

Enhancing the Smart Medication Dispenser for Improved User Experience

Group 1, Batch B3

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Abstract

Managing medication adherence is a critical challenge for individuals with chronic conditions. To address this, a smart medication dispenser that integrates with Google Calendar is proposed. This dispenser sends reminders and dispenses medication automatically at scheduled times. The integration offers a convenient and reliable solution for medication management. This report outlines the design, implementation steps, and future enhancements of the smart medication dispenser, emphasizing its potential to improve patient adherence and health outcomes.

1 Introduction

Chronic conditions such as diabetes, heart disease, COPD, and asthma require strict adherence to medication regimens. However, many individuals struggle to remember their daily doses, leading to suboptimal health outcomes. To address this challenge, a smart medication dispenser that integrates with Google Calendar is proposed. This dispenser aims to improve medication adherence by sending timely reminders and dispensing medication automatically at scheduled times.

2 Solution Overview

The smart medication dispenser is designed to sync with the user's Google Calendar events specified as medication times. When a scheduled medication event is detected, the dispenser ejects the medication and sends a reminder to the user's mobile phone. This integration offers a convenient and reliable solution for medication management.

3 Material Required

- NodeMCU (ESP8266) for WIFI connectivity
- Servo motor for dispensing medication
- Buzzer for audible reminders
- LED lights for visual indicators

- Jumper wires for connecting components
 - Container for storing medication

4 Circuit Diagram

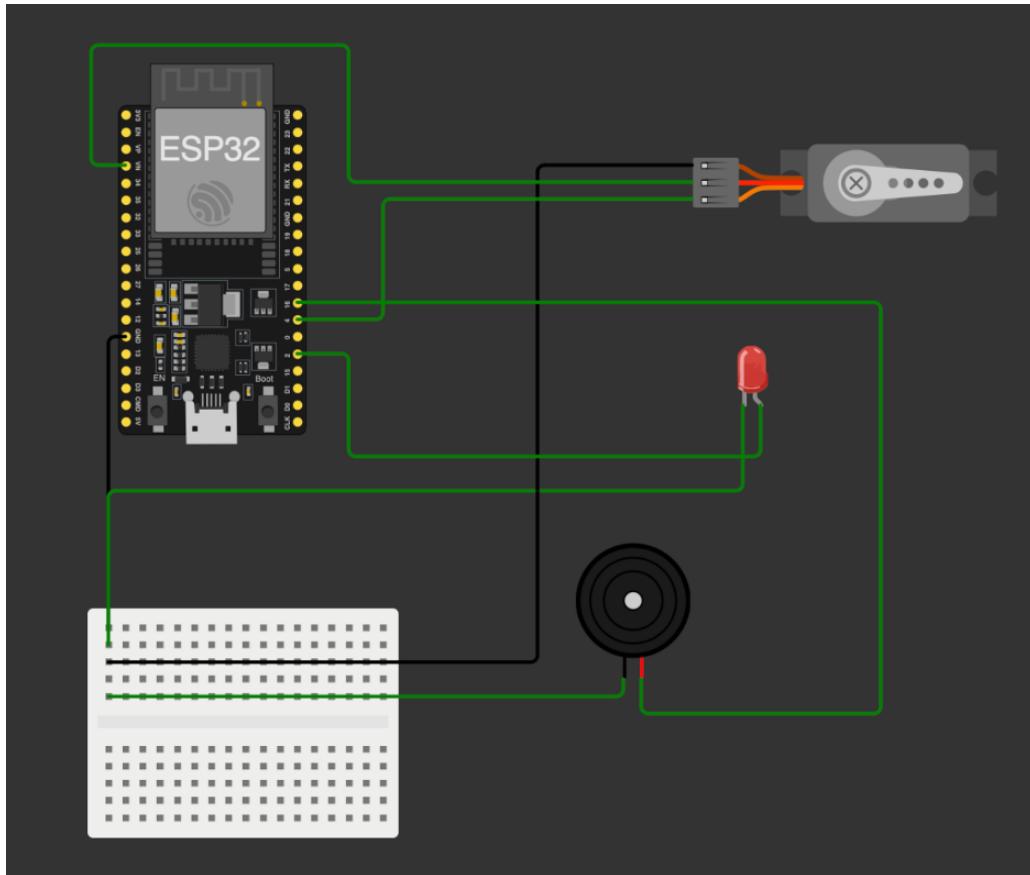


Figure 1: Circuit Diagram

5 Implementation Steps

- 1. Calendar Setup:** Create a new calendar in Google Calendar named "Medicine Disposal." Configure the calendar settings and share it with specific people, making it available to the public. Obtain the shareable link for this calendar.
 - 2. Event Scheduling:** Schedule an event in the "Medicine Disposal" calendar for the desired medication time. Name this event "Medicine" and copy the link generated for this event.

3. **Dispenser Configuration:** Integrate the shareable link from the "Medicine" event into the dispenser system's HTML website.
4. **Dispensing Process:** When the "Medicine" event is activated at the specified time, the servo motor rotates to dispense the medication. Simultaneously, a buzzer sounds as a reminder for the user to take the medicine, and an LED illuminates to indicate the event activation.

6 Conclusion

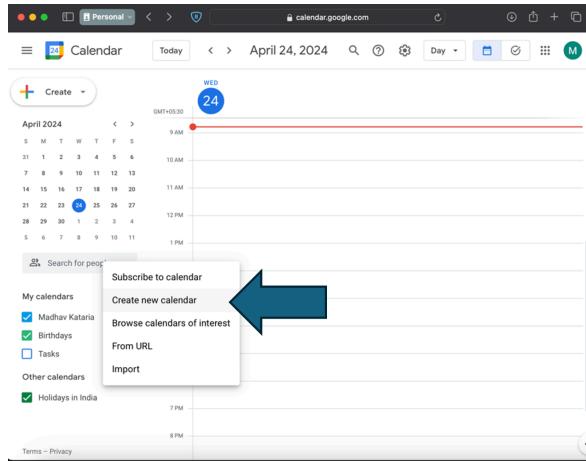
The smart medication dispenser offers a simple yet effective solution for individuals managing chronic conditions. By integrating with Google Calendar, it provides timely reminders and automatic medication dispensing, enhancing patient adherence and overall health management.

7 Future Enhancements

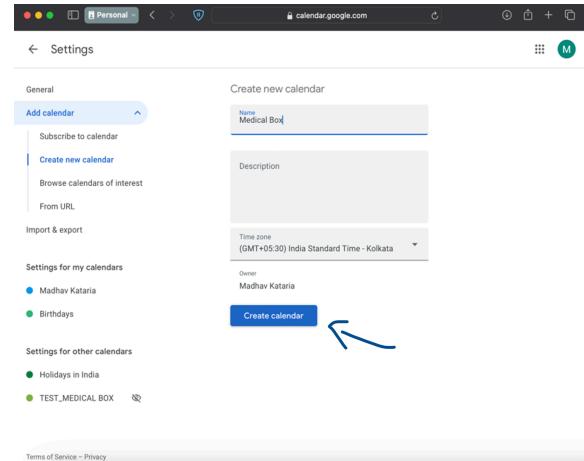
- Implementing a mobile app for easier event scheduling and monitoring
- Adding a camera for facial recognition to ensure the right person receives the medication
- Incorporating a weight sensor to monitor medication levels in the dispenser

8 Images

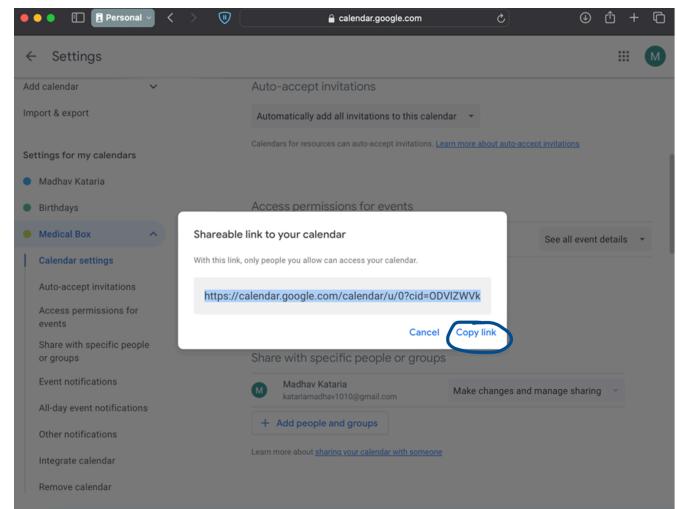
8.1 Steps to make Google Calendar Public



Step - 1



Step - 2



Step - 3

Step - 4

8.2 Product Image

