TOP STUDENT PROJECTS

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PROJECT TITLE
AUTOMATED IV FLUID MONITORING SYSTEM

Team 17

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PROBLEM STATEMENT

In general wards, nurses manually monitor IV fluid bottles. In crowded conditions, IV fluids run empty without timely replacement, which can lead to blood backflow, treatment delay and patient risk.

SOLUTION

The Smart IV Fluid Monitoring System is designed to enhance patient safety and reduce the workload of healthcare staff during IV fluid administration. It uses a flow sensor to monitor fluid rate and an IR sensor to detect air bubbles, with data processed by an ESP32 microcontroller. When the fluid level is low or air bubbles are detected, the system triggers alerts through a buzzer and LED indicators. A 16×2 LCDs key information such as flow rate and system status, while an SD card module stores data for future analysis. For added safety, a motor-controlled valve can regulate or stop fluid flow during bottles or air entering the bloodstream. This system ensures real-time monitoring, alerts, and improved reliability in hospitals.



Technology stacks:

C Program

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