#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;

 }

}