

# Developing a 'Smart Pill Box' Based on Internet of Things (IOT) to Ease the Accessibility to the Users and Patients

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## ABSTRACT

*A pill box is a container for organizing your medication doses over a predetermined period. A pill box is helpful if you need to take several different prescriptions. You won't have to worry about not taking your medication as directed. Our project aims to develop a smart pill box that will allow patients to take all their medication on time and reduce the likelihood of missing any doses. Because of the ongoing quick-moving way of life, the inclination to neglect has ascended among the populace. As a consequence of this, many people neglect to take their medications. Our smart pill box will solve this problem.*

## INTRODUCTION

There are a lot of people in the world who need medical help, most of the time people who are elderly or disabled. To maintain their health, geriatrics are most likely to require medication. This medication typically comes in the form of pills.

Even so, because of advanced age, they will generally be neglectful and don't make sure to take as much time as is needed or, now and again, by any means. Missed doses significantly raise the risk of health complications for the patient.

One possible solution to this issue is a "Smart Pill Box." Despite its simplicity, it is a healthcare IoT application that has the potential to improve patients' health. The device must communicate wirelessly with another device to be considered smart. To enable the smart pill box to be connected to the user's smartphone through a specialized application, we have proposed using Wi-Fi for our device.

## METHODOLOGY

Connect the Node MCU's digital pins to four red LEDs, a buzzer, and one green LED. Install the libraries ESP8266Wifi (which connects the Node MCU to the WIFI network) and FirebaseESP8266 (which connects the Node MCU to the Firebase Realtime Database) in the Arduino IDE and initialize the variables database URL, auth code, password, WIFI network SSID, and firebase data variable. The given path can be used to retrieve data from the database field with the help of the `getInt` function. Set the led and buzzer's status based on the retrieved data's value. The mobile application controls LEDs and buzzers. On the Node MCU board, upload the code. Create a mobile app that lets multiple people set alarms. Registration, Login, Dashboard, Add Medicine Page, Medicine Details Page, Schedule Alarms Page, Customer Profile Page, etc., are all mobile application features. A specific box's LED comes on, and the buzzer starts ringing when an alarm is set. Users who click on the received Notification are taken to the notification page. To stop the alarm and LEDs, the user must take the pills and click the button in the Notification labelled "Pills Taken."

**FLOWCHART AND CIRCUIT**

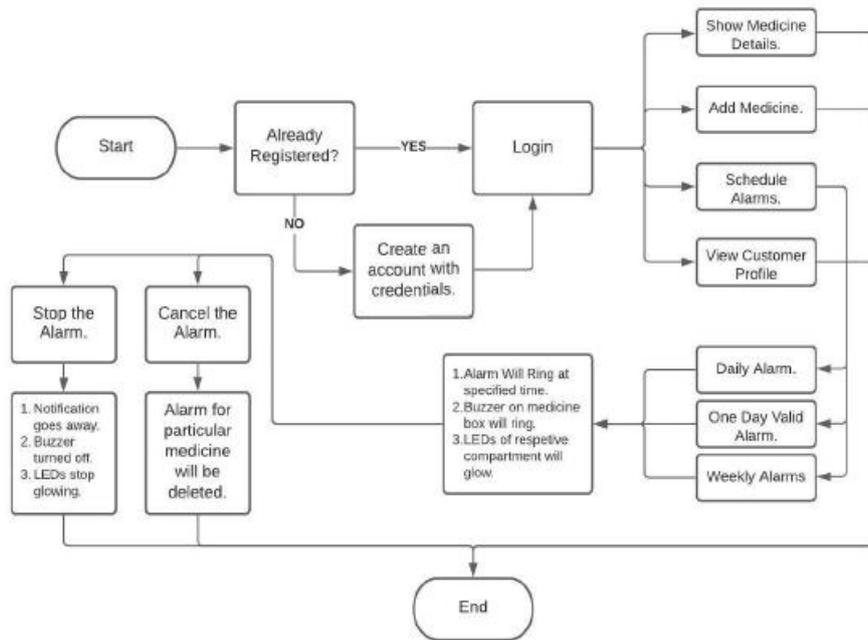


Fig 1: Flowchart of the Pill Box system

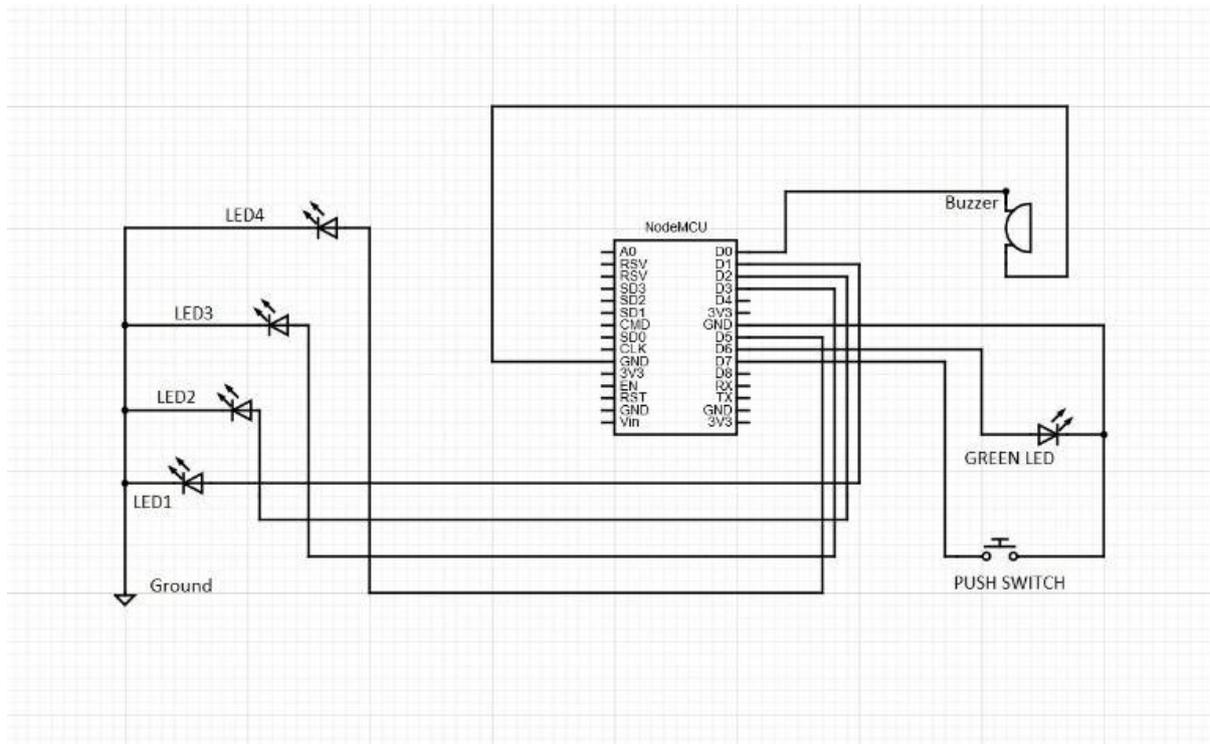


Fig 2: Circuit diagram of the pill box

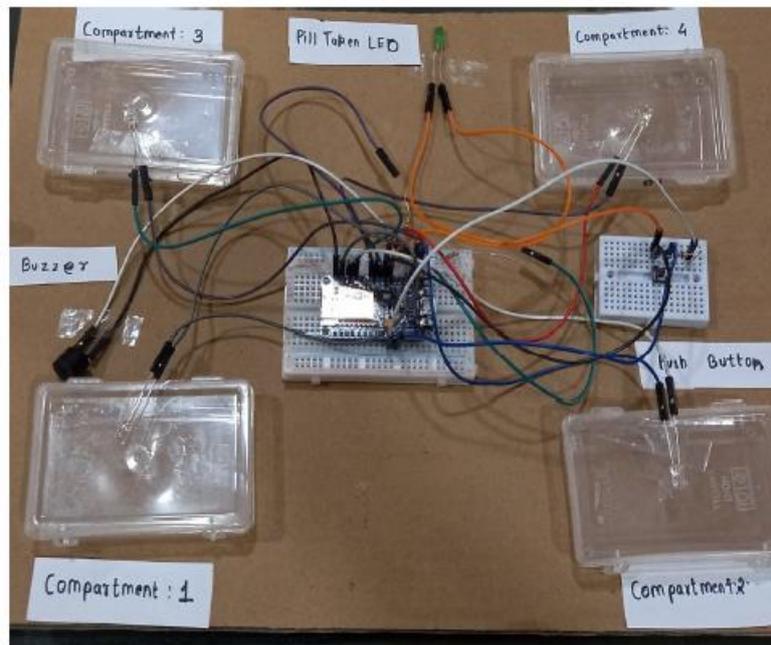
**RESULT AND DISCUSSION**

Fig 3: design of pill box

**CONCLUSION**

We have achieved our goal of developing a smart pillbox that enables patients to take their prescribed medications on time. Elderly adults who frequently forget to take their prescribed medication on time can benefit greatly from this strategy.

**REFERENCES**

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