How to use QCompass sensor

This code snippet shows how to use Qt's QCompass sensor and display sensor data on the screen.

Project File (.pro file)

- Add the Qt Mobility project configuration option in the **.Pro** file as shown below

```
CONFIG += mobility
MOBILITY += sensors
```

- here is the full project(.pro) file.

```
QT       += core gui

TARGET = QtCompasSensor
TEMPLATE = app


SOURCES += main.cpp\
        qtcompassensor.cpp

HEADERS  += qtcompassensor.h

CONFIG += mobility
CONFIG += debug
MOBILITY = sensors

symbian {
    TARGET.UID3 = 0xe00fb3c0
    # TARGET.CAPABILITY +=
    TARGET.EPOCSTACKSIZE = 0x14000
    TARGET.EPOCHEAPSIZE = 0x020000 0x800000
}
```

Header

- Add the Qt Mobility namespace to use Qt Mobiltiy in header file

```
QTM_USE_NAMESPACE
```

Here is the qtcompassensor.h header file.

```
#include <QtGui/QMainWindow>
#include <QGraphicsView>
#include <QBasicTimer>
#include <QTimer>
#include <QCompass> // Add Sensor Class

// add Qt Mobility Project Namespace
QTM_USE_NAMESPACE
```


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```
class QGraphicsRectItem;
class QGraphicsSimpleTextItem;

class QtCompasSensor : public QGraphicsView
{
    Q_OBJECT

public:
    QtCompasSensor(QWidget *parent = 0);

protected:
    bool event(QEvent *event);

private:
    void updateCompasSensor();

private:
    QGraphicsRectItem *Rect;
    QGraphicsSimpleTextItem *text;
    QCompass *CompasSensor;
    QBasicTimer Timer;
    QTimer inactiveTimer;
};
```

Source

Here is the qtcompassensor.cpp source file.

```
#include "qtcompassensor.h"
#include <QGraphicsRectItem>
#include <QGraphicsSimpleTextItem>
#include <QResizeEvent>

// include timer event
#include <QTimerEvent>
#include <QDebug>

QtCompasSensor::QtCompasSensor(QWidget *parent)
    : QGraphicsView(parent), Rect(0), text(0), CompasSensor(0)
{
    QGraphicsScene *scene = new QGraphicsScene(this);
    setScene(scene);

    Rect = new QGraphicsRectItem();

    text = new QGraphicsSimpleTextItem(Rect);
    text->setBrush(Qt::gray);
    scene->addItem(Rect);

    CompasSensor = new QCompass(this);
    inactiveTimer.setSingleShot(true);

    if (!Timer.isActive())
```


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```
        Timer.start(20, this);

    // start the sensor
    if (!CompasSensor->isActive())
        CompasSensor->start();

    if (!CompasSensor->isActive())
    {
        qDebug() << "Compas Sensor didn't start!" << endl;
    }

    setHorizontalScrollBarPolicy(Qt::ScrollBarAlwaysOff);
    setVerticalScrollBarPolicy(Qt::ScrollBarAlwaysOff);
}

bool QtCompasSensor::event(QEvent *event)
{
    switch (event->type()) {
    case QEvent::Timer:
        if (static_cast<QTimerEvent*>(event)->timerId() == Timer.timerId())
            updateCompasSensor(); // update the sensor data
        break;
    default:
        break;
    }
    return QGraphicsView::event(event);
}

void QtCompasSensor::updateCompasSensor()
{
    QCompassReading *reading = CompasSensor->reading();
    qreal azi = 0.0f;
    qreal calibrationLevel = 0.0f;
    if (reading) {
        azi = reading->azimuth();
        calibrationLevel = reading->calibrationLevel();

        // set the text and display it on the screen
        QLocale c(QLocale::C);
        text->setText("azimuth: " + c.toString(azi) + "\n\nCompass Sensor Calibration
Level: " + c.toString(calibrationLevel));

     }
}
```

Postconditions

Here is the QtCompassSensor Application's Screenshot. You can change the Compass Sensor data like azimuth and Calibration Level from Qt Simulator.

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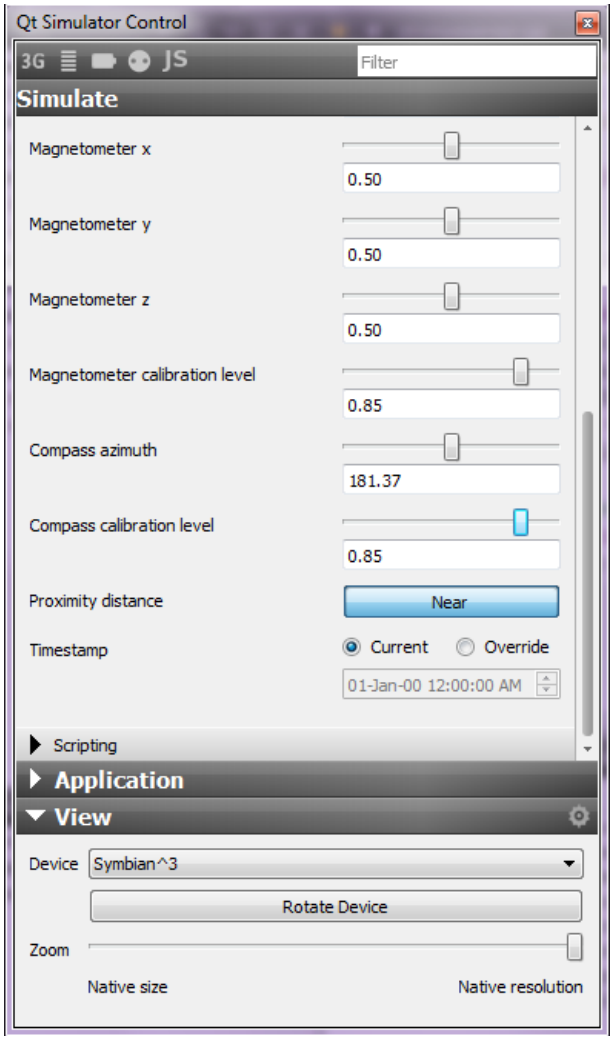

Example Application

Example application can be found on the following link File:QtCompassSensorExample.zip.

Related Articles

- Turning phone into magnetic compass using Qt mobility project
- Accelerometer Sensor Example Using QtMobility Project
- QtMagnetometer Sensor Example Using QtMobility Project
- Qt Mobility 1.2

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