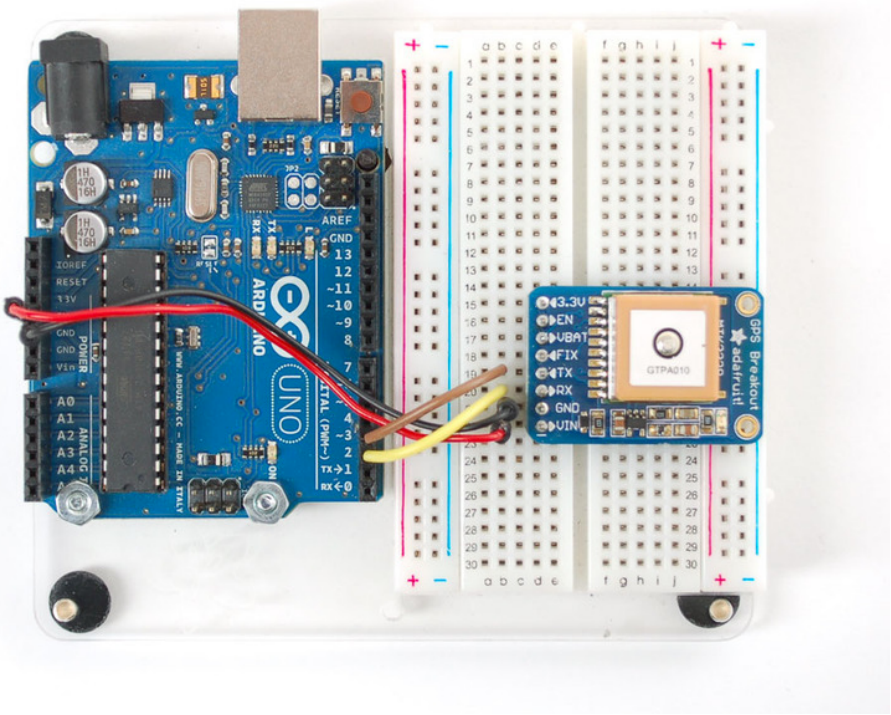
Dramaläb

#5
Dramaläb
Session

09.05.15 - SER F1.FREIRAUM
14:00 - 19:00

TRACK ME IF YOU CAN
PLAY WITH GEO POSITION AND
SURVEILLANCE USING A GPS!

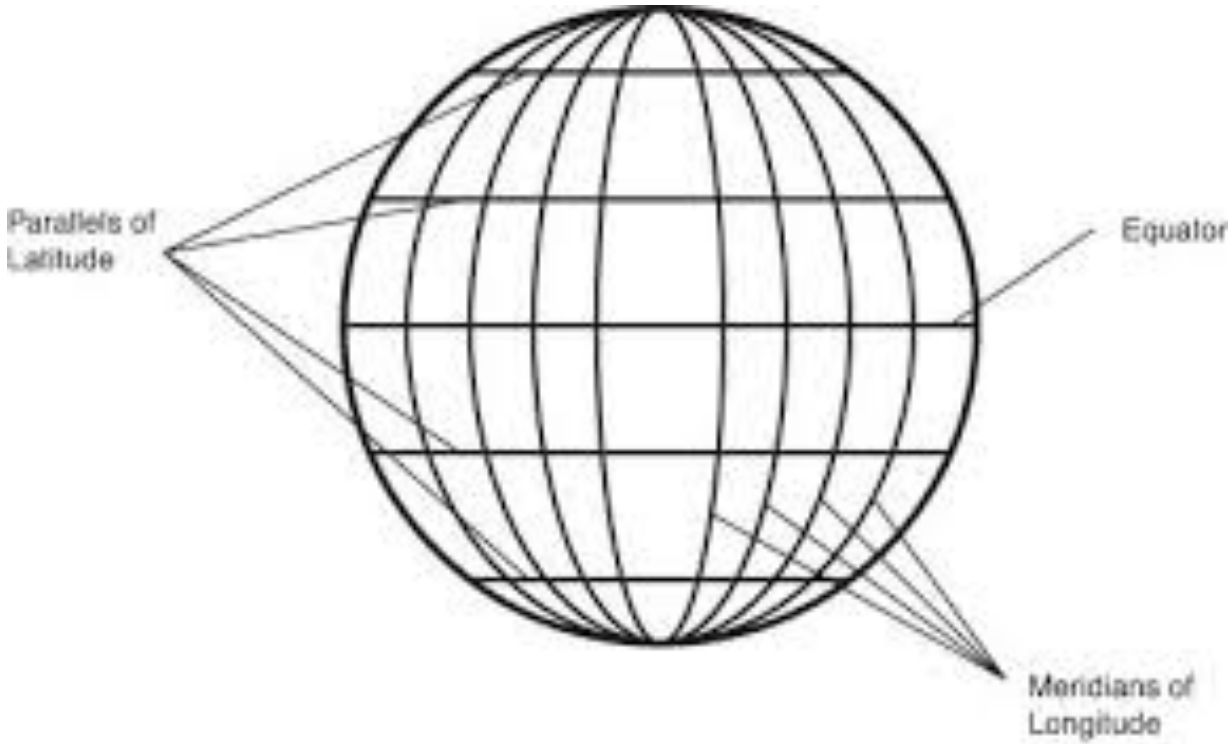
GPS Sensor


UNO
3.3V
EN
VBAT
FIX
TX
RX
GND
VIN
GPS Breakout
adafruit

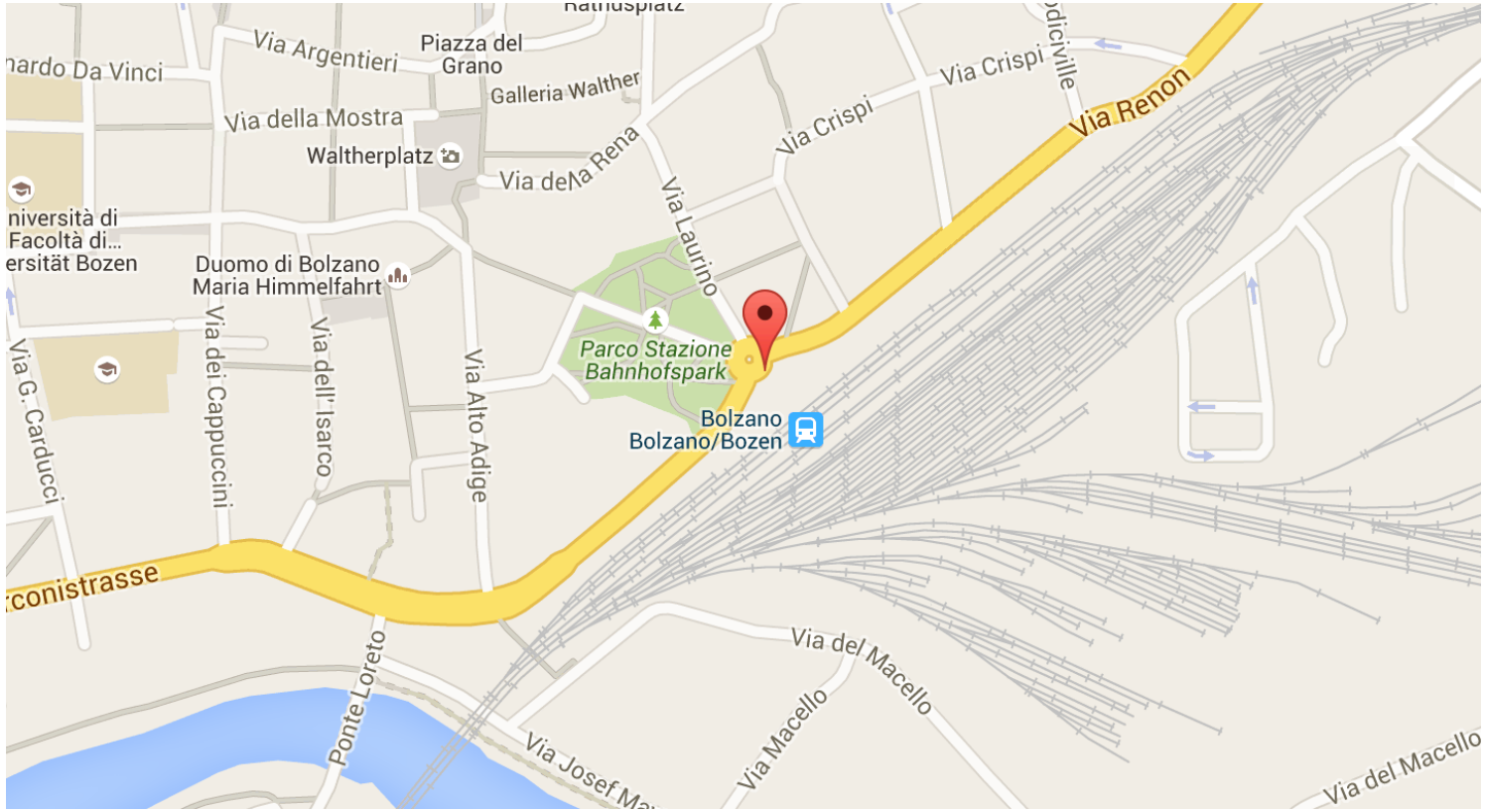

GPS Tracker


eTrex 30
GARMIN


7th Ave to Jones Blvd.
1.14 mi.
Remaining
1:30
15.5 mi
Back
Source


Parallels of
Latitude
Equator
Meridians of
Longitude

Example



Latitude 46.496770 Longitude 11.358132

NMEA

„specification for communication between marine electronic devices such as echo sounder, sonars, anemometer, gyrocompass, autopilot, GPS receivers and many other types of instruments“

„It has been defined by, and is controlled by, the U.S.-based National Marine Electronics Association“

GGA

Global Positioning System Fix Data. Time, Position and fix related data for a GPS receiver

```
                                                  11
        1         2      3 4        5 6 7  8   9   10 |  12 13  14   15
        |         |      | |        | | |  |   |   |  |  |   |  |    |
$--GGA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,x,xx,x.x,x.x,M,x.x,M,x.x,xxxx*hh
 1) Time (UTC)
 2) Latitude
 3) N or S (North or South)
 4) Longitude
 5) E or W (East or West)
 6) GPS Quality Indicator,
 0 - fix not available,
 1 - GPS fix,
 2 - Differential GPS fix
 7) Number of satellites in view, 00 - 12
 8) Horizontal Dilution of precision
 9) Antenna Altitude above/below mean-sea-level (geoid)
10) Units of antenna altitude, meters
11) Geoidal separation, the difference between the WGS-84 earth ellipsoid and mean-sea-
level (geoid), "-" means mean-sea-level below ellipsoid
12) Units of geoidal separation, meters
13) Age of differential GPS data, time in seconds since last SC104 type 1 or 9 update,
null field when DGPS is not used
14) Differential reference station ID, 0000-1023
15) Checksum
```

Libraries

adafruit / **Adafruit-GPS-Library**

Watch 63

An interrupt-based GPS library for no-parsing-required use

89 commits | 1 branch | 1 release | 17 contributors

mikalhart / **TinyGPS**

Watch 27

A compact Arduino NMEA (GPS) parsing library http://arduiniana.org

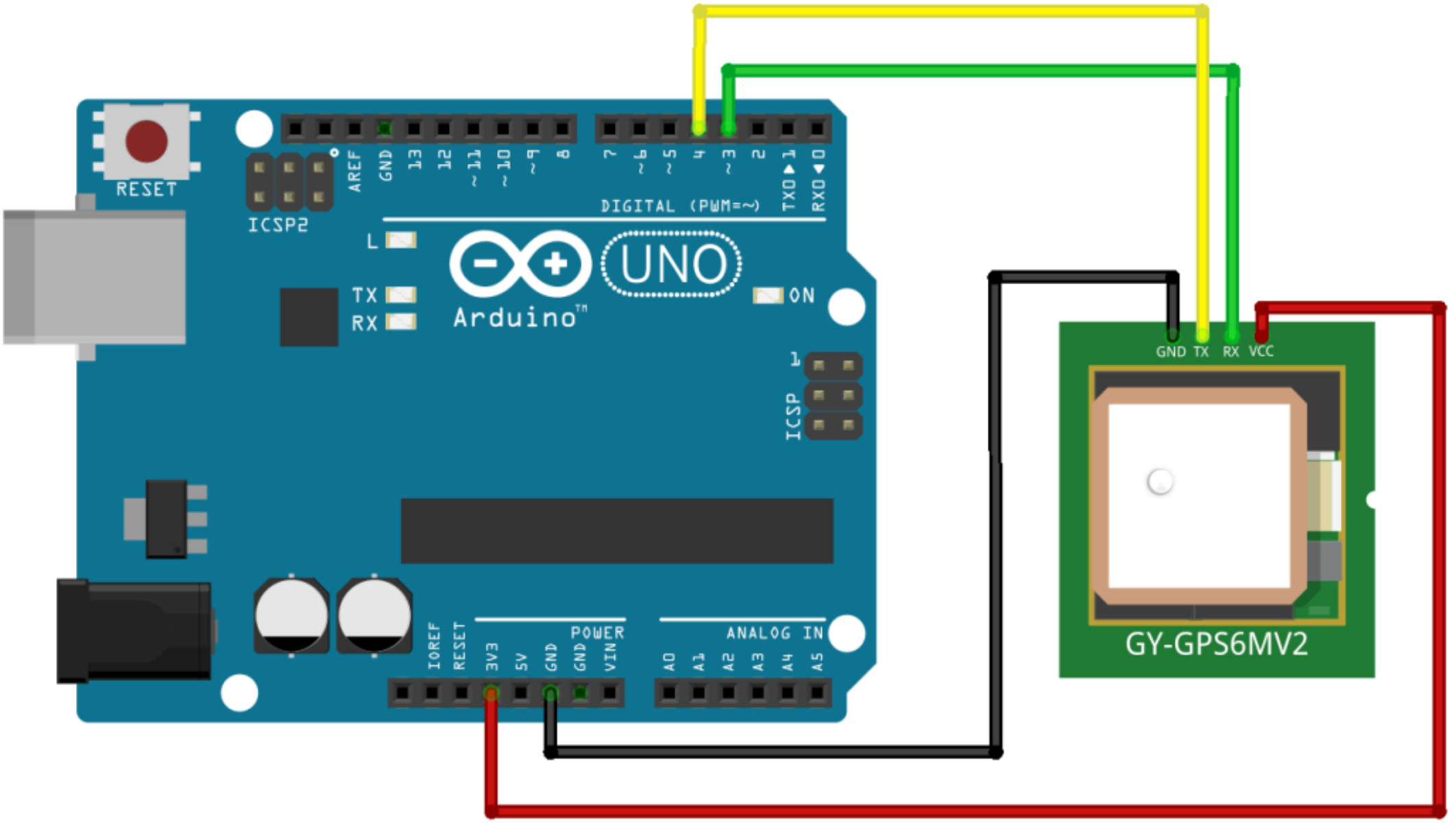
6 commits | 1 branch | 1 release | 1 contributor

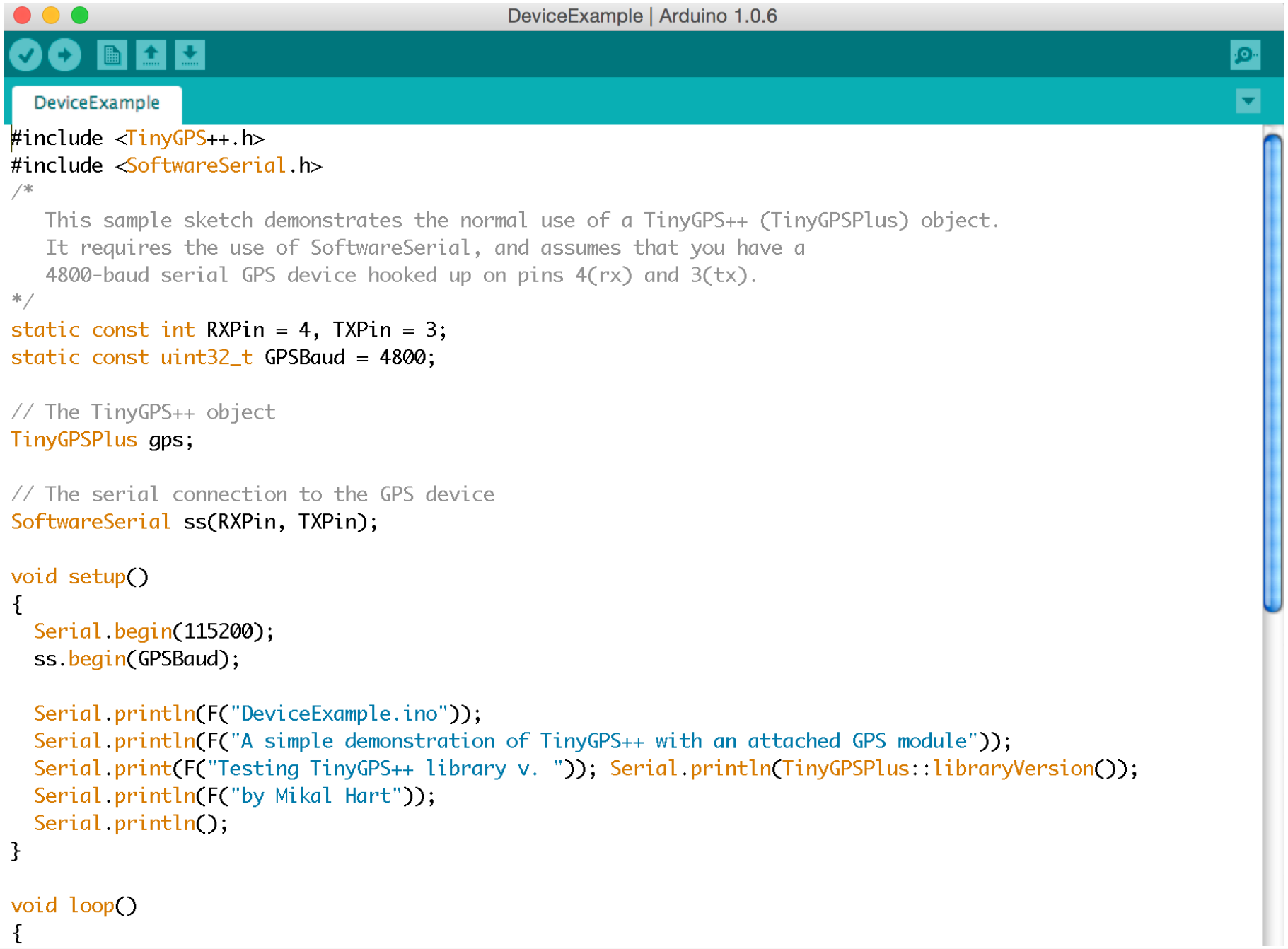
mikalhart / **TinyGPSPlus**

Watch 35

A new, customizable Arduino NMEA parsing library http://arduiniana.org

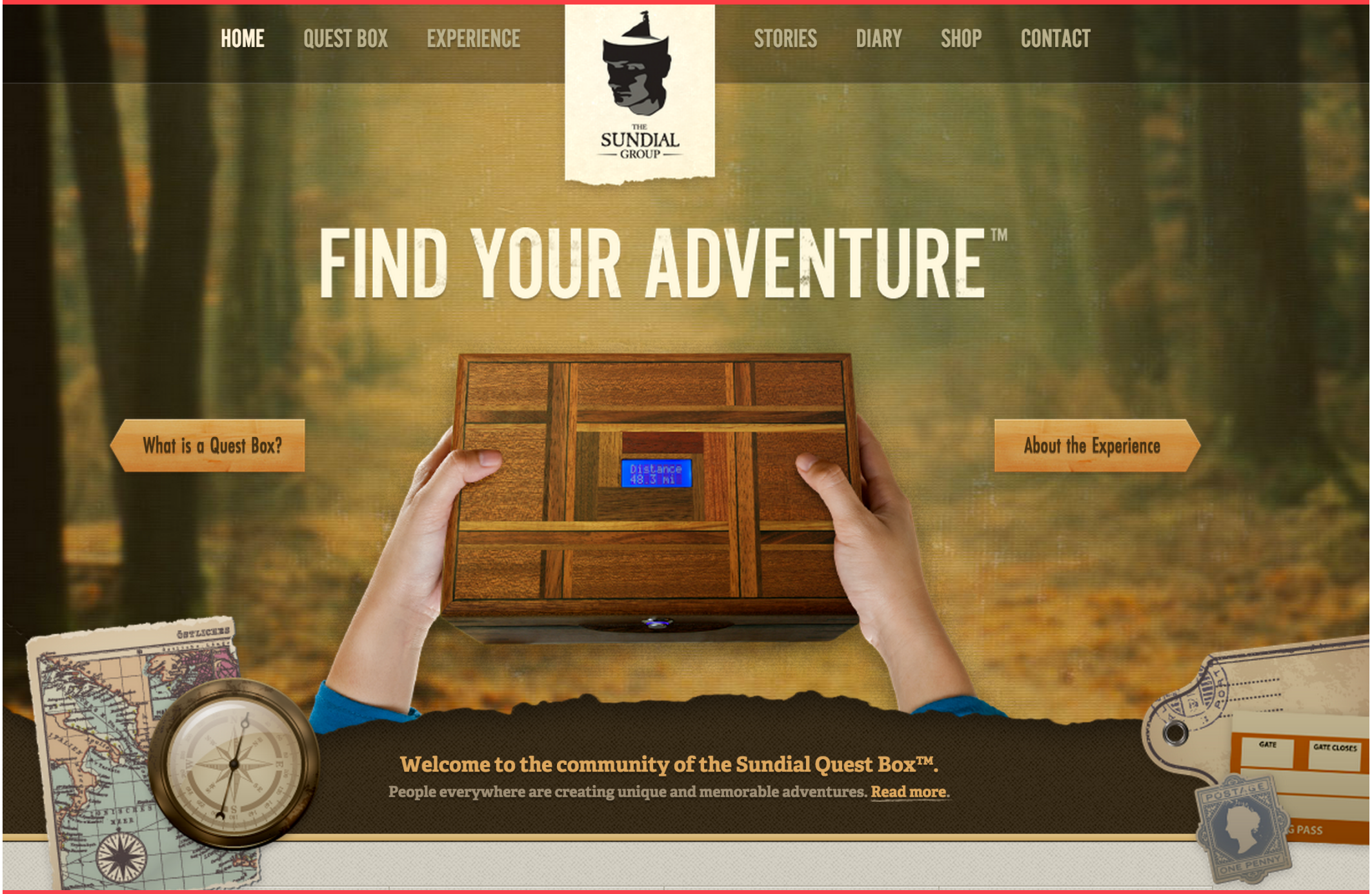
19 commits | 1 branch | 7 releases | 2 contributors


RESET
ICSP2
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM=~)
L
TX
RX
Arduino™
UNO
ON
ICSP
IOREF
RESET
3V3
5V
GND
GND
VIN
POWER
A0
A1
A2
A3
A4
A5
ANALOG IN
GND TX RX VCC
GY-GPS6MV2


DeviceExample | Arduino 1.0.6
DeviceExample
#include <TinyGPS++.h>
#include <SoftwareSerial.h>
/*
This sample sketch demonstrates the normal use of a TinyGPS++ (TinyGPSPlus) object.
It requires the use of SoftwareSerial, and assumes that you have a
4800-baud serial GPS device hooked up on pins 4(rx) and 3(tx).
*/
static const int RXPin = 4, TXPin = 3;
static const uint32_t GPSBaud = 4800;
// The TinyGPS++ object
TinyGPSPlus gps;
// The serial connection to the GPS device
SoftwareSerial ss(RXPin, TXPin);
void setup()
{
Serial.begin(115200);
ss.begin(GPSBaud);
Serial.println(F("DeviceExample.ino"));
Serial.println(F("A simple demonstration of TinyGPS++ with an attached GPS module"));
Serial.print(F("Testing TinyGPS++ library v. ")); Serial.println(TinyGPSPlus::libraryVersion());
Serial.println(F("by Mikal Hart"));
Serial.println();
}
void loop()
{

Geocaching

„Reverse“ Geocaching


HOME
QUEST BOX
EXPERIENCE
THE SUNDIAL GROUP
STORIES
DIARY
SHOP
CONTACT
FIND YOUR ADVENTURE™
What is a Quest Box?
About the Experience
Distance
48.3 mi
Welcome to the community of the Sundial Quest Box™.
People everywhere are creating unique and memorable adventures. Read more.
GATE
GATE CLOSES
POSTAGE
ONE PENNY

Find the Place