Turning phone into magnetic compass by using QML and Qt Mobility

This code snippet shows how we can convert our Magnetic North sensor enabled phone to a compass by using QML and Qt Mobility. The compass image is rotated around based on the physical alignment of phone with respect to north. There are two modules involved here. Qt mobility plug-ins for provides the angle and user interface shows the compass image by using QML. This example creates Qt plug-in for Sensor according to How to install and use Qt Quick extension plug-in in Symbian article.

How Qt Mobility emits angle changes

When the orientation of the device is changed we emit AngleChanged signal and update the property m_AnglefromNorth. The changes are detected by custom QML element.

```
 if(m_AnglefromNorth !=  (int)(reading->azimuth()))
 {
  emit AngleChanged();
  m_AnglefromNorth = reading->azimuth();

 }
```

The custom QML element (Compass) is created with the following QML code:

```
import QtQuick 1.0

Rectangle {

    id: compass
    width: 200; height: 200; color: "gray"

    property variant anglefromNorth
    property variant calibrationlevel

    Image{
        id: compassimageid
        source: "compass.png"
        smooth: true
        rotation : -anglefromNorth
    }
}
```

Finally a Qt Quick project is created to show the image and rotation on UI:

```
import QtQuick 1.0
import com.nokia.qmlcompass 1.0

  Compass { // this comes from Compass.qml
      CompassImage { // this class is defined in C++ (plugin.cpp)
          id: comimage
      }
      anglefromNorth: comimage.angle
      calibrationlevel: comimage.calibration
     MouseArea
     {
         anchors.fill: parent
         // if you click on screen it will exit
         onClicked:
         {
             Qt.quit();
         }
     }
 }
```

Example Applications

Example application was tested with N8 compiled and linked with QTSDK 1.1 TP. Can be found from following link: File:QtQmlCompas.zip

Related Article

- How to turn the N97 into a Magnetic Compass
- Turning phone into magnetic compass using Qt mobility project

 (C) Copyright Nokia 2013. All rights reserved.

 (C) Copyright Nokia 2013. All rights reserved.