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IoT Based Glucose Monitoring and Alert System Using Contactless Sensor

Saravanak kumar N
PG Scholar, Department of Medical Electronics,
Senguthar Engineering College (Autonomous),Thiruchengode, India
Geetha E
Professor, Department of Medical Electronics,
Senguthar Engineering College (Autonomous),Thiruchengode, India
geethasathees12@gmail.com
https://orcid.org/0009-0009-8747-5896

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Abstract: Today Technology has grown to that level where rapid support could be provided to patient's health and provide them with early recovery. In hospitals, almost all patients, mainly ICU Patients, have to regulate the volume of fluids which is done using drip. These Drips needs regular monitoring or changing to maintain a constant flow of Fluids in our system we will be using Contactless Water Level Sensor to measure the weight, though this system looks less complex, overcrowded medical facilities and lesser medical team support can put patients at risk which may affect the health of patient severely .Manual observing of drips level sometimes get missed or they are not able to monitor intensely because of hectic work schedule and overcrowded patients by using our system the risk of manual observation comes down and IoT based autonomous monitoring is done effectively. Since we are using an IoT Cloud Platform to store the data, health parameters of the patient are vital for us the know their rate of recovery which helps to solve the existing challenges which is in the current usage along with this we also integrate solution for dehydration for Pregnant women and women's working in field. Dehydration is more normal during pregnancy than at different occasions. Although most cases of dehydration in pregnancy are mild, severe dehydration can be dangerous for both the mother and the baby. The baby puts a lot of demands on the body, therefore pregnant women need to eat a lot of extra nutrients and drink a lot of water. Morning sickness, like conditions that induce excessive vomiting, can contribute to dehydration. When dehydration becomes severe, thirst feelings may disappear. Dizziness and disorientation, a beating heart, and changes in the baby's rhythmic movement are all signs of more significant dehydration during pregnancy. A serious shortage of hydration can result in poor amniotic fluid production and organ malfunction, which can lead to the infant's growth being stunted. We created a Modern Dehydration Detecting and Auto Feedback Recommendation System for Pregnant Women to address this dehydration problem in pregnant women and we have also in addition integrated fall detection sensor to analyse fall and send Emergency Notification for Immediate Rescue.
Keywords: Drips, contactless sensor, IOT cloud platform, dehydration, fall detection

I. INTRODUCTION

Controlling the amount of fluid you receive intravenously, or through your bloodstream, is known as intravenous fluid regulation. A bag attached to an intravenous line is used to administer the liquids. This is a little tube that is put into a vein and is frequently referred to as an IV (Kamran Manzoor,2012). During intravenous therapy, there are two ways to control the flow and volume of fluids administered: manually or using an electric pump. For both procedures, the nurse must frequently check the IV to make sure whether the patient is receiving the right amount of fluid (Anand et. al.,2018). In manual observation, one can manually control the rate at which fluid drips from a bag into an IV. To either slow down or speed up the rate of flow, the nurse adjusts the pressure that a clamp applies to an intravenous tube. To ensure the rate of flow is appropriate, they can count the number of droplets per minute and make any necessary adjustments. An electric pump can also be used to control the IV's flow rate. The nurse sets up the pump to inject the appropriate volume of fluid into the IV at the appropriate rate (Mohammed Arfan et. al.,2020). A Contactless Water Level Sensor is used to measure the weight of the IV bag. An electrical signal that can be measured and standardized is produced when a force, such as tension, compression, pressure, or torque, is converted into a Contactless Water Level Sensor (Ajibola et. al.,2018). A force transducer, that is. The electrical signal varies in response to the force acting on the Contactless Water Level Sensor. Pneumatic, hydraulic, and strain gauge Contactless Water Level Sensor s are the most used varieties. A Contactless Water Level Sensor will be attached to the saline stand model, and the bottle would be hung based on the variation of the weight.

Along with that vital parameters like pulse detection and SPO2 detection of the subject are monitored and the data are stored in the IoT Cloud platform. IoT cloud platforms combine the functionality of IoT devices and cloud computing, which is provided as a seamless service. Additionally, they go under other names as Cloud Service IoT Platform. With billions of devices currently online, there is an increasing opportunity to use various apps to effectively process the huge data that these devices collect (Ramisha rani et. al.,2017 The loss of water and salts necessary for healthy body function is dehydration. Pregnancy issues include neural tube abnormalities, low amniotic fluid, insufficient production of breast milk, and even early childbirth can all result from dehydration during pregnancy. The signs of mild to moderate dehydration are sticky, dry mouth, headache, constipation, and decreased dizziness. To measure the degree of dehydration in a person's body, dehydration monitoring systems come in a variety of products kinds, such as mobile devices or wearable hydration monitoring devices. Dehydration monitoring systems are increasingly in demand due to their wide range of uses in the diagnosis of diseases, the detection of drug addiction, and the enhancement of athletic performance (Hayley Miller,2015). The market for dehydration monitoring systems is expected to grow as a result of these devices, which are primarily integrated with standalone sensor systems that assess dehydration (Kripa et. al.,2021). To address the issue of pregnant women's dehydration, an automated feedback recommendation system has been developed. A fall detection sensor is used to analyze falls and transmit emergency notifications for immediate rescue.

II. LITERATURE SURVEY

Intravenous (IV) Drip rate controlling and monitoring for risk-free IV delivery. In this paper they discussed the advantages and risks of IV drip set, the importance IV drip rate, existing infusion pumps and their drawbacks, attempts made to overcome the drawbacks of infusion pumps and finally the need for next generation IV drip set which can not only monitor but also control the drip set Smart drip infusion monitoring system for alert through nRF24L01. This project work involves trickle implantation observing framework for use in hospitals. The framework comprises of a drip infusion, sugar level observing gadgets and a monitoring screen. The mixture observing gadget utilizing a pressure sensor (MPX10GP) technology module can identify the trickle implantation rate and a vacant imbuement arrangement sack, and after that, this information is sent to the monitoring screen put at the medical caretaker's station by means of the radio frequency (nrf24L01). The monitoring screen gets the information from trickle implantation observing gadgets and after that shows graphically them. When pressure sensor value reaches the threshold value, control valve will close which stops immediately flow of fluid without any airflow in patient's vein. In this manner, the created framework can screen seriously the dribble implantation circumstance of the few patients at the medical caretakers' station. This study proposes an IoT-based monitoring and control platform for IV infusion setup. The suggested work decreases the amount of time and effort required to monitor the infusion setup and allows for wireless monitoring. It helps in ensuring there is zero margin of error as improper administration of drip can lead to many problems. It also improves clinical efficiency, safety and patient experience in hospitals and makes home care possible for many patients. The use of an ultrasonic sensor simplifies and expedites system implementation because it eliminates the need to calibrate the system for different fluids. LDR is used to detect bubble formation of the fluid which eliminates the risk of arterial air embolism which can cause heart attacks, stroke or respiratory failure. This system may be quickly installed on the stand where the drip bottle is hung, making replacing the bottle simple without having to bother about all the gear Modern Dehydration Detecting and Alerting System for Pregnant Women. Created a Modern Dehydration Detecting and Alerting System for Pregnant Women to address this dehydration problem in pregnant women. Utilised an Arduino UNO, a power supply, a sweat sensor, an LCD display, and embedded C software in this system. Utilised a sweat sensor to detect dehydration in pregnant women, which will be sent to the Ardunio UNO, which will analyse the data and present it on the LCD display. The degree of dehydration and metabolic activity are constantly monitored by this system. Pregnant women can maintain their hydration levels and have appropriate fetal development with the aid of this device. Dehydration in the older adult. Dehydration affects 20% to 30% of older adults. It has a greater negative outcome in this population than in younger adults and increases mortality, morbidity, and disability. Dehydration is often caused by water deprivation in older adults, although excess water loss may also be a cause. Traditional markers for dehydration do not take into consideration many of the physiological differences present in older adults. Clinical assessment of dehydration in older adults poses different findings, yet is not always diagnostic. Treatment of dehydration should focus on prevention and early diagnosis before it negatively effects health and gives rise to comorbidities. The current article discusses what has most thoroughly been studied; the best strategies and assessment tools for evaluation, diagnosis, and treatment of dehydration in older adults; and what needs to be researched further. Simultaneous monitoring of sweat and interstitial fluid using the concept is successfully realized through sweat stimulation (via transdermal pilocarpine delivery) at an anode, alongside extraction of interstitial fluid (ISF) at a cathode. The system thus allows on□demand, controlled sampling of the two epidermal biofluids at the same time, at two physically separate locations (on the same flexible platform) containing different electrochemical biosensors formonitoring the corresponding biomarkers The performance of the developed wearable device is demonstrated by measuring sweat□alcohol and ISF□glucose in human subjects consuming food and alcoholic drinks. The different compositions of sweat and ISF with good correlations of their chemical constituents to their blood levels make the developed platform extremely attractive for enhancing the power and scope of next□generation noninvasive epidermal biosensing systems. stretchable electrochemical sweat sensor for glucose and Ph detection. In this study, they report on the fabrication of a stretchable and skin-attachable electrochemical sensor for detecting glucose and pH in sweat. A patterned stretchable electrode was fabricated via layerby-layer deposition of carbon nanotubes (CNTs) on top of patterned Au nanosheets (AuNS) prepared by filtration onto stretchable substrate. For the detection of glucose and pH, $CoWO_4$/CNT and polyaniline/CNT nanocomposites were coated onto the CNT– AuNS electrodes, respectively.

A reference electrode was prepared via chlorination of silver nanowires. The sensor also showed good adhesion even to wet skin, allowing the detection of glucose and pH in sweat from running while being attached onto the skin. This work suggests the application of our stretchable and skin- attachable electrochemical sensor to health management as a high-performance healthcare wearable device. Dehydration measurement using sweat sensor patch. Technology has increased visibly large. People find ways to easily detect their conditions. Heartbeat and dehydration level is one of the most common among people especially athletes. Athletes are drifted towards wearable technologies to track their training and recovery. Usually, a dehydrated person sweat more. The sweat contains various physiological substance and health data. Based on studies sweat consists of salts and ions like [Na+], [K+], [Cl] lactate, glucose, and ammonia. We are developing a wearable sweat analyser that can detect the raise in concentration of sodium and potassium. The sweat patch consists of a counter electrode created by screen printing Silver Chloride (AgCl) nanoparticles on Polydimithylsiloxane (PDMS) material and reference electrode (RE) created on the patch material by adding a platinum nanoparticle. This sweat sensor patch is connected to a microcontroller along with a temperature sensor and a Bluetooth module. The data which is collected by the sweat patch and the temperature sensor is sent via Bluetooth to mobile application were the data is displayed. Sensing body dehydration, they consider various methods of sensing hydration level, and present our own approach. Dehydration has long-term effects on gastrointestinal, kidney, and heart function, contributing to constipation, chronic kidney disease, and coronary heart disease. In combination, these symptoms can lead to major health degradation, as well as loss of productivity in the workplace or at school/college. Sensing based non-invasive context aware dehydration alert system using machine learning algorithm, The development of an Android application over Bluetooth to connect with wearable EDA sensor integrated wristband to track hydration levels of the user's real time and instantly alert to the users when the hydration level goes beyond the danger level. To validate the developed tool's performance, they recruit 5 users, carefully designed the water intake routines to annotate the dehydration ground truth and trained state-of-art machine learning models to predict instant hydration level i.e., well hydrated, hydrated, dehydrated, and very dehydrated.

III.METHEDOLOGY

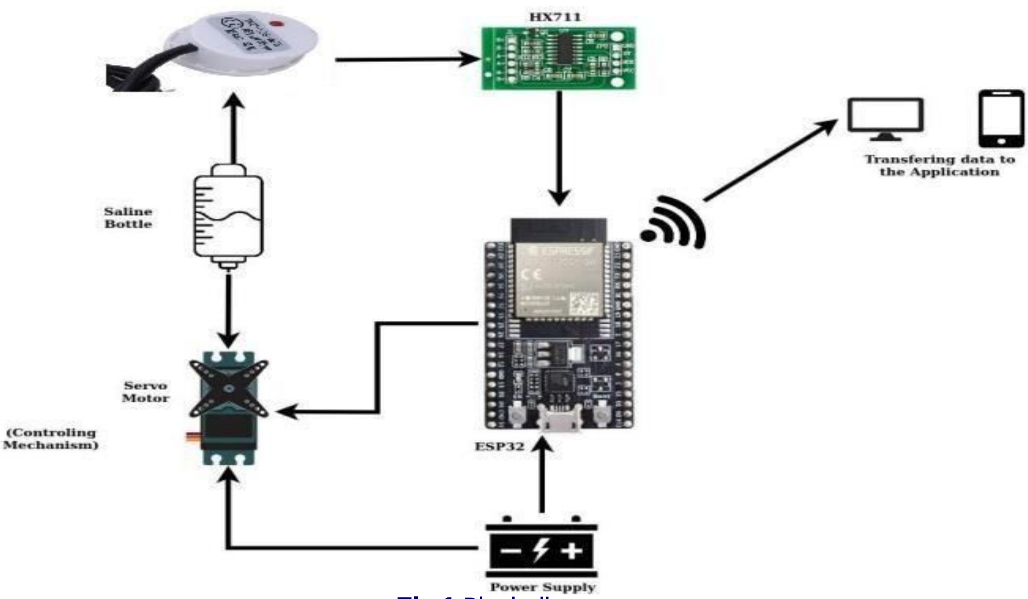

Fig 1 Block diagram

At mega 2560 are the major controllers. The fabricated model that is the IV stand is connected to the microcontrollers. The fabricated model consists of HX711 Contactless Water Level Sensor. HX711 Contactless Water Level Sensor is used to measure the weight of the saline bag. When there is a variation in the weight of the saline bag the SMS alert will be given through GSM and the data are stored in the IOT cloud platform. The outputs are shown graphically and also in Excel form. Additionally, pulse detection and SPO2 detection are also detected by MAX 30100 Sensor and the outputs are IOT cloud platform. In our project we are using Thing speak as a IOT platform. In addition to its GSR sensor is used for measuring the sweat conductance of the body and the readings will be displayed in the LCD display. And Accelerometer sensor MPU 6050 is used for fall detection. RTC is real-time clock is used to provide accurate time and date that can be used in a variety of applications.The outputs are shown in LCD crystal display 20x4.

A. ESP32 MICROCONTROLLER

Fig2: ESP32 Microcontroller

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A single 2.4 GHz Wi-Fi and Bluetooth combination chip called the ESP32(Fig 4.2) was created using TSMC's ultra-low-power 40 nm technology. It is made with the best RF and power performance in mind, and it exhibits resilience, adaptability, and dependability in a number of power scenarios. The ESP32 series of chips contains the following models ESP32D0WD-V3, ESP32-D0WDR2-V3, ESP32U4WDH, ESP32-S0WD, ESP32D0WDQ6V3 (NRND), ESP32-D0WD (NRND), and ESP32- D0WDQ6 (NRND). Of these, ESP32-D0WD-V3, ESP32-D0WDR2-. The ESP32 is made for Internet-of-Things (IoT) and wearable electronics applications. It includes finegrained clock gating, numerous power modes, and dynamic power scaling, among other cutting-edge traits of low-power processors. For instance, ESP32 is only periodically awakened in a low-power IoT sensor hub application scenario when a specific situation is recognized. To reduce the amount of energy the chip uses, low-duty cycles are used. The power amplifier's output can also be changed, which aids in finding the best balance between communication range, data rate, and power usage. With about 20 external components, ESP32 is a highly integrated solution for Wi-Fi and Bluetooth IoT applications. Antenna switch, RF balun, power amplifier, low-noise receive amplifier, filters, and power management modules are all integrated into the ESP32. Because of this, the overall system uses a small amount of printed circuit board (PCB) space. The ESP32 employs CMOS for single- chip, fully integrated radio and baseband, and it also incorporates sophisticated calibration circuitries that enable the solution to fix flaws in external circuits or adapt to changes in the environment. As a result, costly and specialist Wi-Fi testing apparatus is not necessary for the mass production of ESP32 solutions (Fig 4.3).

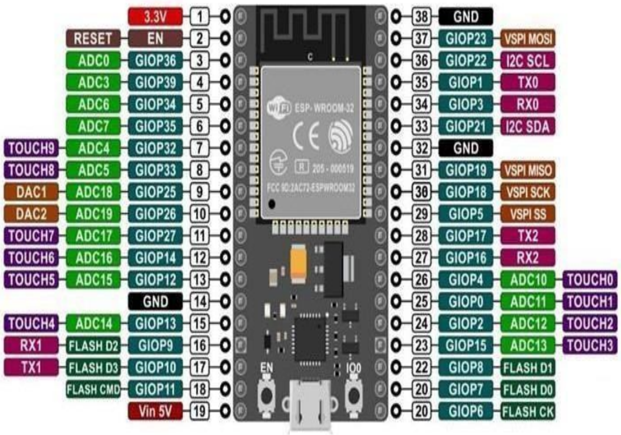

Fig 3: Pin diagram of ESP32 Microcontroller

B.ARDUINOMEGA MICROCONTROLER

Fig 4: Arduino Mega Microcontroller

A microcontroller board called the Arduino Mega 2560 (Fig 4.4) is based on the ATmega2560 (datasheet). It contains 16 analogue inputs, 4 hardware serial ports (UARTs), a 16 MHz crystal oscillator, 54 digital input/output pins (14 of which can be utilised as PWM outputs), a USB connector, a power jack, an ICSP header, and a reset button. It comes with everything needed to support the microcontroller; to get started, just plug in a USB cable, an AC-to-DC adapter, or a battery. The majority of shields made for the Arduino Duemilanove or Diecimila are compatible with the Mega. Either an external power source or the USB connection can be used to power the Arduino Mega2560. The power source is automatically chosen. Either a battery or an AC-to-DC adapter (wall wart) can provide external (non-USB) power. A 2.1mm center-positive plug can be used to connect the adapter by inserting it into the board's power connector. The GND and Vin pin headers of the POWER connection can accept battery leads. The board can be powered by a 6 to 20-volt external supply. The 5V pin, however, may deliver less than five volts if supplied with less than seven volts, and the board may become unstable. The voltage regulator could overheat and harm the board if more than 12V is used. Because it does not employ the FTDI USB-to-serial driver chip, the Mega2560 differs from all earlier boards. Instead, it has an Atmega8U2 that has been configured to act as a USB-to-serial converter. VIN, as opposed to 5 volts from the USB connection or another regulated power supply, is the input voltage to the Arduino board when it is using an external power source (Yusuf Abdullahi Badamasi ,2014). This pin can be used to access voltage that has been supplied via the power jack or to feed voltage to it. The microprocessor and other components on the board are powered by a controlled 5V power source. This can be supplied by USB or another regulated 5V source, or it can be obtained from VIN via an onboard regulator.3V3. an internal regulator- generated 3.3-volt supply. A 50-mA maximum current consumption is allowed. GND. drilled pins. The pin Mode (), digital Write (), and digital Read () routines allow you to use any one of the 54 digital pins of the Mega as an input or output. They use 5 volts to work. Each pin includes a 20–50K ohm internal pull-up resistor that is unconnected by default and has a maximum current capacity of 40 mA.

A computer, another Arduino, or other microcontrollers can all be communicated with using the Arduino Mega2560's many communication features. Four hardware UARTs are available on the ATmega2560 for TTL (5V) serial connection. A virtual COM port is provided to software on the computer by an ATmega8U2 on the board (Windows machines require an. inf file, whereas OSX and Linux machines natively detect the board as a COM port). Simple textual data can be transmitted to and received from the board using the serial monitor that is part of the Arduino software. When data is transmitted using the ATmega8U2 chip and USB connection to the computer, the RX and TX LEDs on the board will flash (but not for serial transmission on pins 0) (Fig. 4.5).

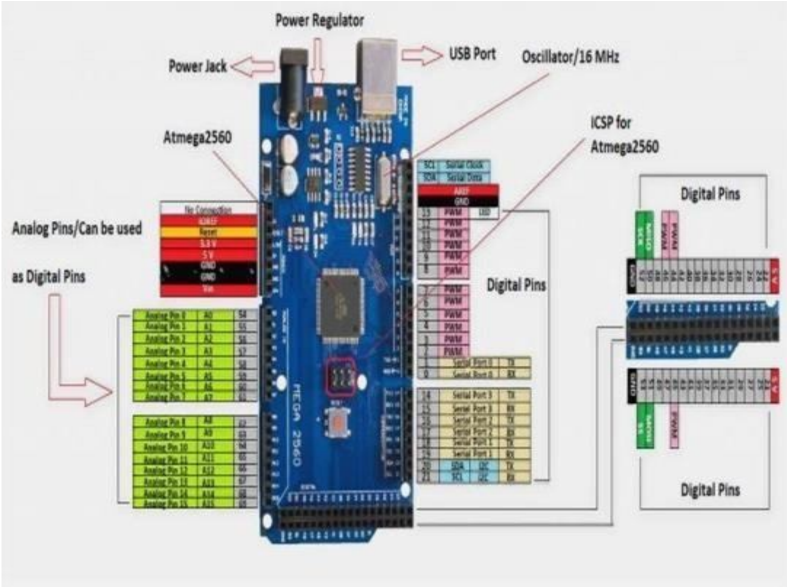

Fig 5 :Pin diagram of Arduino Mega Microcontroller

C.ARDUINO NANO MICROCONTROLLER

A compact Arduino board called the Nano is built around an ATmega328P (Fig. 4.6) or ATmega628 microcontroller. The Arduino UNO board has the same connection. A sustainable, compact, reliable, and adaptable microcontroller board is referred to as a Nano board. In comparison to the UNO board, it is modest in size. The Arduino (IDE), which is available for a number of platforms, is used to arrange the Arduino Nano. Integrated Development Environment is referred to in this sentence. The Arduino IDE and microUSB are the tools needed to get our projects running on the Arduino Nano board. On the laptop or desktop, the Arduino IDE programme needs to be installed. The Arduino Nano board receives the code from the computer via the tiny USB. Compared to the Arduino UNO, the Arduino Nano is smaller and comes with a little USB cable. Because both Nano and UNO use the ATmega328p microcontroller, we can use Nano in place of UNO. It's also simpler to find the Arduino UNO than the Nano. It is regarded as the industry standard board and is simple to use for newcomers or novices. While the Arduino UNO is available in TQFP, the Nano is available in PDIP (Plastic Dual - Inline Package) (Plastic Quad Flat Pack). The Arduino UNO has 14 digital pins, a USB port, a power jack, and an ICSP (In-Circuit Serial Programming) header in addition to 6 analogue pin inputs. There are 14 digital pins and 8 analogue pins on the Arduino Nano's I/O pin set. Additionally, 6 Power. The Nano board's operational voltage ranges from 5V to 12V. Nano has a total of 22 input/output pins. There are 8 analogue pins and 14 digital pins. The 14 digital pins include 6 PWM (Pulse Width Modulation) pins (Fig.4.7). The Arduino Nano's 6 PWM pins are used to translate digital signals into analogue impulses. The conversion is accomplished by changing the pulse's width. The Arduino Nano's crystal oscillator operates at a 16MHz frequency. Numerous applications, including robotics, control systems, instrumentation, automation, and embedded systems, employ the Arduino Nano. QR Code Scanner, DIY Arduino Pedometer, and other projects were developed using Arduino Nano.

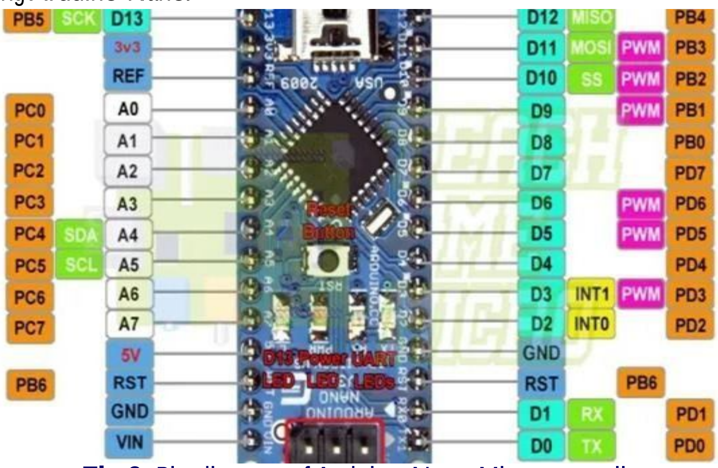

Fig 6: Pin diagram of Arduino Nano Microcontroller

Additionally, we may link an Arduino Nano to the WIFI. Nano's features are comparable to those of the Arduino UNO. Nano is a special option for making electronic projects and devices with a small footprint because to its adaptability and eco-friendliness.

D.MAX 30100 PULSE AND HEART RATE SENSOR

Fig 7: MAX 30100 Pulse and Heart rate sensor

The MAX30100 (Fig 4.8) is a sensor solution with integrated pulse oximetry and heart-rate monitoring. It combines a pair of LEDs, to detect pulse oximetry and heart rate signals, a photodetector, improved optics, and low-noise analogue signal processing are used. The MAX30100 may be turned down using software and runs on 1.8V and 3.3V power supplies. Very little standby current enables the power supply to always be connected. Integrated LEDs, a photo sensor, and a high-performance analogue front-end simplify design with a complete pulse oximeter and heart-rate sensor solution. Tiny 14-Pin Optically Enhanced System-in-Package, 5.6mm x 2.8mm x 1.2mm. Programmable sample rate and LED current for power savings. Ultra-Low Shutdown Current (0.7A, typ), Advanced Functionality, Increases Battery Life for Wearable Devices, Improves Measurement Performance A robust motion artefact resistance is provided by high SNR. High Sample Rate Capability, Fast Data Output Capability, Integrated Ambient Light
Cancellation (Fig 4.9).

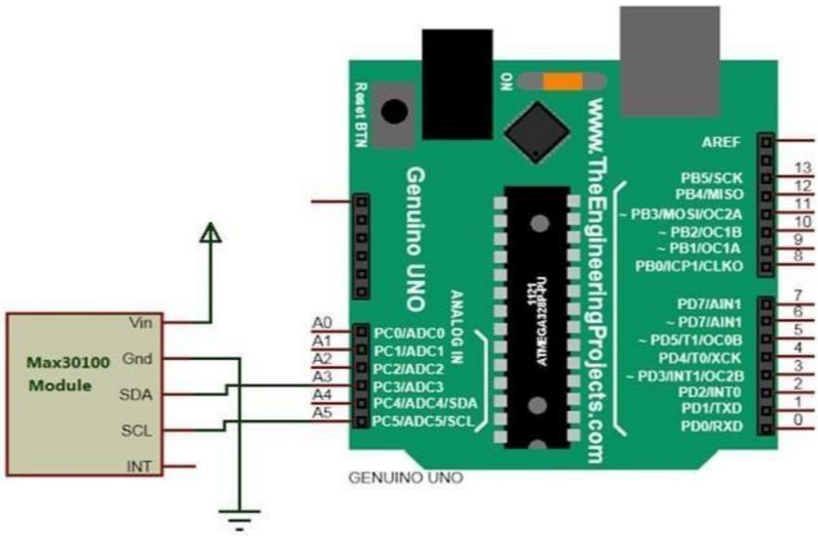

Fig 8: Pin diagram of MAX30100 Pulse and Heart rate sensor

IV. RESULT AND DISCUSSION

Inappropriate intravenous fluid therapy is a notable cause of patient morbidity and mortality and may result from either improper volume (too much or too little) or improper type of fluid. Extravasation, is a condition where the fluid leaks into the tissues surrounding the IV site, which occurs when the wall of vein is pierced or when the fluid is flowing into the neighbouring tissue rather than into the vein. This occurs when the needle or cannula accidently slips out of the vein. Infiltration causes the tissue to swell giving the area involved a bulgy appearance due to accumulation of fluid. Air embolism is a condition where an amount of air inadvertently enters the vascular system and causes heart attack. The accumulation of up to 10 mls of air intravascularly can have serious or even fatal effects. Catheter embolism occurs when a bit of a plastic cannula breaks off and flows into the vascular system. Mechanical complications occur as a result of: changes in the needle position in the vein, position of the patient, height of the solution, amount of solution remaining in the container, venospasm, kinked tubes, plugged air vents and plugged needles or cannula. Priyadharshini et. al., (2015) proposed Automatic Intravenous Fluid Level Indication System for Hospitals using a lowcost RF based automatic alerting and indicating device where IR sensor is used as a level sensor. Simon Peter Sskitoleko, et. al., (2012) proposed a design of a low-cost electronically controlled gravity-feed infusion set using a sensor housing that contains a reference light source located at a fixed distance from the photocell, to define a fixed optical sensing gap between them, with a reference light source normally intruding upon the photocell. But these two methods are costly compared to our project and we have integrated dehydration detection sensor especially for pregnant women. In our project the arrangement of the monitoring system is shown where a HX711 Contactless Water Level Sensor sensor is used to weigh the IV bag and give a proportional level of liquid. This idea can be implemented in any size of IV bag and the infusing fluid is not affected when sensed. The Contactless Water Level Sensor would be used to measure the weight of the IV bag, which would change as the fluid flows out of the bag.This change in weight can be used to calculate the flow rate of the IV fluid.

The Contactless Water Level Sensor would be connected to a microcontroller or a computer, which would process the data and send it to the health monitoring system. The health monitoring system would include sensors for measuring pulse, SpO2, and dehydration. These sensors would be connected to the microcontroller or computer, which would collect the data and send it to the ThingSpeak IoT platform for storage and analysis. The emergency SOS button would be connected to the microcontroller or computer as well. In case of an emergency, the user would press the button, and the system would immediately send a notification to a designated emergency contact, along with the location of the user Finally, the data would be stored on the ThingSpeak IoT platform, which would allow for easy analysis and visualization of the data. The platform could be used to monitor the patient's health over time, identify any trends or issues, and provide alerts or recommendations based on the data.

V. CONCLUSION

In this work, we suggested a modern dehydration detection method with an auto- feedback recommendation system for an IV drip monitoring alert system for pregnant women. The drip level is measured by the Contactless Water Level Sensor , and when it reaches a certain limit, the GSM sends alert messages. Along with this health metrics are also checked, and to detect dehydration, a GSR sensor is employed. These parameters are tracked, and the data is stored in the IoT cloud platform thingspeak. In thingspeak, the data is shown both graphically and on an excel sheet, which is helpful for future reference. As a result, this system is quite helpful for pregnant women because it continuously tracks and stores health parameter data, which is very helpful for doctors to diagnose. The technology can be simply integrated into already-existing healthcare institutions, offering a powerful monitoring tool that can enhance patient safety. Healthcare workers found themselves overburdened at the height of the Covid-19 Epidemic due to the constant influx of new patients. Frontline staff members cannot directly monitor and care for every patient during such periods. The following benefits are offered by the IoT intravenous fluid monitoring and alerting system: Automated IV Bag Monitoring and Alarm; Data Recording and IOT Online Transmission; Simple to Use; Facilitates the management of several patients by a single person. This project overcomes the consequences that occur due to negligence of monitoring the IV flow. Using proposed monitoring, one can monitor the level of bottle from a distant position which will aid in building smart healthcare system. This is an affordable, precise and efficient system that works in a smooth manner.

REFERENCE

1. Ajibola. O.O.E, Sunday. O. O, Eyehorua. D.O, “Development of Automated Intravenous blood infusion monitoring system using Contactless Water Level Sensor sensor, “Journal of applied sciences and environmental management, 22(10),2018,1557- 1561.
2. Anand. M, and Pradeep. M and Manoj. S and Raj, Marcel Arockia and Thamaraikani. P, “Intravenous drip monitoring system,” Indo-Iranian Journal of Scientific Research (IIJSR), 2(1), 2018,106-113.
3. David Nettikadan and Subodh Raj, “Smart community monitoring system using ThingSpeak IoT platform”, International Journal of Applied Engineering Research, 13(17), 2018, 13402-13408.
4. Hayley J. Miller, “Dehydration in the older adult,” Journal of gerontological nursing, 41(9), 2015, 8-13.
5. Jayoung Kim, Juliane R. Sempionatto, Somayeh Imani, Martin C. Hartel, Abbas Barfidokht, Guangda Tang, Alan S. Campbell, Patrick P. Mercier, and Joseph Wang,” Simultaneous Monitoring of Sweat and Interstitial Fluid Using a Single Wearable Biosensor Platform,” 5(10): 1800880,2018,01-11.
6. Kamran Manzoor, Waleed Ejaz, Najam Ul Hasan, Mustafa Arif, Seok Lee, Hyung Seok Kim,” Air embolism protecting system for safe intravenous therapy”, SHUSER 2012 - 2012 IEEE Symposium on Humanities, Science and Engineering Research,2012, 10771081.
7. Kory Taylor, Elizabeth B. Jones, Adult dehydration, Stat pearl publishing, NCBI bookshelf, 2022,55-61.
8. Kripa. N, Gomalavalli. R, Oinam Robita Chanu,” Modern Dehydration Detecting and Alerting System for Pregnant Women”, International Journal of Aquatic Science,12(03), 2021,53-57.
9. Manimegala. P, Anitha Mary. X, Neha Biji, Selshia Shiny. V,” Dehydration measurement using sweat sensor patch and pulse sensor,” Journal of Physics: Conference Series. 1937 012013,2021,01-10