smart pill dispenser

```
#include <Wire.h>

#include <Time.h>

#include <DS1307RTC.h>

#include<LiquidCrystal.h>

int Hr,Min,sec,dd,mm,yy;

tmElements_t tm;

#define set_time A0

#define up       A1

#define Down     A2

#define setAlarm A3

#define led1    8

#define led2    9

#define buzzer  13
```

```
LiquidCrystal lcd(2,3,4,5,6,7);

 int alarm_number=1,hh=0,minu=0,ss=00,tab=0;

 void lcdset()

 {

  lcd.clear();

  lcd.setCursor(0,0);

  lcd.print("TIME:"+String(hh)+":"+String(minu)+":"+String(sec)+";");
  }

 void setup() {

  Serial.begin(9600);

  lcd.begin(16,2);

  pinMode(set_time,INPUT_PULLUP);

  pinMode(up,INPUT_PULLUP);

  pinMode(Down,INPUT_PULLUP);

  pinMode(setAlarm,INPUT_PULLUP);

  pinMode(led1,OUTPUT);

  pinMode(led2,OUTPUT);

  pinMode(buzzer,OUTPUT);

  while(!Serial);
```

```
// int alarm_number=1;
 delay(200);
 Serial.println("smart pill box");
 lcd.print("smart pill");
 lcd.setCursor(0,1);
 lcd.print("    Box    ");
  delay(2000);
  if(RTC.read(tm))
  {
    Hr=print2digits(tm.Hour);
    Min=print2digits(tm.Minute);
    sec=print2digits(tm.Second);
    dd=tm.Day;
    mm=tm.Month;
    yy=tmYearToCalendar(tm.Year);
    Serial.print("TIME: ");
    Serial.print(Hr);
    Serial.print(" : ");
    Serial.print(Min);
    Serial.print(" : ");
```

```
  Serial.print(sec);
  Serial.println(";");
  Serial.print("DATE: ");
  Serial.print(dd);
  Serial.print(" : ");
  Serial.print(mm);
  Serial.print(" : ");
  Serial.print(yy);
  Serial.println(";");
  lcd.clear();
  lcd.setCursor(0,0);
  lcd.print("TIME:"+String(Hr)+":"+String(Min)+":"+String(sec)+";");
  lcd.setCursor(0,1);
  lcd.print("Date:"+String(dd)+"/"+String(mm)+"/"+String(yy)+";");
}
else
{
  Serial.println("DS1307 read error! Please check the circuitry.");
}
```

```
delay(3000);
Serial.println("Set time for tablets");
lcd.setCursor(0,1);
lcd.print("Set time for tab");
delay(1000);
if(alarm_number<=2)
{
  Serial.print("Remainder :");
  Serial.println(alarm_number);
  lcd.clear();
  while(1)
  {


    lcd.setCursor(0,0);
   lcd.print("TIME:"+String(hh)+":"+String(minu)+":"+String(00)+";");
   if(digitalRead(up)==0)
    {
      hh+=1;
      if(hh>23)
      {
```

```
   hh=0;
  }
  Serial.print("Hour :");
  Serial.println(hh);
}
if(digitalRead(Down)==0)
{
  minu+=1;
  if(mm>60)
  {
    minu=0;
  }
   Serial.print("Minute :");
   Serial.println(minu);
}
if(digitalRead(set_time)==0)
{
  Serial.print("Remainder TIME: ");
  Serial.print(hh);
  Serial.print(" : ");
```

```
        Serial.print(minu);
        Serial.print(" : ");
        Serial.print(ss);
        Serial.println(";");
        // alarm_number+=1;
        //Serial.println(alarm_number);
        lcd.setCursor(0,1);
        lcd.print("Time activated");
        delay(1000);
        break;
        }
      delay(1000);
    }
  }

}
void loop() {
  if(RTC.read(tm))
  {
    Hr=print2digits(tm.Hour);
```

```
  Min=print2digits(tm.Minute);
  sec=print2digits(tm.Second);
  dd=tm.Day;
  mm=tm.Month;
  yy=tmYearToCalendar(tm.Year);
  Serial.print("TIME: ");
  Serial.print(Hr);
  Serial.print(" : ");
  Serial.print(Min);
  Serial.print(" : ");
  Serial.print(sec);
  Serial.println(";");
  Serial.print("DATE: ");
  Serial.print(dd);
  Serial.print(" : ");
  Serial.print(mm);
  Serial.print(" : ");
  Serial.print(yy);
  Serial.println(";");
}
```

```
  else
  {
    Serial.println("DS1307 read error! Please check the circuitry.");
  }
  if(Hr==hh && Min==minu)
  {
    Serial.println("reaminder");
    beep();
    digitalWrite(led1,HIGH);
  }
  else
  {
    digitalWrite(led1,LOW);
  }
  delay(1000);

}
int print2digits(int number) {
  if (number >= 0 && number < 10) {
    Serial.write('0');
```

```
  }
  //Serial.print(numbe
  r); return number;
}
void beep()
{
  digitalWrite(buzzer,H
  IGH); delay(2000);
  digitalWrite(buzzer,L
  OW); delay(1000);
  digitalWrite(buzzer,H
  IGH); delay(2000);
  digitalWrite(buzzer,L
  OW); delay(1000);
}
```