// 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  
 }  
   
 }  
   
 }  
   
}