IoT Smart Medicine Dispenser

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- **Domain:**
  This project addresses the Healthcare sector combined with the Internet of Things (IoT), focusing on automation and remote monitoring to improve medication adherence. The integration of systems, cloud technologies, and real-time notifications offer a robust solution to medicine management for best adherence practices.

- **Drawbacks:**
  Adherence to medication is often managed by manual medical schedulers, mobile ringtone alarms or even post-it notes, which are rather ineffective. Moreover, caregivers do not know in real time whether the medicine has been taken, thereby increasing the chances of non-adherence and possible health consequences.

- **Overcoming Drawbacks:**
  Automated pill dispensing and consumption logging eliminates human intervention. IoT enabled Smart Medicine Dispenser increases dose compliance by enabling users to receive their medication with the correct dosage at the specified times. Users are alerted through an LED display, buzzer, and smartphone application while real-time data is uploaded to the cloud for the caregivers' supervision. An advanced Monitoring System ensures that all patients are receiving their medications on time while reminders about missed doses guarantee increased patient safety.

- **Novel Features and Comparison:**

The IoT-enabled smart pill dispenser provides automated dispensing, real-time tracking, and remote monitoring that outperform traditional pill organizers and clock alarms, making this solution much nearly reliable and user-friendly. In comparison to a basic pill dispenser that merely sits on its own, ours connects over the cloud with the user through mobile alerts and possible future upgrades can include AI-based analytics to optimize reminders. Future enhancements might include an RFID for governance, a voice assistant, and pill quantity detection for security and usability.

The practical, low-cost, and scalable solution can significantly enhance medication adherence among the elderly, patients suffering from chronic illnesses, and those monitored remotely for healthcare purposes. The fusion of IoT, automation, and real-time data analytics makes this project provide a new and commercially impactful contribution to the field of smart healthcare technologies.