REVIEW ON IOT BASED IV BAG MONITORING AND ALERT SYSTEM

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ABSTRACT: In the process of medication, it is a common practice to treat patients with saline for dehydration and other medical ailments to improve the health condition of the patients. When fed with saline continuous observation of nurses is mandatory in monitoring the level of the saline. There are many cases where patients are being harmed due to the staff inattentiveness, as their absence does not notice the the container's saline level has been reached. As soon as the saline in the container is empty, the issue of blood clots occurs. Thus, an Internet of Things (IoT) based saline level monitoring system has been designed to prevent injury to the patient. A sensor that continuously finds the saline droplets is incorporated into the suggested model. The hospital personnel is informed by buzzer whenever the sensor fails to detect drops for a predetermined amount of time, which aids in patient safety monitoring. The need for health prevention is growing along with the global population. Thanks to technical breakthroughs in the many disciplines of sensors, clinical care has advanced rapidly in recent years. and micro-controllers for assuring fast recovery of patients in the hospitals. The major and crucial necessity of the hospitalized patients is that each patient ought to be provided with a better treatment and observation and ought to be provided the right measure of vital nutrition at the right time. Saline solution is used for the covid patients to reduce the inflammation in different parts of the body such as lungs, heart, kidney and skin. Among the various treatments, the saline therapy is the most important treatment that numerous patients receive from the hospitals. Whenever a saline is fed to the patients, the patient needs to be persistently administered by a nurse or a care-taker. But unfortunately, there are some circumstances like patient's blood flow backwards into the saline tubing system. The proposed saline level monitoring and automatic alert system helps to protect the patients in this Covid time and to provide them with safety during saline feeding hours. tThe Healthcare sector has progressed by quantum leaps in the past few years. Hence, it is evident that this growth of the industry should be managed properly by all the hospital staff. This causes very little attention to patient monitoring level of the saline bottle and as well as close the saline tube comprising of air bubble to avoid air embolism when the bottle is about to get empty. The Healthcare sector with innovative techniques has brought easiness in day to day life. Automation of the saline system is the need of hospitals.

Saline is a basic thing used in every hospital to deliver drugs to the patient to cure them. Whenever saline is fed to the patient there is always a requirement of nurse and caretaker to monitor.

Index Terms – ESP328p, IOT, saline level detection system,power supply ,cloud data saving .

I. INTRODUCTION

The "next big thing" in the world today is the Internet of Things, or IoT, which is predicted to have 30 billion gadgets by the end of this decade.The term "Internet of Things" (IoT) refers to a network of actual physical objects, or "things," that have been fitted with sensors, programming, and other technologies in order to communicate and exchange data with other systems and devices via the internet.

Stated differently, it is a tangible item that is linked to the Internet. In many cases, IoT systems connect highly specialized devices with limited programmability and customizability. The Internet of Things is one among the top emerging tech-neologies which is being widely used in Machine Learning, Embedded Systems, Smart homes, Smart city, Self-driven cars, Telehealth, Farming, Analytics, Flight services, Health, Traffic monitoring, Home Automation, Online Shopping and many more. Humans are susceptible to respiratory illnesses caused by Corona viruses. Hypertonic saline solution is utilized for the Covid-19 patients to reduce the inflammation in different parts of the body such as lungs, heart, kidneys and skin and furthermore it is utilized for providing extra water to rehydrate people or supplying the daily water and salt needs of a person who is unable to take them by mouth.

Here the nurses/ doctors should screen the level of the saline fluid consistently which is given to the patient because after completion of the saline fluid there are two possibilities, the blood may flow backward from the patient's body to the saline bottle due to low pressure present in the bottle and high pressure of blood flowing in the patient body or there are also chances that the air pre-sent in the saline bottle enters in the form of air bubbles from the saline bottle into the blood stream and stops the flow of blood prompting the risky state of the patients.

II. LITERATURE SURVEY

A) IoT based saline level monitoring system:

In the process of medication, it is a common practice to treat patients with saline for dehydration and other medical ailments to improve the health condition of the patients. When fed with saline continuous observation of nurses is mandatory in monitoring the level of the saline. There are many cases where patients are being harmed due to the staff inattentiveness, as their absence does not notice the completion of saline level in the container. This arise the problem of back flow of blood immediately after the completion of saline in container. Hence to protect the patient from getting harmed an IoT based saline level monitoring system has been developed. The proposed model incorporates a sensor which

continuously detects the saline drops. Whenever the sensor does not detect the drops for a certain interval it alerts the staff of the hospital with the buzzer, helping to monitor the safety of the patients.
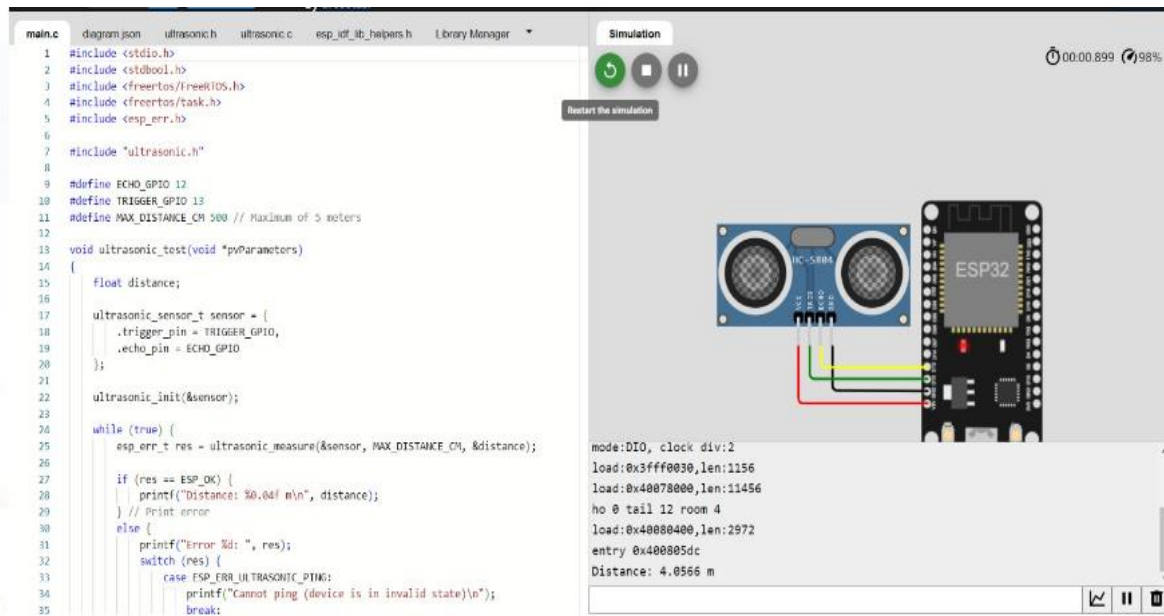
B) Model programming view:

Fig. 1 - Model programming

III. FUTURE SCOPE

1. It can send the wireless messages to doctors and nurses about the saline droplet rate.

2. It can also include the smart health system, which gives the information about body temperature, blood pressure, heart rate and also the pulse rate. This help in deciding whether the patient requires another saline bottle or not.

IV. CONCLUSION

The amount of human labour required by nurses to continuously check patients who have had saline injections will decrease with the implementation of an automatic saline monitoring system. The entire suggested framework is automated, thus very little human intervention or effort is needed on the part of the centre. It will be especially useful at night as the nurses won't have to worry about periodically checking the saline level in the saline container, which is a scary task.

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