

Smart Medicine Reminder Box

An Arduino-based smart pillbox system designed to remind patients or elderly individuals to take their medicine on time using buzzers, LEDs, and a real-time clock (RTC). Perfect for healthcare automation projects.

Features

-  Real-time medicine reminder with RTC (DS3231)
 -  Buzzer alert for scheduled times
 -  LED indicators for specific pill compartments
 -  Simple push-button reset after medicine is taken
 -  Powered via USB or battery pack
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Components Used

Component	Quantity	Description
Arduino Uno/Nano	1	Microcontroller board
RTC Module (DS3231)	1	Real-Time Clock for time tracking
Buzzer	1	Alerts user
LEDs	3–4	Visual indicators for compartments
Push Buttons	3–4	Acknowledge intake per compartment
Resistors (220Ω)	As needed	Current limiting for LEDs
Jumper Wires	Set	For connections
Breadboard	1	For prototyping
Pill Box / Enclosure	1	Custom or off-the-shelf pillbox

Wiring Overview

- RTC SDA → A4 (Uno), D4 (Nano)

- RTC SCL → A5 (Uno), D5 (Nano)
- Buzzer → D6
- LEDs → D7–D10
- Buttons → D2–D5

Use pull-down resistors with buttons or enable INPUT_PULLUP

How It Works

1. Set medication times in the code.
 2. RTC keeps track of current time.
 3. When a set time matches:
 - Buzzer rings
 - Corresponding LED turns on
 4. User presses button to acknowledge.
 - LED and buzzer turn off
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File Structure

Smart-Medicine-Reminder-Box/

```
|—— README.md  
|—— SmartMedicineBox.ino // Main Arduino code  
|—— images/  
|   |—— wiring_diagram.png  
|—— docs/  
|   |—— component_specs.md
```

Arduino Code Snippet

```
#include <Wire.h>  
  
#include <RTCLib.h>
```

```
RTC_DS3231 rtc;

const int buzzerPin = 6;
const int ledPin = 7;
const int buttonPin = 2;

void setup() {
    pinMode(buzzerPin, OUTPUT);
    pinMode(ledPin, OUTPUT);
    pinMode(buttonPin, INPUT_PULLUP);

    Wire.begin();
    rtc.begin();
    Serial.begin(9600);
}

void loop() {
    DateTime now = rtc.now();

    if (now.hour() == 9 && now.minute() == 0) {
        digitalWrite(buzzerPin, HIGH);
        digitalWrite(ledPin, HIGH);
        if (digitalRead(buttonPin) == LOW) {
            digitalWrite(buzzerPin, LOW);
            digitalWrite(ledPin, LOW);
            delay(60000); // Wait 1 minute to avoid retrigger
        }
    }
}
```

Future Enhancements

- OLED or LCD display for current time and alerts
 - Multiple compartments with separate schedules
 - SMS/IoT notifications via GSM or WiFi
 - Rechargeable battery integration
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License

This project is open-source under the MIT License.

Credits

Made with ❤️ by [Your Name]. Inspired by the need for accessible healthcare aids for seniors and patients.
