#include <LiquidCrystal.h>

#include <OneWire.h>

#include <DallasTemperature.h>

#include <Wire.h>

#include "RTClib.h"

#include <SD.h>

const int chipSelect = 10;

#define ONE\_WIRE\_BUS 9

RTC\_DS1307 rtc;

OneWire oneWire(ONE\_WIRE\_BUS);

DallasTemperature sensors(&oneWire);

const int rs = 7, en = 6, d4 = 5, d5 = 4, d6 = 3, d7 = 2;

LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

File file;

void setup() {

sensors.requestTemperatures();

lcd.begin(16, 2);

if (! rtc.isrunning()) {

Serial.println("RTC is NOT running!");

rtc.adjust(DateTime(F(\_\_DATE\_\_), F(\_\_TIME\_\_))); }

while (!Serial) {

;

}

Serial.print("Initializing SD card...");

if (!SD.begin(chipSelect)) {

Serial.println("Card failed, or not present");

return;

}

Serial.println("card initialized.");

}

void loop() {

Serial.begin(9600);

rtc.begin();

sensors.requestTemperatures();

Serial.println();

DateTime now = rtc.now();

Serial.println();

Serial.print(now.day());

Serial.print('/');

Serial.print(now.month());

Serial.print('/');

Serial.print(now.year());

Serial.print(' ');

Serial.print(now.hour());

Serial.print(':');

Serial.print(now.minute());

Serial.print(':');

Serial.print(now.second());

Serial.print(" ");

Serial.print(" ");

Serial.print(" ");

for(int i =0;i<=2;i++)

{

lcd.setCursor(0, 0);

lcd.print(now.day());

lcd.print('/');

lcd.print(now.month());

lcd.print('/');

lcd.print(now.year());

lcd.print(' ');

lcd.print(now.hour());

lcd.print(':');

lcd.print(now.minute());

lcd.print(':');

lcd.print(now.second());

lcd.setCursor(0, 1);

lcd.print(" ");

lcd.print(i+1);

lcd.print(": ");

lcd.print(sensors.getTempCByIndex(i));

Serial.print(" ");

Serial.print(i+1);

Serial.print(": ");

Serial.print(sensors.getTempCByIndex(i));

Serial.print(" ");

String dataString = "";

File dataFile = SD.open("datalog.txt", FILE\_WRITE);

for (int Pin = 0; Pin < 3; Pin++) {

int sensor = sensors.getTempCByIndex(i);

dataString += String(sensor);

if (Pin < 2)

{

dataString += ",";

}

}

if (dataFile)

{

dataFile.println(dataString);

dataFile.print(now.day());

dataFile.print("/");

dataFile.print(now.month());

dataFile.print("/");

dataFile.print(now.year());

dataFile.print(",");

dataFile.print(now.hour());

dataFile.print(":");

dataFile.print(now.minute());

dataFile.print(",");

dataFile.close();

}

else

{

Serial.println("error opening datalog.txt");

}

delay(1000);

}

}