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| **Abstract:** |  |
| Abstract— Since Bangladesh is the most densely populated country in the world, we need to develop smart and automatic devices to serve our people better. At present, in hospitals and clinics, saline is being infused manually and without any feedback system. As a result, sometimes it causes overflow or underflow incidents and hence creates many problems for the patients. To protect the patients from such accidents, we proposed, designed, simulated, and implemented a prototype smart saline infusion control and monitoring system based on an Arduino microcontroller and the Internet of Things (IoT). Such a device would replace the need for a Nurse to constantly keep an eye on the saline bottle level connected to a patient. If the nurse ever fails to control the saline flow at an appropriate rate, the system will automatically adjust the flow rate. When the bottle gets empty, the fluid flows back into the saline bottle, and it may harm the patient. However, our system is IoT based, and this can monitor the saline level of the bottle continuously and update it in the database, and generates alert signals when the saline level goes below a threshold level. If the control room fails to respond, a screw-actuated clamp mechanism will stop the flow and save the patient. In the future, some features will be added to this device so that it can help our patients, doctors, and nurses. Besides, other health monitoring parameters may be added with this device and a central database system can be made for future reference. It will also help the government offices and insurance companies to get the actual health data of a person. | |