Accelerometer Sensor Example Using QtMobility Project

This code snippet shows how to use the Qt Mobilty QAccelerometer and Sensor API s to get and display sensor data.

Preconditions

Read this for how to CS001615 - Setting up Qt Mobility

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 = QtAccelerometer
TEMPLATE = app


SOURCES += main.cpp\
        accelerometer.cpp

HEADERS  += accelerometer.h

CONFIG += mobility
CONFIG += debug
MOBILITY = sensors

symbian {
    TARGET.UID3 = 0xe239264e
    # TARGET.CAPABILITY +=
    TARGET.EPOCSTACKSIZE = 0x14000
    TARGET.EPOCHEAPSIZE = 0x020000 0x800000
}
```

Header

Here is the accelerometer.h header file.

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

// add Qt Mobility Project Namespace
QTM_USE_NAMESPACE

class QGraphicsRectItem;
```


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```
class QGraphicsSimpleTextItem;


class Accelerometer : public QGraphicsView
{
    Q_OBJECT

public:
    Accelerometer(QWidget *parent = 0);

protected:
    bool event(QEvent *event);

private:
    void updateXYZPosition();

private:
    QGraphicsRectItem *Rect;
    QGraphicsSimpleTextItem *text;
    QAccelerometer *accelerometerSensor;
    QBasicTimer Timer;
    QTimer inactiveTimer;
};
```

Source

```
#include "accelerometer.h"

#include <QGraphicsRectItem>
#include <QGraphicsSimpleTextItem>
#include <QResizeEvent>
#include <QTimerEvent> // timer event
#include <QDebug>

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

    Rect = new QGraphicsRectItem();

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

    accelerometerSensor = new QAccelerometer(this);
    inactiveTimer.setSingleShot(true);

    if (!Timer.isActive())
        Timer.start(20, this);

    // start the sensor
    if (!accelerometerSensor->isActive())
```


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```
        accelerometerSensor->start();

    if (!accelerometerSensor->isActive())
    {
        qDebug() << "accelerometer sensor didn't start!" << endl;
    }

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

bool Accelerometer::event(QEvent *event)
{
    switch (event->type()) {
    case QEvent::Timer:
        if (static_cast<QTimerEvent*>(event)->timerId() == Timer.timerId())
            updateXYZPosition(); // update the xyz position
        break;
    default:
        break;
    }
    return QGraphicsView::event(event);
}

void Accelerometer::updateXYZPosition()
{
    QAccelerometerReading *reading = accelerometerSensor->reading();
    qreal xacceleration = 0.0f;
    qreal yacceleration = 0.0f;
    qreal zacceleration = 0.0f;
    if (reading) {
        xacceleration = reading->x();
        yacceleration = reading->y();
        zacceleration = reading->z();

        // for debug purpose
        qDebug()  << "xacceleration x" << endl;
        qDebug()  << xacceleration << endl;

        qDebug()  << "yacceleration y" << endl;
        qDebug()  << yacceleration << endl;

        qDebug()  << "zacceleration z" << endl;
        qDebug()  << zacceleration << endl;

        // set the text and display it on the screen
        QLocale c(QLocale::C);
        text->setText("x:  " + c.toString(xacceleration) + " y:  " +
c.toString(yacceleration) + " z:  " + c.toString(zacceleration));

     }
}
```

Postconditions

Here is the QtAccelerometer Application's Screenshot. You can change the Accelerometer Sensor data from Qt Simulator.

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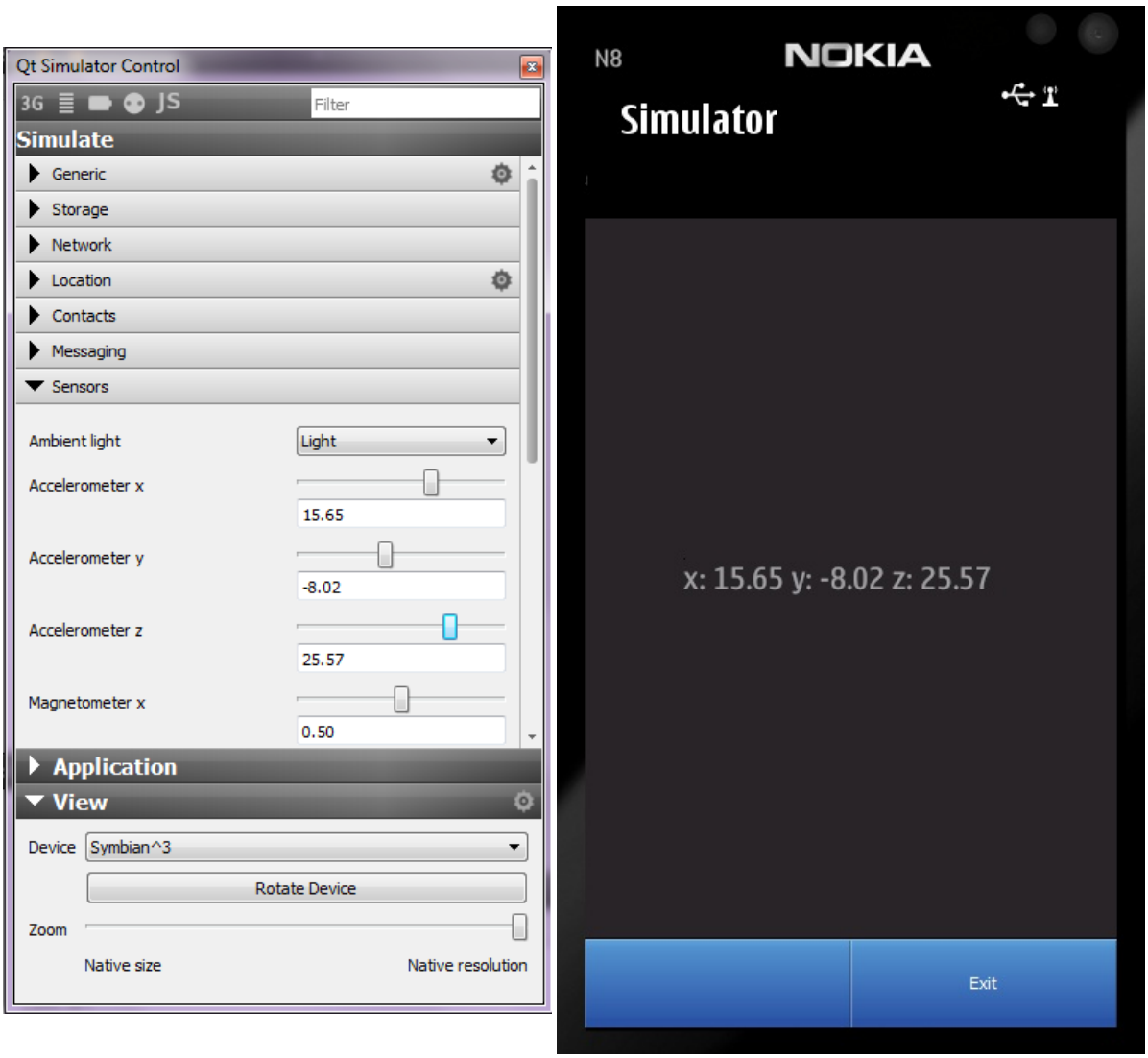

Example Applications

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

Related Articles

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

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