#include <OneWire.h>

#include <DallasTemperature.h>

#define ONE\_WIRE\_BUS 7

OneWire oneWire(ONE\_WIRE\_BUS);

DallasTemperature sensors(&oneWire);

void setup(void)

{

// start serial port

Serial.begin(9600);

Serial.println("Dallas Temperature IC Control Library Demo");

// Start up the library

sensors.begin();

}

void loop(void)

{

// call sensors.requestTemperatures() to issue a global temperature

// request to all devices on the bus

Serial.print(" Requesting temperatures...");

sensors.requestTemperatures(); // Send the command to get temperatures

Serial.println("DONE");

Serial.print("Temperature for Device 1 is: ");

Serial.print(sensors.getTempCByIndex(0)); // Why "byIndex"?

// You can have more than one IC on the same bus.

// 0 refers to the first IC on the wire

}

#define F\_CPU 16000000UL

#include <avr/io.h>

#include <util/delay.h>

#include <stdlib.h>

#define BAUDRATE 19200

#define BAUD\_PRESCALLER (((F\_CPU / (BAUDRATE \* 16UL))) - 1)

//Declaration of our functions

void USART\_init(void);

unsigned char USART\_receive(void);

void USART\_send( unsigned char data);

void USART\_putstring(char\* StringPtr);

void adc\_init(void);

uint16\_t adc\_read(uint8\_t ch);

 char myBuffer[8];

int main(void){

USART\_init();        //Call the USART initialization code

adc\_init();

   for(;;)

   {

   uint16\_t temperature = adc\_read(0);

   uint16\_t temp = (((temperature\*5000)/1024)/10);

   utoa(temp,myBuffer,10);

   USART\_putstring("Temperature is :");

   USART\_putstring(myBuffer);

   USART\_putstring("\n");

   \_delay\_ms(750);

   }

   //Pass the string to the USART\_putstring function and sends it over the serial

     //Delay for 5 seconds so it will re-send the string every 5 seconds

return 0;

}

void USART\_init(void){

UBRR0H = (uint8\_t)(BAUD\_PRESCALLER>>8);

UBRR0L = (uint8\_t)(BAUD\_PRESCALLER);

UCSR0B = (1<<RXEN0)|(1<<TXEN0);

UCSR0C = (3<<UCSZ00);

}

unsigned char USART\_receive(void){

while(!(UCSR0A & (1<<RXC0)));

return UDR0;

}

void USART\_send( unsigned char data){

while(!(UCSR0A & (1<<UDRE0)));

UDR0 = data;

}

void USART\_putstring(char\* StringPtr){

while(\*StringPtr != 0x00){

USART\_send(\*StringPtr);

StringPtr++;}

}

void adc\_init()

{

ADMUX = (1<<REFS0);

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

}

uint16\_t adc\_read(uint8\_t ch)

{

ch &= 0b00000111;

ADMUX = (ADMUX & 0xF8)|ch;

ADCSRA |= (1<<ADSC);

while(ADCSRA & (1<<ADSC));

return ADC;

}