// Arduino GPS real time clock with NEO-6M GPS module

#include <TinyGPSPlus.h>
#include <SoftwareSerial.h> // Include software serial library
#include <LiquidCrystal.h> // Include LCD library

TinyGPSPlus gps;

#define S\_RX 9 // Define software serial RX pin
#define S\_TX 8 // Define software serial TX pin

SoftwareSerial SoftSerial(S\_RX, S\_TX); // Configure SoftSerial library

// LCD module connections (RS, E, D4, D5, D6, D7)
LiquidCrystal lcd(2, 3, 4, 5, 6, 7);

byte last\_second;
char Time[] = "UTC 00H00:00";
char Date[] = "le 00/00/2000";

void setup(void) {
 SoftSerial.begin(9600);

 // set up the LCD's number of columns and rows
 lcd.begin(16, 2);

 lcd.setCursor(0, 0);
 lcd.print(Time); // Display time
 lcd.setCursor(0, 1);
 lcd.print(Date); // Display calendar
}

void loop() {

 while (SoftSerial.available() > 0) {

 if (gps.encode(SoftSerial.read())) {

 if (gps.time.isValid()) {
 Time[5] = gps.time.hour() / 10 + 48;
 Time[6] = gps.time.hour() % 10 + 48;
 Time[8] = gps.time.minute() / 10 + 48;
 Time[9] = gps.time.minute() % 10 + 48;
 Time[11] = gps.time.second() / 10 + 48;
 Time[12] = gps.time.second() % 10 + 48;
 }

 if (gps.date.isValid()) {
 Date[5] = gps.date.day() / 10 + 48;
 Date[6] = gps.date.day() % 10 + 48;
 Date[8] = gps.date.month() / 10 + 48;
 Date[9] = gps.date.month() % 10 + 48;
 Date[13] =(gps.date.year() / 10) % 10 + 48;
 Date[14] = gps.date.year() % 10 + 48;
 }

 if(last\_second != gps.time.second()) {
 last\_second = gps.time.second();
 lcd.setCursor(0, 0);
 lcd.print(Time); // Display time
 lcd.setCursor(0, 1);
 lcd.print(Date); // Display calendar
 }

 }

 }

}