#include <TimerOne.h>

#include <Wire.h>

#include <MultiFuncShield.h>

//#include <MultiFuncShieldKS0184.h>

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//A033

/\*

For more information and help, please visit https://www.cohesivecomputing.co.uk/hackatronics/arduino-multi-function-shield/part-3/

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Thank you.

\*/

enum CountDownModeValues

{

COUNTING\_STOPPED,

COUNTING

};

byte countDownMode = COUNTING\_STOPPED;

byte tenths = 0;

char seconds = 0;

char minutes = 0;

void setup() {

// put your setup code here, to run once:

Timer1.initialize();

MFS.initialize(&Timer1); // initialize multifunction shield library

MFS.write(0);

Serial.begin(9600);

}

void loop() {

// put your main code here, to run repeatedly:

byte btn = MFS.getButton();

switch (countDownMode)

{

case COUNTING\_STOPPED:

if (btn == BUTTON\_1\_SHORT\_RELEASE && (minutes + seconds) > 0)

{

// start the timer

countDownMode = COUNTING;

}

else if (btn == BUTTON\_1\_LONG\_PRESSED)

{

// reset the timer

tenths = 0;

seconds = 0;

minutes = 0;

MFS.write(minutes\*100 + seconds);

}

else if (btn == BUTTON\_2\_PRESSED || btn == BUTTON\_2\_LONG\_PRESSED)

{

minutes++;

if (minutes > 60)

{

minutes = 0;

}

MFS.write(minutes\*100 + seconds);

}

else if (btn == BUTTON\_3\_PRESSED || btn == BUTTON\_3\_LONG\_PRESSED)

{

seconds += 10;

if (seconds >= 60)

{

seconds = 0;

}

MFS.write(minutes\*100 + seconds);

}

break;

case COUNTING:

if (btn == BUTTON\_1\_SHORT\_RELEASE || btn == BUTTON\_1\_LONG\_RELEASE)

{

// stop the timer

countDownMode = COUNTING\_STOPPED;

}

else

{

// continue counting down

tenths++;

if (tenths == 10)

{

tenths = 0;

seconds--;

if (seconds < 0 && minutes > 0)

{

seconds = 59;

minutes--;

}

if (minutes == 0 && seconds == 0)

{

// timer has reached 0, so sound the alarm

MFS.beep(50, 50, 3); // beep 3 times, 500 milliseconds on / 500 off

countDownMode = COUNTING\_STOPPED;

}

MFS.write(minutes\*100 + seconds);

}

delay(100);

}

break;

}

}