

Automatic Medicine Dispenser

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In contemporary society, an alarming trend persists where individuals, particularly the elderly, are frequently admitted to hospitals due to a state of confusion resulting in forgetfulness, leading to critical lapses in medication adherence. Instances of forgetting to take prescribed medications, inadvertent *overdosing*, and misuse of prescribed drugs are prevalent concerns. Dependence on private nurses or family members to manage medication regimens is not always viable. We provide a creative solution for this problem in the form of an automated medication dispenser. We've created an Android application that seamlessly operates this dispenser, ensuring efficient communication between components. The system incorporates an *ESP8266 Wi-Fi* microcontroller and an *Arduino UNO*, responsible for controlling servo and stepper motors, alongside other electronic components. To address potential power loss, the system utilizes *EEPROM* with short-term memory storage, ensuring the retrieval of previous drug information. An alert system has been integrated to remind users of scheduled doses, and in the event of non-compliance within a specified timeframe, alerts are automatically dispatched to designated attendants. The servo-based cell design allows for the reliable storage of up to seven different types of drugs, enhancing the dispenser's efficiency to surpass 100% in the market. In comparison to existing machines, this prototype exhibits a lower variety, catering specifically to the health needs of the aging population. The automated medicine dispenser described herein represents a cost-effective and scalable solution designed to empower pharmacists to manage medication dispensation more effectively, ultimately mitigating the risks associated with medication non-adherence in diverse healthcare scenarios.

Keywords: *Overdosing; Medicine dispenser; Android application; Cost-effective*