Notes to self

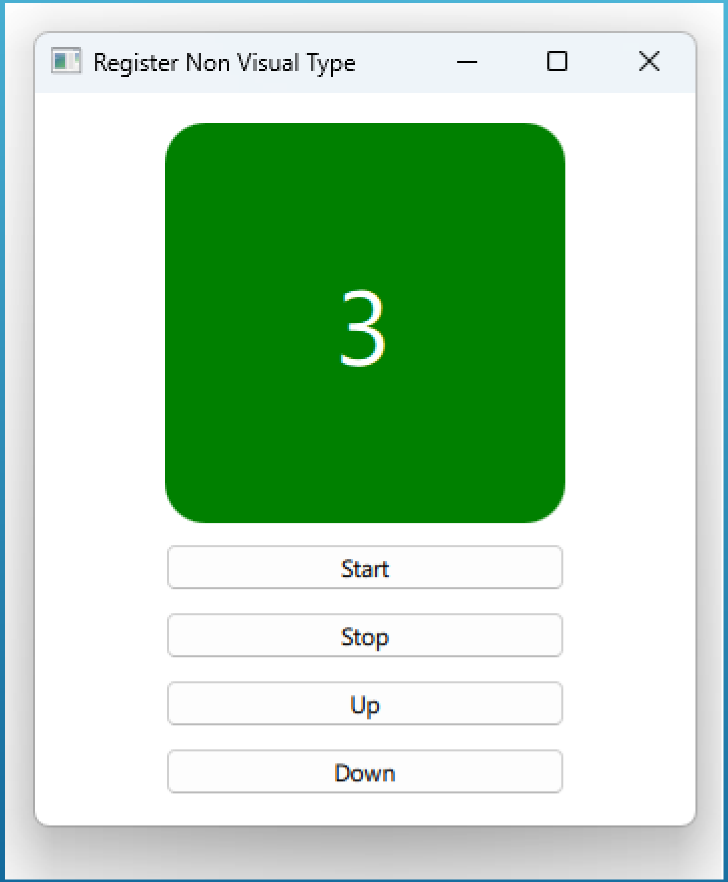
```
. Using qmlRegisterType to register C++ types into the QML system

        . The type becomes usable in QML like so :
              Counter{
                  id : mCounter
              }

         . Properties decoarated with the Q_PROPERTY macro become accessible
           through QML :
              .             Text {
                              id: mText
                              text: mCounter.count // <<<<<==== We are accessing the count in QML
                              anchors.centerIn: parent
                              font.pointSize: 40
                              color: "white"
                            }

. Use the Qt5 course as a reference and improvise.
```

Custom Types : Counter



Counter

```
class Counter : public QObject
{
    Q_OBJECT
    Q_PROPERTY(int count READ count WRITE setCount NOTIFY countChanged)
    Q_PROPERTY(bool up READ up WRITE setUp NOTIFY upChanged)
public:
    explicit Counter(QObject *parent = nullptr);
    int count() const;
    bool up() const;
    void setCount(int count);
    void setUp(bool up);
    //Helper methods
    Q_INVOKABLE void start();
    Q_INVOKABLE void stop();
signals:
    void countChanged(int count);
    void upChanged(bool up);
private :
    int m_count;
    bool m_up;
    QTimer * m_timer;
};
```

Counter : Constructor

```
Counter::Counter(QObject *parent) : QObject(parent),
    m_count(0),
    m_up(true),
    m_timer(new QTimer(this))
{
    qDebug() << "Created Counter instance";
    m_timer->setInterval(500);
    connect(m_timer,&QTimer::timeout,[=](){

        if(m_up){
            ++m_count;
        }else{
            --m_count;
        }
        emit countChanged(m_count);//IMPORTANT FOR PROPERTY BINDINGS
    });
}
```

main.cpp : Register the type

```cpp
int main(int argc, char *argv[])
{
    QGuiApplication app(argc, argv);

    //Register the type
    qmlRegisterType<Counter>("com.blikoon.counter",1,0,"Counter");

    QQmlApplicationEngine engine;
    const QUrl url(u"qrc:/2-CustomTypesCounter/main.qml"_qs);
    engine.load(url);
    return app.exec();
}
```

Use the Type in QML

```
//import com.blikoon.counter 1.0
import com.blikoon.counter
Counter{
    id : mCounter
}
Column{
    Rectangle{
        color: (mCounter.count >= 0) ? "green": "red"
        Text {
            id: mText
            text: mCounter.count
        }
    }
    Button{
        text : "Start"
        onClicked: {
            mCounter.start()
        }
    }
}
```

Other buttons

```
Button{
    text : "Stop"
    onClicked: {
        mCounter.stop()
    }
}
Button{
    text : "Up"
    onClicked: {
        mCounter.up = true;
    }
}
Button{
    text : "Down"
    onClicked: {
        mCounter.up = false;
    }
}
```