



## **Problem Statement:**

In the current configuration, a constant oversight from a caregiver or nurse is vital to ensure continuous monitoring of the saline bottle level. Intravenous fluid flow is regulated using a roller clamp mechanism. Failure to promptly notice depletion of the saline bottle could result in the dangerous backflow of blood from the patient, requiring immediate intervention in emergency scenarios. Our system addresses this issue by incorporating three external sensors strategically positioned around the saline bottle to monitor liquid levels. The first sensor signals when the saline bottle is full, the second alerts when half of the saline has been administered, and the third, indicating low saline levels, triggers an actuator to halt the flow. This action prompts an immediate alert to the nurse, with relevant data simultaneously communicated to the dashboard for comprehensive monitoring. Additionally, the system involves inputting medication information into a database, with real-time saline status prominently displayed on the graphical user interface (GUI) dashboard. The incorporation of a microcontroller facilitates efficient communication between the database and the entire system. Furthermore, a servo motor is deployed to automatically stop the saline flow upon reaching the final level, thus enhancing safety measures. To ensure timely notifications, a buzzer is activated, ensuring prompt awareness of critical situations.

## **Company name**

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