

Smart Pill Box with Voice Announcement and Wrist Band Accessory

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Abstract: A project has been developed to address the challenges faced by individuals in managing complex medication regimens independently. The solution incorporates various components, including the NodeMCU ESP32 Wroom, RTC module, GSM module, Smart Pill Box dispenser, and a wristband. The NodeMCU ESP32 Wroom module enables seamless communication and synchronization between the Smart Pill Box Dispenser and the wristband accessory. By leveraging its Wi-Fi capabilities, the NodeMCU ESP32 Wroom ensures that the dispenser and wristband stay connected, facilitating real-time notifications related to medication schedules and reminders. To ensure accurate timekeeping and synchronization, an RTC (Real-Time Clock) module is integrated into the system. The GSM module is utilized for the SMS alert functionality of the system. In the event that a patient neglects to take their medication, the GSM module sends an alert message to a designated person, notifying them of the situation. A wristband accessory is a piece of equipment that the patient wears constantly. It includes LCD display, MAX30102 sensor, body temperature sensor, and vibrator, among other things. The MAX30102 sensor measures the patient's heart rate, SpO₂, and temperature, while the temperature sensor measures the patient's body temperature. These values are all shown on an LCD screen. By leveraging IoT technology, the solution enhances medication adherence, improves safety, and reduces the need for constant medical supervision, thereby promoting the well-being and independence of the users.

Keywords: NodeMCU ESP32 Wroom (Wifi Module), RTC Module, GSM Module, Smart Pill Box , Wrist Band

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