#include <DS1302RTC.h>

#include <Streaming.h> //http://arduiniana.org/libraries/streaming/

//#include <Time.h> //http://playground.arduino.cc/Code/Time

#include <TimeLib.h>

DS1302RTC RTC(5, 6, 7);

// rst,data,clk

//DS1302RTC RTC(9, 10, 11);

// Optional connection for RTC module

//#define DS1302\_GND\_PIN 33

//#define DS1302\_VCC\_PIN 35

void setup(void)

{

Serial.begin(115200);

// Activate RTC module

// digitalWrite(DS1302\_GND\_PIN, LOW);

// pinMode(DS1302\_GND\_PIN, OUTPUT);

//

// digitalWrite(DS1302\_VCC\_PIN, HIGH);

// pinMode(DS1302\_VCC\_PIN, OUTPUT);

Serial << F("RTC module activated");

Serial << endl;

delay(500);

if (RTC.haltRTC()) {

Serial << F("The DS1302 is stopped. Please set time");

Serial << F("to initialize the time and begin running.");

Serial << endl;

}

if (!RTC.writeEN()) {

Serial << F("The DS1302 is write protected. This normal.");

Serial << endl;

}

delay(5000);

//setSyncProvider() causes the Time library to synchronize with the

//external RTC by calling RTC.get() every five minutes by default.

setSyncProvider(RTC.get);

Serial << F("RTC Sync");

if (timeStatus() == timeSet)

Serial << F(" Ok!");

else

Serial << F(" FAIL!");

Serial << endl;

}

void loop(void)

{

static time\_t tLast;

time\_t t;

tmElements\_t tm;

//check for input to set the RTC, minimum length is 12, i.e. yy,m,d,h,m,s 17,01,12,11,33,00

if (Serial.available() >= 12) {

//note that the tmElements\_t Year member is an offset from 1970,

//but the RTC wants the last two digits of the calendar year.

//use the convenience macros from Time.h to do the conversions.

int y = Serial.parseInt();

if (y >= 100 && y < 1000)

Serial << F("Error: Year must be two digits or four digits!") << endl;

else {

if (y >= 1000)

tm.Year = CalendarYrToTm(y);

else //(y < 100)

tm.Year = y2kYearToTm(y);

tm.Month = Serial.parseInt();

tm.Day = Serial.parseInt();

tm.Hour = Serial.parseInt();

tm.Minute = Serial.parseInt();

tm.Second = Serial.parseInt();

t = makeTime(tm);

//use the time\_t value to ensure correct weekday is set

if (RTC.set(t) == 0) { // Success

setTime(t);

Serial << F("RTC set to: ");

printDateTime(t);

Serial << endl;

}

else

Serial << F("RTC set failed!") << endl;

//dump any extraneous input

while (Serial.available() > 0) Serial.read();

}

}

t = now();

if (t != tLast) {

tLast = t;

printDateTime(t);

Serial << endl;

}

}

//print date and time to Serial

void printDateTime(time\_t t)

{

printDate(t);

Serial << ' ';

printTime(t);

}

//print time to Serial

void printTime(time\_t t)

{

printI00(hour(t), ':');

printI00(minute(t), ':');

printI00(second(t), ' ');

}

//print date to Serial

void printDate(time\_t t)

{

printI00(day(t), 0);

Serial << monthShortStr(month(t)) << \_DEC(year(t));

}

//Print an integer in "00" format (with leading zero),

//followed by a delimiter character to Serial.

//Input value assumed to be between 0 and 99.

void printI00(int val, char delim)

{

if (val < 10) Serial << '0';

Serial << \_DEC(val);

if (delim > 0) Serial << delim;

return;

}