->setRange(0,100);
    rot_spinbox->setRange(0,100);
    rot_dial->setMinimumSize(100,100);
    rot_dial->setWrapping(false);
    rot_spinbox->setValue(0);
    rot_dial->setValue(0);
    rot_spinbox->setSingleStep(1);

    rot_dial->connect(rot_dial,SIGNAL(valueChanged(int)),rot_spinbox,SLOT(setValue(int)));
    rot_spinbox->connect(rot_spinbox,SIGNAL(valueChanged(int)),rot_dial,SLOT(setValue(int)));

    QVBoxLayout *rotationBoxLayout = new QVBoxLayout;
    rotationBoxLayout->addWidget(rot_dial);
    rotationBoxLayout->addWidget(rot_spinbox);

    rotationBoxesGroup->setLayout(rotationBoxLayout);
}

void Window::Size(){
    sizeBoxesGroup = new QGroupBox(tr("Image Size"));

    //allocate and initialize image size controls
    QSpinBox *sz_spinbox = new QSpinBox;
    QSlider *sz_slider = new QSlider(Qt::Horizontal);

    sz_slider->setRange(50,150);
    sz_spinbox->setRange(50,150);
    sz_slider->setValue(100);
    sz_spinbox->setValue(100);

    sz_slider->connect(sz_slider,SIGNAL(valueChanged(int)),sz_spinbox,SLOT(setValue(int)));
    sz_spinbox->connect(sz_spinbox,SIGNAL(valueChanged(int)),sz_slider,SLOT(setValue(int)));

    QVBoxLayout *sizeBoxLayout = new QVBoxLayout;
```

```
    sizeBoxLayout->addWidget(sz_slider);
    sizeBoxLayout->addWidget(sz_spinbox);

    sizeBoxesGroup->setLayout(sizeBoxLayout);
}

void Window::Illum(){
    illumBoxesGroup = new QGroupBox(tr("Brightness"));

    //allocate and initialize brightness controls
    QSpinBox *brt_spinbox = new QSpinBox;
    QSlider *brt_slider = new QSlider(Qt::Horizontal);

    brt_slider->setRange(0,255);
    brt_spinbox->setRange(0,255);
    brt_slider->setValue(100);
    brt_spinbox->setValue(100);

    brt_slider->connect(brt_slider,SIGNAL(valueChanged(int)),brt_spinbox,SLOT(setValue(int)));
    brt_spinbox->connect(brt_spinbox,SIGNAL(valueChanged(int)),brt_slider,SLOT(setValue(int)));

    QVBoxLayout *illumBoxLayout = new QVBoxLayout;
    illumBoxLayout->addWidget(brt_slider);
    illumBoxLayout->addWidget(brt_spinbox);

    illumBoxesGroup->setLayout(illumBoxLayout);
}

void Window::Color(){
    colorBoxesGroup = new QGroupBox(tr("Color"));

    //allocate and initialize color controls
    QComboBox *clr_side_dropdown = new QComboBox;
    QComboBox *clr_clr_dropdown = new QComboBox;

    clr_clr_dropdown->setMaxCount(5);
    clr_side_dropdown->setMaxCount(7);

    clr_side_dropdown->addItem("Set side");
    clr_side_dropdown->addItem("1");
    clr_side_dropdown->addItem("2");
    clr_side_dropdown->addItem("3");
    clr_side_dropdown->addItem("4");
    clr_side_dropdown->addItem("5");
    clr_side_dropdown->addItem("6");

    clr_clr_dropdown->addItem("Set color");
    clr_clr_dropdown->addItem("R");
    clr_clr_dropdown->addItem("S");
    clr_clr_dropdown->addItem("T");
    clr_clr_dropdown->addItem("U");
```

```
    QVBoxLayout *colorBoxLayout = new QVBoxLayout;
    colorBoxLayout->addWidget(clr_side_dropdown);
    colorBoxLayout->addWidget(clr_clr_dropdown);

    colorBoxesGroup->setLayout(colorBoxLayout);
}

void Window::createControls(){
    Orientation();
    Rotation();
    Size();
    Illum();
    Color();
}
```

Window.h

```
#ifndef WINDOW_H
#define WINDOW_H

#include <QWidget>
#include <QGroupBox>

class Window : public QWidget
{
    Q_OBJECT

public:
    Window();

private:

    void createControls();

    void Orientation();
    void Rotation();
    void Size();
    void Illum();
    void Color();

    QGroupBox *orientBoxesGroup;
    QGroupBox *rotationBoxesGroup;
    QGroupBox *sizeBoxesGroup;
    QGroupBox *illumBoxesGroup;
    QGroupBox *colorBoxesGroup;

};

#endif // WINDOW_H
```


Project I1
Orientation
Rotation
Image Size
Brightness
Color
Landscape
Portrait
0
100
100
Set side
Set color