#include <avr/io.h>

#define *F\_CPU* 16000000

#include <util/delay.h>

#include <stdlib.h>

#define E 5

#define RS 7

void send\_a\_command(unsigned char command);

void send\_a\_character(unsigned char character);

void send\_a\_string(char \*string\_of\_characters);

int main(void)

{

DDRC = 0XFF;

DDRA = 0X00;

DDRD = 0XFF;

DDRB = 0xFF;

*\_delay\_ms*(50);

ADMUX |= (1<<REFS0)|(1<<REFS1);

ADCSRA |= (1<<ADEN)|(1<<ADATE)|(1<<ADPS0)|(1<<ADPS1)|(1<<ADPS2);

*int16\_t* COUNTA = 0;

char SHOWA[3];

send\_a\_command(0x01);

send\_a\_command(0x38);

send\_a\_command(0b00001111);

*\_delay\_ms*(50);

ADCSRA |= (1<<ADSC);

while(1)

{

COUNTA = ADC/4;

send\_a\_string("smartbridge");

send\_a\_command(0x80+0x40+0);

send\_a\_string("Temp(c)= ");

send\_a\_command(0x80+0x40+8);

*itoa*(COUNTA,SHOWA,10);

send\_a\_string(SHOWA);

send\_a\_string(" ");

send\_a\_command(0x80+0);

if (COUNTA >= 30)

PORTB = 0x01;

PORTB = 0x02;

}

}

void send\_a\_command(unsigned char command)

{

PORTC = command;

PORTD &= ~(1<<RS);

PORTD |= (1<<E);

*\_delay\_ms*(50);

PORTD &= ~(1<<E);

PORTC = 0;

}

void send\_a\_character(unsigned char character)

{

PORTC = character ;

PORTD |= (1<<RS);

PORTD |= (1<<E);

*\_delay\_ms*(50);

PORTD &= ~(1<<E);

PORTC = 0;

}

void send\_a\_string(char \*string\_of\_characters)

{

while(\*string\_of\_characters>0)

{

send\_a\_character(\*string\_of\_characters++);

}

}