

The sketch

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/*      GPS_logger by LogMaker360
code belongs to this video: https://www.youtube.com/watch?v=dy2iygCZTIM
write by Moz for Youtube changel LogMaker360 26-10-2016
*/
// I have a Data Logger Module Shield V1.0 for Arduino UNO SD Card
// and a GY-NEO6MV2 new NEO-6M GPS Module NEO6MV2 gps
//real time clock is included on the Data logger shield.
#include <SoftwareSerial.h>
#include <TinyGPS.h>      // https://www.arduino-libraries.info/libraries/tiny-gps
#include <Wire.h>
#include <SPI.h>
#include <SD.h>
#include "RTCLib.h"      // download RTCLib-2.0.1.zip https://www.arduino-libraries.info/libraries/rt-club
#include <OneWire.h>
File dataFile;
DateTime now;
RTC_DS1307 RTC;
const int chipSelect = 10; // 10 pin for the SD card logger shield.
long lat,lon; // create variable for latitude and longitude object
SoftwareSerial gpsSerial(3, 4); // create gps sensor connection, UNO D3 to Mod RX, UNO D4 to Mod TX
TinyGPS gps; // create gps object

void setup(){
  Serial.begin(9600); // connect serial some other gps sensor try Serial.begin(9600); and gpsSerial.begin(4800);
  gpsSerial.begin(9600); // connect gps sensor
  Wire.begin(); // real time clock
  RTC.begin(); // also for the real time clock
//check or the Real Time Clock is on
if (! RTC.isrunning()) {
  Serial.println("RTC is NOT running!");
  // following line sets the RTC to the date & time this sketch was compiled
  // uncomment it & upload to set the time, date and start run the RTC!
  RTC.adjust(DateTime(__DATE__, __TIME__));
}
//setup SD card
Serial.print("Initializing SD card...");
// see if the SD card is present and can be initialized:
if (!SD.begin(chipSelect)) {
  Serial.println("Card failed, or not present");
  // don't do anything more:
  return;
}
Serial.println("card initialized.");
//Indexing: date (year / month / day)      prints only at the first line.
now = RTC.now();
dataFile = SD.open("gpsLOG.txt", FILE_WRITE);
dataFile.print("Start logging on: ");
dataFile.print(now.year(),DEC);
dataFile.print('/');
dataFile.print(now.month(),DEC);
dataFile.print('/');
```

```

dataFile.print(now.day(),DEC);
dataFile.println(" ");
dataFile.println("Latitude      Longitude      Time");
dataFile.close();
}

void loop(){
  now = RTC.now();
//log the time and gps coordinaten every 10 seconds
  while(gpsSerial.available()){ // check for gps data
    if(gps.encode(gpsSerial.read())){ // encode gps data
      gps.get_position(&lat,&lon); // get latitude and longitude
      // display position
      Serial.print("Position: ");
      Serial.print("coordinaat ");Serial.print(lat/1000000); Serial.print(".");Serial.print(lat%1000000);Serial.print(" ");// print
latitude to serialmonitor

      Serial.print(", ");Serial.print(lon/1000000); Serial.print(".");Serial.println(lon%1000000);// print longitude to serialmonitor
      dataFile = SD.open("gpsLOG.txt", FILE_WRITE);
      if (dataFile) {
dataFile.print(lat/1000000); dataFile.print("."); dataFile.print(lat%1000000); dataFile.print(" ");// print latitude to the SD
card
dataFile.print("      ");
dataFile.print(lon/1000000); dataFile.print("."); dataFile.print(lon%1000000);// print longitude to SD Card
dataFile.print("      ");
dataFile.print(now.hour(),DEC);
dataFile.print(":"");
dataFile.print(now.minute(),DEC);
dataFile.print(":"");
dataFile.println(now.second(),DEC);
dataFile.close();
// print to the serial port too:
Serial.println("data stored");
}
///Serial.println("minute past");
// }
// if the file isn't open, pop up an error:
else {
  Serial.println("error opening gpslog.txt");
}//}
delay(10000);
}
}
} // END

```

Other References:

<https://lastminuteengineers.com/neo6m-gps-arduino-tutorial/>

```
check pins          int RXPin = 3;    //from NEO-6M pin RX
                    int TXPin = 4;    //from NEO-6M pin TX
```

Burn sketch and go outside with laptop open Serial Monitor

Real Time Clock: RTC test and adjusting Date and time.

<https://learn.adafruit.com/adafruit-data-logger-shield/using-the-real-time-clock>

Using the SD Card:

<https://learn.adafruit.com/adafruit-data-logger-shield/using-the-sd-card>

Image of setup connected to a 6V battery as Stand Alone Tracker



wait +-40 - 120 second for blinking to start.

GPSLOG.TXT files

```
GPSLOG.TXT - Notepad
File Edit Format View Help
Start logging on: 2021/11/16
Latitude           Longitude          Time
-26. -216309       28.47292          10:29:12
-26. -216304       28.47290          10:29:23
-26. -216303       28.47287          10:29:34
-26. -216324       28.47309          10:29:45
-26. -216340       28.47325          10:29:56
-26. -216358       28.47345          10:30:7
-26. -216364       28.47348          10:30:18
-26. -216364       28.47350          10:30:29
-26. -216360       28.47347          10:30:40
-26. -216356       28.47339          10:30:51
-26. -216351       28.47360          10:31:2
-26. -216949       28.47755          10:31:13
-26. -217422       28.48836          10:31:24
-26. -216152       28.47795          10:31:35
-26. -215731       28.47904          10:31:46
Ln 1, Col 1      100%  Windows (CRLF)  UTF-8
```