Arduino and ESP32-Based Healthcare System: Smart Monitoring for Better Patient Care

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As part of my **semester mini-project** in **Embedded Systems**, I successfully developed an **Arduino and ESP32-based Healthcare Monitoring System**, leveraging IoT to enhance real-time patient monitoring. This project provided hands-on experience in **sensor integration, wireless data transmission, and remote healthcare solutions**.

- **Project Insights & Technical Outcomes:**
- **Real-Time Health Monitoring:** Integrated **biometric sensors** (temperature, heart rate, SpO2) with Arduino to collect patient data.
- **IoT Connectivity with ESP32:** Enabled **wireless transmission** of health parameters to a cloud-based platform for remote access.
- **Data Visualization & Alerts:** Implemented a **dashboard interface** for real-time monitoring and alert triggers for critical conditions.
- **Real-World Applications:** Explored applications in **telemedicine, smart hospitals, and home-based patient care systems**.

This project strengthened my **expertise in IoT, biomedical sensors, and cloud integration**, reinforcing my passion for **innovative healthcare solutions through embedded systems**!