Archived:Creating a stop watch with QWidgets

Archived: This article is archived because it is not considered relevant for third-party developers creating commercial solutions today. If you think this article is still relevant, let us know by adding the template {{ReviewForRemovalFromArchive|user=~~~~|*write your reason here*}}.

Qt Quick should be used for all UI development on mobile devices. The approach described in this article (based on QWidget) is deprecated.

This code snippet demonstrates how to create a simple stop watch QWidget based application. It provides a start, stop and reset functionality.

Overview

Here a widget is created with QLCDNumber and a three buttons. As soon as user clicks on the start button it starts a timer which generates a signal timeout every second. When a stop button is clicked it simply stops the timer and clicking reset will reset and stop the timer.

While testing this on a real device it is required that screen light should remain on until the stopwatch is running. `XQUtils`, class of Mobile extension, is used for resetting the inactivity timer and hence maintaining the screen light on. The `XQUtils::resetInactivityTimer()` is used to reset the system inactivity timer to keeps the background lights of the device on and Connect the timer's `timeout()` signal to `XQUtils::resetInactivityTime()`.

Related Link

- Read more about How to use QLCDNumber in Qt
- Read more about: QTimer
- See Creating a Digital Clock QWidget

Various Function of QTime And QLCDNumber

- Sets the time to hour h, minute m, seconds s and milliseconds ms.

```
time = new QTime;
time->setHMS(0,0,0,0);
```

- Sets this time to the current time. This is practical for timing.

```
QTime t;
t.start();
some_lengthy_task();
qDebug("Time elapsed: %d ms", t.elapsed());
```

- This property holds the style of the LCDNumber.

```
num->setSegmentStyle(QLCDNumber::Filled);
```

- This property holds the current number of LCD digits displayed.

```
num->setNumDigits(4);
```

Source File

```
#include "stopwatch.h"
#include <QString>
#include "xqutils.h"
stopwatch::stopwatch(QWidget *parent)
    : QWidget(parent)
{
 num = new QLCDNumber(this);
 num->setNumDigits(8);
 time = new QTime(this);
 time->setHMS(0,0,0,0);
 timer = new QTimer(this);
 XQUtils *utils = new XQUtils(this);
 QTimer *timer11 = new QTimer(this);
 connect(timer11, SIGNAL(timeout()), utils, SLOT(resetInactivityTime()));
 timer11->start(1000);
 connect(timer, SIGNAL(timeout()), this, SLOT(showTime()));
 i=0;
 layout = new QVBoxLayout(this);
 hlayout = new QHBoxLayout(this);
 reset = new QPushButton("Reset",this);
 start = new QPushButton("Start",this);
 stop = new QPushButton("Stop",this);
 connect(reset,SIGNAL(clicked()),this,SLOT(resetTime()));
 connect(start,SIGNAL(clicked()),this,SLOT(startTime()));
 connect(stop,SIGNAL(clicked()),this,SLOT(stopTime()));
 QString text = time->toString("hh:mm:ss");
 num->display(text);
 num->setStyleSheet("* { background-color:rgb(199,147,88);color:rgb(255,255,255); padding: 7px}}");
 num->setSegmentStyle(QLCDNumber::Filled);
 setStyleSheet("* { background-color:rgb(236,219,187)}}");

 hlayout->addWidget(start);
 hlayout->addWidget(stop);
```


(C) Copyright Nokia 2013. All rights reserved.

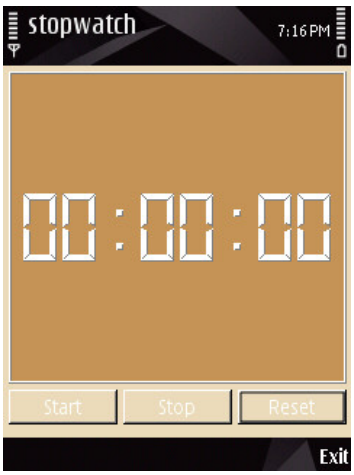
```
 hlayout->addWidget(reset);
 layout->addWidget(num);
 layout->addLayout(hlayout);
 setLayout(layout);
 resize(300,150);
}

stopwatch::~stopwatch()
{
    // No need to delete any object that has a parent which is properly deleted.

}
void stopwatch::resetTime()
 {
 time->setHMS(0,0,0);
 QString text = time->toString("hh:mm:ss");
 num->display(text);
 i=0;
 stop->setDisabled(1);
 start->setEnabled(1);


 stopTime();
 }

void stopwatch::startTime()
 {
  //flag=0;
  start->setDisabled(1);
  stop->setEnabled(1);
  reset->setEnabled(1);
  timer->start(1000);
  }

void stopwatch::stopTime()
  {
  stop->setDisabled(1);
  start->setEnabled(1);
  reset->setEnabled(1);

  timer->stop();
  //flag=1;
  //showTime();
  }


void stopwatch::showTime()
 {QTime newtime;
 //if(flag==1)
  //i=i-1;
 i=i+1;
 newtime=time->addSecs(i);
 QString text = newtime.toString("hh:mm:ss");
 num->display(text);

}
```

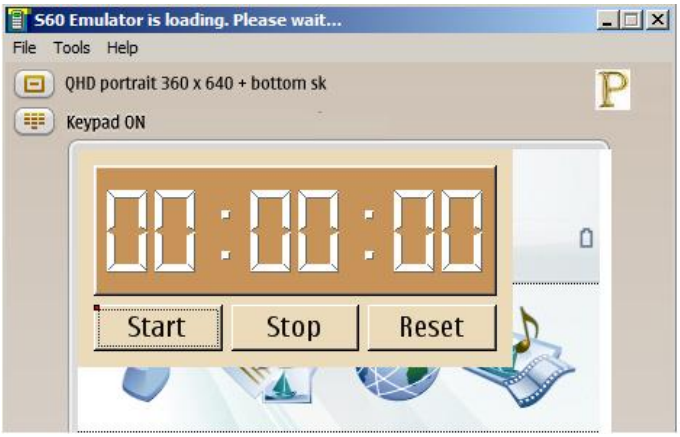
Header File

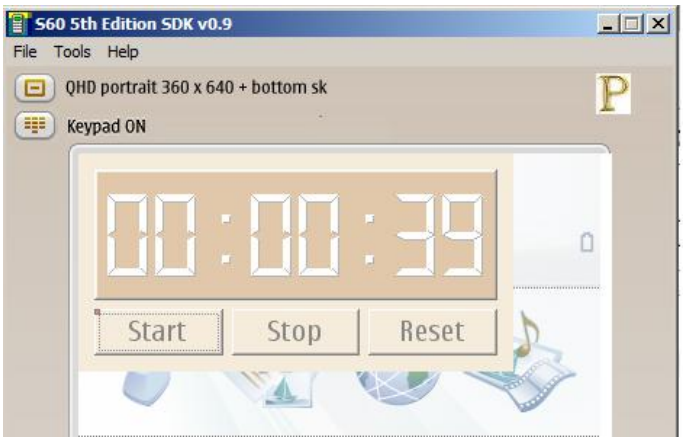
```
#ifndef STOPWATCH_H
#define STOPWATCH_H

#include <QtGui/QWidget>
//#include "ui_stopwatch.h"
#include <QVBoxLayout>
#include <QPushButton>
#include <QLCDNumber>
#include <QTime>
#include <QTimer>
#include <QHBoxLayout>
class stopwatch : public QWidget
{
    Q_OBJECT

public:
 int i;
 bool flag;
 stopwatch(QWidget *parent = 0);
    ~stopwatch();
private slots:
    void resetTime();
    void stopTime();
    void startTime();
    void showTime();
private:
 QTime *time;
 QTimer *timer;
 QTimer *timer11;

 QVBoxLayout *layout;
 QHBoxLayout *hlayout;
 QPushButton *reset;
 QPushButton *start;
 QPushButton *stop;
    QLCDNumber *num;
};

#endif // STOPWATCH_H
```

Screenshots

(C) Copyright Nokia 2013. All rights reserved.







(C) Copyright Nokia 2013. All rights reserved.

(C) Copyright Nokia 2013. All rights reserved.