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AN ENHANCED ELDERLY PERSON HEALTH PARAMETERS MONITORING SYSTEM WITH MEDICINE PRESCRIPTION

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Abstract : The clinical organizations address one of the top difficulties that each nation is going toward today. Despite the way that the clinical thought industry is put energetically in IT, yet the guaranteed improvement in getting security and adequacy has not been perceived up to the standards even today's affiliations truly depend upon paper clinical records and hand return notes to illuminate hand picks. Modernized data is siloed among divisions and applications. The IoT can pass on different inclinations to clinical organizations using sensors, insightful supplies, and so forth The Internet of Things (IoT) is another idea that licenses clients to relate different sensors and awesome gadgets to collect predictable information from the air. Regardless, it has been seen that an absolute stage is up to this point missing in the e-Health and m-Health models to utilize PDA sensors to recognize and bestow imperative information identified with a patient's success. In this undertaking our duty is twofold. First thing, we basically overview the current structure, which examines the appropriate approaches to manage send IoT in the field of clinical and sharp clinical thought. In like manner, we propose another semantic model for patients' e-Health. The proposed model named 'k-Healthcare' utilizes 4 layers the sensor layer, the affiliation layer, the Internet layer, and the association layer. All layers help out one another successfully and competently to give a stage to get to patients' thriving information utilizing advanced cells

Keywords. Arduino, NodeMCU, Heartbeat Module, LCD.

Introduction

The Internet of things is the inter-connection of devices, apps, sensors and network connectivity that enhances these entities to gather and exchange data. The distinguishing characteristic of Internet of Things in the healthcare system is the constant monitoring a patient through checking various parameters and also infers a good result from the history of such constant monitoring.

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Many such devices equipped with medical sensors are present in the ICUs now-a-days. There could be instances where the doctor couldn't be alerted in time when there is an emergency, despite of 24 hours of monitoring. Also there might be hurdles in sharing the data and information with the specialist doctors and the concerned family members and relatives. The technology that enhances these features is already available but is not accessible and affordable by most of the people in developing countries such as India. Hence these solutions to these problems can be just a simple extension to the current devices which don't have these facilities. This paper demonstrates a Remote Health Monitoring System controlled by microcontroller. In this paper, a system is designed to continuously monitor the vital parameters such as heart rate, blood pressure and body temperature. The information is stored on a cloud server database and can be displayed through an online website or mobile application by authorized personnel only. The main objective of this system is to update the data online and send an alert to the doctors for any abnormality and also predict if the patient is having any disease. The major aim of the paper can be summarized as following:

- To obtain the real-time medical information about a patient via IoT.
- Processing and classification of information gathered about the patient.
- To interpret and predict any disease or disorder in preliminary stage itself using the data mining techniques that will also provide the approach advantageous for decision making.
- To provide Internet of Things based healthcare solutions at anytime and anywhere.

II Project Introduction

2.1 AIM

The fundamental point of this task is to plan a framework that is utilized to screen the patient's condition and subtleties utilizing IoT innovation.

2.2 EXISTING METHOD:

The clinical organizations address one of the top difficulties that each nation is confronting today. Regardless of the way that the clinical thought industry put intensely in IT, yet the guaranteed improvement in getting thriving and advantage has not been perceived up to the guidelines even today affiliations truly depend upon paper clinical records and hand return notes to instruct hand to pick. Advanced data is siloed among work environments and applications.

The sharing of patient information among clinicians, divisions, and even patients is extraordinary and complex. Understanding IoT tech. in clinical thought might be a response to empowering clinical thought relationship to zero in their endeavors on clinical noteworthy associations and

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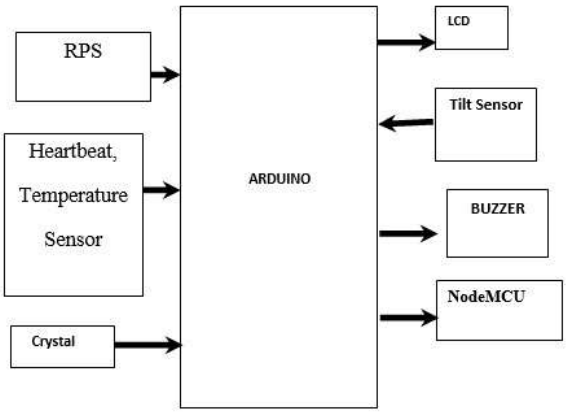
patient results which will make success checking diagnostics treatment in a more ideal and steady way with the decreased expense

2.3 PROPOSED METHOD:

The IoT can pass on various central focuses to clinical thought using sensors, quick supplies, and so forth The Internet of Things (IoT) is another idea that awards clients to relate different sensors and sharp contraptions to gather advancing information from the climate. In any case, it has been seen that a complete stage is as of recently missing in the e-Health and m-Health structures to utilize telephone sensors to distinguish and pass on tremendous information identified with a patient's flourishing. In this undertaking our devotion is twofold. From the outset, we for the most part assess the current sythesis, which talks about the earth shattering approaches to manage send IoT in the field of clinical and breathtaking clinical organizations. In addition, we propose another semantic model for patients' e-Health. The proposed model named 'k-Healthcare' utilizes 4 layers the sensor layer, the affiliation layer, the Internet layer, and the association layer. All layers help out one another viably and enough to give a stage to get to patients' success information utilizing PDAs.



Equipment:

Arduino, NodeMCU, LM35, Heartbeat Sensor.

Programming:

Arduino IDE

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III. ARDUINO

Overview:

Arduino Uno is a microcontroller board subject to the ATmega328P (datasheet). It has 14 pushed information/yield pins (of which 6 can be utilized as PWM yields), 6 essential information sources, a 16 MHz completed resonator (CSTCE16M0V53-R0), a USB alliance, a force jack, an ICSP header, and a reset button. It contains all that ordinary to help the microcontroller; on a crucial level interface it to a PC with a USB association or force it with an AC-to-DC connector or battery to begin. You can intrude with your Uno without anguishing essentially overachieving something mistakenly, most central outcome possible you can trade the chip for two or three dollars and start once more. "Uno" suggests one in Italian and was picked to stamp the presence of Arduino Software (IDE) 1.0. The Uno board and structure 1.0 of Arduino Software (IDE) were the reference sorts of Arduino, direct made to unendingly current deliveries. The Uno board is the first in the headway of USB Arduino sheets and the reference model for the Arduino stage; for a sweeping once-over of current, past, or old sheets see the Arduino report of sheets. •

Physical contraptions and sensors Physical contraptions and sensors can amass and see sagacious and multidimensional data, and check of the target state of a function uninhibitedly without human mediation. Besides, when contraptions capacity to get data with presented understanding, gadgets can act and respond. Condition setting will at that point be changed and the contraptions will reach out of the blue. In that limit, this assortment structure will be rehashed perseveringly. • Connection and foundation Association and foundation, for example, cloud, security, covering ceaselessly, security, insistence, and controlling, pull in interminable, solid information and data stream and assessment circles.

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LM35 TEMPERATURE SENSOR

LM35 is an exact IC temperature sensor with its out-put related with the temperature (in C). The sensor device is fixed and hence it isn't introduced to oxidation and specific structures. With LM35, the temperature can be evaluated more as it should be than with a thermistor. It besides has low self-warming and does not extend to than 0.1oC temperature upward air.

The working temperature value is from - 55°C to 100 fifty°C. The out-put voltage shifts by 10mV considering each upward high/fall in appropriate incorporating temperature, i.e., its scale to.01V/oC

No	Function	Name
1	Supply voltage; 5V (+35V to -2V)	Vcc
2	Output voltage (+6V to -1V)	Output
3	Ground (0V)	Ground

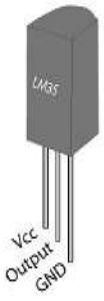

FIG: TEMPERATURE SENSOR LM35

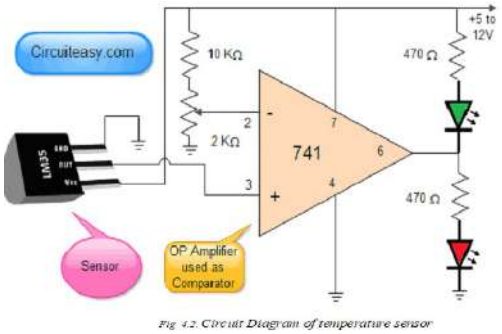

Fig 4.2. Circuit Diagram of temperature sensor

TILT SENSOR

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Tilt sensors, also known as tilt switches, are devices that are used to measure the angle at which an item is tilted about an absolute level plane... Tilt sensors can perform their function because they monitor the angle relative to a "zero" starting point. A detector of flames using infrared light.

They are tiny and compact instruments, which makes them a feasible alternative for a wide variety of applications where the detection of orientation or inclination is a vital component. Some examples of these applications include warning systems on construction or agricultural equipment. The tilt-switches that we manufacture here at Level Developments, in addition to our extensive selection of inclinometers and inclinometer sensors, also make use of highly accurate sensors to function. This gives them an advantage over alternatives such as mercury switches or rolling ball mechanisms.

Tilt sensors can perform their function because they monitor the angle relative to a "zero" starting point. They are configured with a maximum and lowest threshold in which the application will work or it will be safe to run based on the requirements of the individual application. If the tilt or inclination exceeds these threshold values in either direction, a relay will be engaged and the switch will be closed. This will result in an operation being sent to an external device such as an alarm or warning light to indicate that conditions are either unsafe or not functioning properly.

Heart beat sensor:

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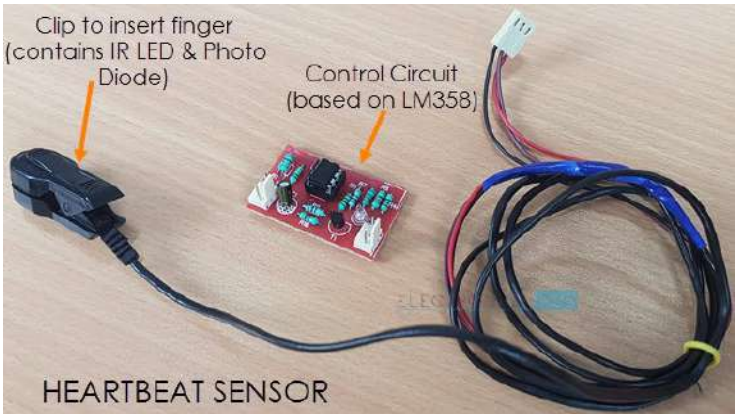


A heartbeat sensor is a piece of electrical equipment that can measure the heart rate, also known as the pace at which the heart beats.Two methods may be used to check a person's heart rate: the first method involves physically checking the pulse at the wrists or the neck, and the second method involves using a heartbeat sensor.

The monitoring of an athlete's or patient's heart rate is particularly significant since it is used to determine the status of the heart (just heart rate). There are several methods for determining a person's heart rate, but electrocardiography is the method that provides the most accurate results. However, using a heartbeat sensor is the simpler and more convenient technique to monitor the patient's heart rate. It is available in a variety of forms and sizes and provides a quick method for measuring a person's pulse. Wristwatches (also known as smartwatches), smart phones, chest straps, and other wearable devices can all have heartbeat sensors. The number of times that the heart either contracts or expands throughout one minute is denoted by the beats per minute (bpm) measurement used to describe the heartbeat.

IV. LCD

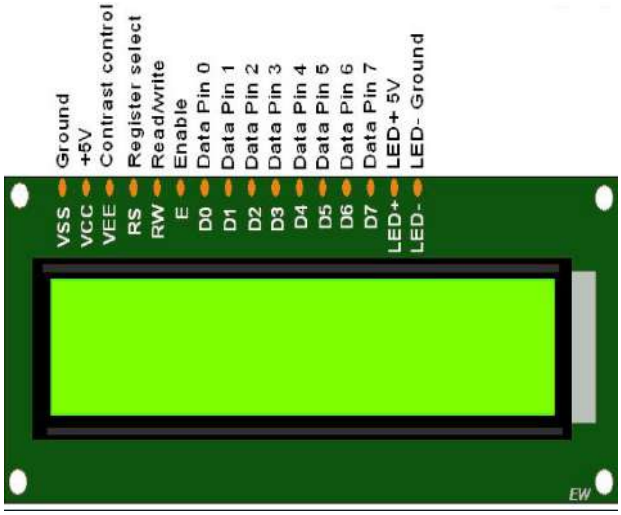
Introduction

LCD (Liquid Crystal Display) is such a level board show which utilizes fluid noteworthy stones in its major sort of development. LEDs have a gigantic and moving methodology of usage cases for clients and connections, as they can be customarily found in telephones, TVs, PC screens, and instrument sheets.

LCDs were a basic ricochet the degree that the development they eliminated, which breaker light-passing on the diode (LED) and gas-plasma shows. LCDs permitted partners to be all-around more meager than the cathode bar tube (CRT) development. LCDs eat up liberally less force than LED and gas-show shows since they search after the standard of deterring light

instead of delivering it. Where a LED emanates light, the fluid tremendous stones in an LCD pass on a picture utilizing foundation edification.

As LCDs have supplanted dynamically sorted out superstar drives, LCDs have started being eliminated by new presentation improvements, for example, OLEDs.



V. SOFTWARE TOOLS

Arduino Software:

Arduino IDE (Integrated Development Environment)

The Arduino progress condition contains a word processor for including code, a message zone, a book maintains, a toolbar with gets for crucial cutoff regular environmental factors, and an improvement of menus. It interfaces with the Arduino contraption to move activities and talk with them.

Making Sketches

Programming made using Arduino is called follows. These depictions are written in the substance boss. Depictions are saved with the record progress .ino. It has featured for cutting/staying and for looking/dislodging content. The message a region gives input while saving and passing on what's more shows abuses.

NB: Versions of the IDE before 1.0 saved draws with the expansion pde It is possible to open these records with understanding 1.0, you will be begun to save the sketch with the .ino progression on save.

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The Arduino condition uses the opportunity of a sketchbook: a standard spot to store your undertakings (or depicts). The depictions in your sketchbook can be opened from the File Sketchbook menu or the Open catch on the toolbar.

'"Beginning with interpretation 1.0, records are saved with a .ino report progress. old blends use the .pde improvement and regardless of open .pde named reports in structure 1.0 and later, the thing will therefore rename the progress to .ino.

Tabs, Multiple Files, and Compilation

Connects with you to figure out draws with more than one record (all of which appear in its own astounding tab). These can be typical Arduino code records (no new unexpected new development), C reports (.c speeding up), C++ records (.cpp), or header records (.h).

APPLICATIONS,

Far away contraption control, robotized control of modern mechanical assemblies, Surveillance.

VI. CONCLUSION

It is obvious that a variety of methods are used to monitor the health of the people in order to protect them at the appropriate moment, and it is also obvious that a variety of communication methods are employed in order to convey the data to them. We have a number of distinct methods for the soldier health monitoring system developed by diverse academics. The problem that is occurring in the army field is described in this project, and the soldiers are safeguarded by employing sensors, buzzers, and technology based on the internet of things. We will be able to simply monitor the health state of the soldier and automatically modify the temperature of their suit if we implement this project.

Future Scope

To be of assistance to the soldiers in the future, it is possible that a portable handheld sensor device with more sensing possibilities and GPS tracking will be developed.

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