Fetching a map tile in Qt using Google Maps

This code snippet demonstrates how to fetch a map tile in Qt using the Location module of Qt Mobility and Google Maps. It is assumed here that you have set up Qt Mobility in your development environment and on your device. For more information, see CS001615 - Setting up Qt Mobility.

Qt project file

Add the networking features as well as the Location module into the project:

```
QT += network
CONFIG += mobility
MOBILITY = location
```

This snippet requires the following capabilities:

```
symbian: {
    TARGET.CAPABILITY = NetworkServices \
        Location
}
```

Header

```
#include <QtNetwork/QNetworkAccessManager>
#include <QtNetwork/QNetworkReply>

// QtMobility name space
QTM_USE_NAMESPACE

class MainWindow : public QMainWindow
{
    Q_OBJECT

public:
    /**
     * Paints the display.
     */
    void paintEvent(QPaintEvent* paintEvent);

public slots:
    /**
     * Called when the network request finishes.
     */
    void handleNetworkData(QNetworkReply* reply);

private:
    /**
     * Fetches the map image.
     */
    void fetchMap(const QSize& size, qreal latitude, qreal longitude);

private:
    QNetworkAccessManager networkAccessManager;
    QPixmap mapPixmap;
}
```


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Source

```
#include <QtGui/QImage>
#include <QtGui/QPainter>
#include <QtGui/QPixmap>
#include <QtNetwork/QNetworkRequest>
```

```
MainWindow::MainWindow(QWidget* parent) : QMainWindow(parent)
{
    // UI-related code omitted for brevity

    // When the network request finishes, call the function which handles
    // the received data
    QObject::connect(&networkAccessManager,
                     SIGNAL(finished(QNetworkReply*)),
                     this,
                     SLOT(handleNetworkData(QNetworkReply*)));
}

void MainWindow::positionUpdated(QGeoPositionInfo geoPositionInfo)
{
    // Location fetching omitted here for brevity. Refer to the See also
    // section for more information.

    qreal latitude = geoCoordinate.latitude();
    qreal longitude = geoCoordinate.longitude();

    // Fetch the map using the display size and the coordinates
    fetchMap(size(), latitude, longitude);
}

void MainWindow::fetchMap(const QSize& size, qreal latitude, qreal longitude)
{
    const QString GOOGLE_MAPS_URL_TEMPLATE =
            "http://maps.google.com/maps/api/staticmap?
center=%1,%2&zoom=12&size=%3x%4&maptype=mobile&markers=color:red|label:Y|%1,%2&sensor=false";
    QUrl url = QUrl(GOOGLE_MAPS_URL_TEMPLATE.arg(
            QString::number(latitude), QString::number(longitude),
            QString::number(size.width()), QString::number(size.height())));
    QNetworkRequest request;
    request.setUrl(url);
    networkAccessManager.get(request);
}

void MainWindow::handleNetworkData(QNetworkReply* reply)
{
    QImage image;
    if (reply->error() == QNetworkReply::NoError) {
        image.load(reply, 0);
        if (!image.isNull()) {
            // Convert QImage into QPixmap and store it into a member
            // variable
            mapPixmap = QPixmap::fromImage(image);
        }
```


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```
    }
    reply->deleteLater();

    // Update the display
    update();
}

void MainWindow::paintEvent(QPaintEvent* paintEvent)
{
    // Draw the map tile onto the display
    QPainter painter(this);
    painter.drawPixmap(0, 0, mapPixmap);
}
```

Postconditions

A map tile is fetched from Google Maps, based on the current location, and painted on the display.

See also

- CS001615 - Setting up Qt Mobility
- Getting the location in Qt
- http://doc.qt.nokia.com/qtmobility-1.0/location-overview.html

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