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/* ATB_B1_Temp3.c Created: 25.10.2014 19:44:17 Author: AS + FB*/

#include <avr/io.h>
#include <avr/pgmspace.h>
#include <avr/interrupt.h>
#include <stdlib.h>
#include <stdio.h>
#include <stdbool.h>
#include "main.h"
#include "i2clcd.h"
#include "i2cmaster.h"
#include "lm75.h"
#include <util/delay.h>

void startanzeige()                                    // Titelbild
 {
   lcd_command(LCD_CLEAR);
   _delay_ms(2);
   lcd_printlc(1,4,"Boxtec");
   lcd_printlc(2,2,"Display Modul 2");
   lcd_printlc(3,2,"und Temp-Modul");
   lcd_printlc(4,2,"(achim S.+FB)");
   _delay_ms(5000);
 }

int main(void)
 {
   char Buffer[20];
   int16_t temperatur, nachkomma;

   i2c_init();
   lcd_init();

   // Display Befehle
   lcd_command(LCD_DISPLAYON | LCD_CURSOROFF | LCD_BLINKINGOFF);
   lcd_light(0);                                       // Licht an

   startanzeige();                                     // Unterprg startanzeige
   lcd_command(LCD_CLEAR);
   _delay_ms(2);

   lcd_printlc(1,1,"Temperatur");

   // Angabe der Schaltpunkte
   lm75_set_T_low(24*2 +1);                            // 26°C
   lm75_set_T_high(26*2);                              // 24,5°C
```

```
  while(1)
   {
    if (lm75_read_T(&temperatur) != 0)
     {                                                    // Fehlererkennung
      lcd_command(LCD_CLEAR);
      _delay_ms(2);
      lcd_printlc(2,6,"LM 75");
      lcd_printlc(3,5,"Nicht OK");
      _delay_ms(2000);
     }
    // Nachkommastellen bestimmen
    if (temperatur & 1) nachkomma=5; else nachkomma=0;
    temperatur >>=1;                                      // auf ganze °C umrechnen
    // Anzeige
    sprintf_P(Buffer, PSTR("%+4d,%d"), temperatur, nachkomma);
    lcd_printlc(3,1,Buffer);
    _delay_ms(100);
   }
}
```