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AUTOMATIC HEALTH MONITORINGSYSTEM

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ABSTRACT:

In today's scenario, healthcare problems are increasing at a very high pace, like coronary heart diseases, obesity, and lung failure, causing a death rate of 7.2 million people per year. Hence, it is theneed of the hour to overcome all such problems.

Our health care providers have developed an intelligent and low- cost health monitoring system to provide a more comfortable life for people suffering from such chronic diseases using advanced technologies like wireless communications, embedded computations, and wearable and portable remote health monitoring systems. As a result, the need for repetitive doctor visitsis decreased as the information reaches us from everywhere. Implementation of wireless communication technologies in monitoring systems is now so much easier because of their patient-friendly manner.

I. INTRODUCTION:

Health care covering systems is an arising technology that permits continuous ambulatory monitoring of mortal vital signs during quotidian life(during work, at home, during sport Exertion, etc.) or during a clinical terrain, the advantage of minimizing discomfort and interference with normal mortal exertion. Health impulses are a part of particular health systems, an idea introduced in the late In the 1990s, to place the center of the healthcare delivery process the individual within every individual citizen, managing their health, and interacting with care providers and generalities that are generally mentioned as " patient commission. The end-use of new technology capabilities. Areto boost the people's interest in their health status, and perfecting the standard of care and making.

These biases produce asynergy between multiple science disciplines like biomedical technologies, micro and nanotechnologies, accouterments engineering, electronic engineering knowledge, and information and communication technologies. According to Statista, the wearable bias request is presently having a worldwide Profit of around$ 26 billion and is predicted to succeed at nearly$ 34 billion in 2019. Regarding healthcare and medical surroundings, it's anticipated scale back the energy consumption to stretch the network Continuance, speed up and extend the communication content toextend the liberty for enhancing patient quality of life. We've developed this fashion in multi-case architecture for Sanitarium healthcare and compared it with the opposite being networks supported multi-hop relay knot in terms of content, energy consumption, and speed.

The rest of this paper is as follows. Section II is related to work on the projected health monitoring system. In Section III, the proposed structure is explained, while Section IV describes the planning of the proposed structure. Results are talked over in section V. Ultimately, the conclusion is given in section VI.

II. EXISTED WORK:

Body Sensor network systems can help By furnishing healthcare services like medical monitoring and memory enhancement. Medical data access and communication with the healthcare provider in extremities. Through SMS or GPRS. uninterrupted health wearable or

vesture-bedded sensors transducers and implantable body sensor networks. This will increase the discovery of emergency conditions in

Cases who are in the pitfall of not only the case but also Their families will enjoy the benefit from this. Also, these systems give useful styles for monitoring the physiological signals of Remote Accession without the necessity to interrupt the Case's normal life, consequently perfecting their quality of life. nowadays, heart conditions are surpassed by over to Situations, which affect the deaths of humans. being. Monitoring the case constantly is delicate. or croakers, who are also unfit to cover the situation the case for some working hours. Many

critical situation conditions are analogous to the case being located far down from hospitals or also in the case of old cases where I suffer from heart complaints and other physical affections. conditions. This module consists of a pulsation rate sensor. and a temperature sensor that measures the pulsation. The body temperature and heart rate send SMS through The GSM module to the medical advisory for the primary precautions so that the case can avoid dangerous situations before they passed in the sanitarium. The data is stored in the pall for the croaker's preference.

III.   PROPOSED WORK:

3.1 BLOCK DIAGRAM:
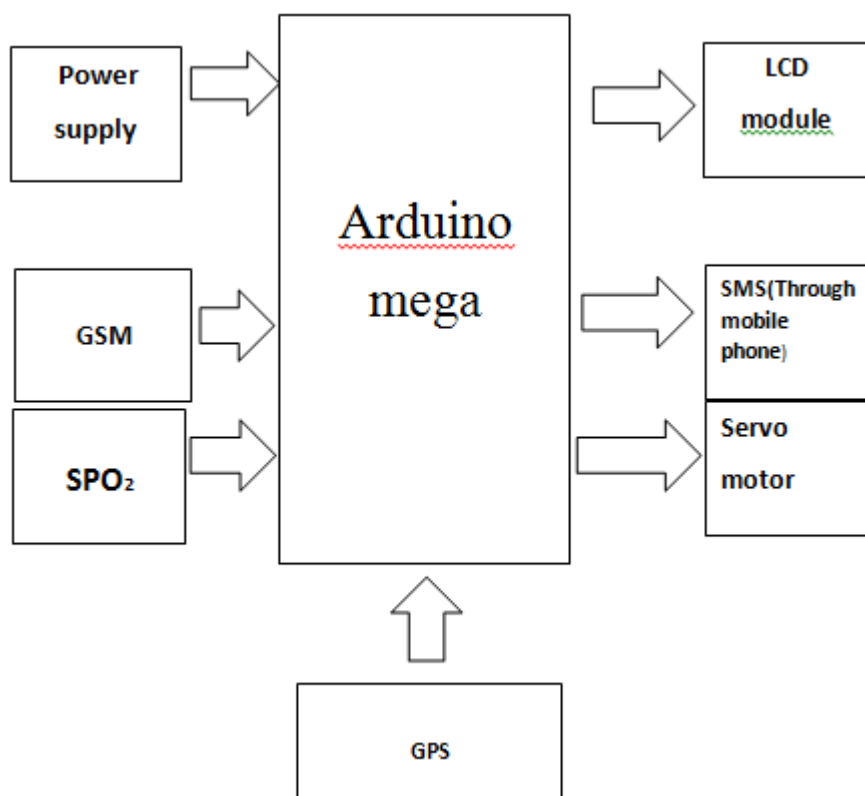
3.2 POWER SUPPLY:

The power supply is the main primary requirement for the project work. The required DC power supply for the base unit as well as for the recharging unit is derived from the mainline. For this purpose, a center- tapped secondary of the 12V-012V transformer is used. From this transformer, we get a 5V power supply. This +5V output is regulated

and it is designed using a 7805 positive voltage regulator. This is a 3- pin voltage regulator that can deliver current up to 800 milliamps.

Rectification is the process of rendering an alternating current or voltage into a unidirectional one. The component used for rectification is called a "rectifier." A rectifier permits current to flow only during the positive half-cycles of the applied AC voltage. Thus, pulsating DC is obtained to obtain smooth DC power, and additional filter circuits are required.

3.3 ARDUINO MEGA:

Arduino is an open-source electronics platform predicated on easy-to- use tackle and software. Arduino boards are suitable to read inputs- light on a detector, a fritter on a button, or a Twitter communication- and turn it into produce- starting a motor, turning on an LED, publishing commodity online. You can tell your board what to do by shipping a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language(grounded on Wiring),and the Arduino Software(IDE), grounded on Processing.

3.4 HEART RATE SENSOR:

3 Heart Rate Monitors The Heart Rate Sensor is a well- designed draw- and- play heart rate detector for Arduino. It can be used by anyone wanting to fluently incorporate life. heart rate data into their systems. The detector clips slip onto a fingertip or earlobe and entrapments right into Arduino. It also includes an open-source Covering app that graphs your palpitation in real-time. The Heart Rate detector includes a 24- inch Color- Enciphered String, with(joker) title connectors. One can discover It's easy to bed the detector into your design, and connect to an Arduino. No soldering is needed. The clip can be hot fused to the reverse of the detector. and are fluently worn on the earlobe. These are'hooks'. side and are also impeccably sized for the detector. We'll You'll find the Velcro blotches veritably useful if you want to make a fabric swatch to wrap around a fingertip. Use the Velcro swatch to wrap the Palpitation Detector around your cutlet. Transparent Stickers are used on the front To cover the palpitation detector from unctuous fritters and sweaty earlobes. The palpitation detector has 3 holes. which makes sewing simple. it into nearly anything. The front of the detector is with the Heart totem. This is the side that makes contact with the skin. On the front, you see a small round hole. which is where the LED shines through and there is There's also a little square just under the LED. The square is a light detector, exactly like the one used in cell phones, tablets, and laptops, to acclimate the screen. brilliance in different light conditions. The LED shines light into the fingertip, earlobe, or other The detector determines the quantum of the light that bounces back. On the other hand, The detector is where the rest of the region is mounted.
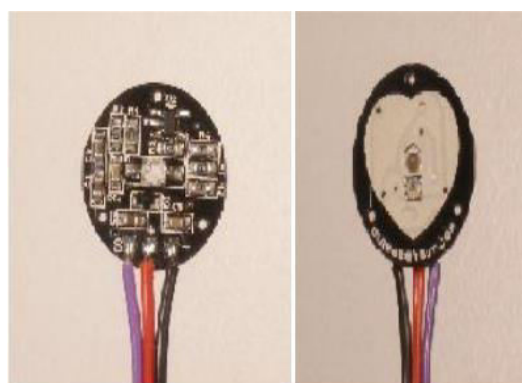
3.5 TEMPERATURE DETECTOR:

Melexis MLX90614ESF- BAA is an infrared thermometer designed for non-contact temperature seeing. An internal 17- bit ADC and an important DSP contribute to the MLX90614's high delicacy and resolution. It has a large number of Operations including body temperature dimension and movement discovery.
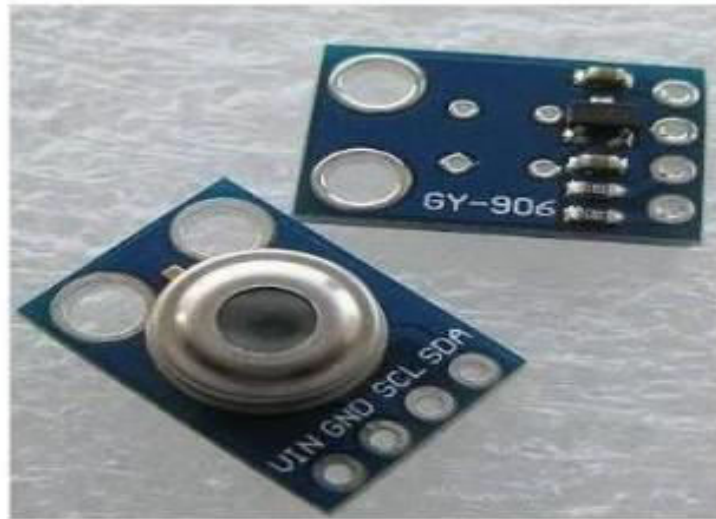
IV. WORKING PRINCIPLE

4.1 Temperature Sensor working:

The function of the temperature sensor is to measure body temperature.MLX90614 thermometer is the temperature sensor used to measure the temperature. The MLX90614 is erected from 2 chips developed and manufactured by Melexis. The MLX90614 is factory calibrated in wide temperature ranges- 40 to 125 °C for the ambient temperature and- 70 to382.2 °C for the object temperature. The 10- bit PWM is a standard used to transmit continuously the measured object temperature. The various temperature ranges are given in the irregularcolumn below.

oC	F	CONDITION
30.56	90.40	NORMAL
35.08	95.14	NORMAL

36.22	97.19	NORMAL
37.64	99.75	ABNORMAL
40.54	104.97	ABNORMAL

4.2 Heart Rate Sensor Working

The Heart Rate Sensor is a well-designed detector for Arduino. It can be used by anyone who wants to fluently incorporate live heart-rate data into their systems. The detector clips onto a fingertip or earlobe and entrapments right into the Arduino.

The frontal side makes contact with the skin. On the front, you see a small round hole, where the LED shines through from the reverse, and there's also a little square just under the LED. The forecourt is a light detector, like the one used in cellphones, tablets, and laptops, to acclimate the screen brilliance in different light conditions. The LED shines light into the fingertip, earlobe, or capillary napkins, and the detector reads the quantum of light that bounces back. The other side of the detector is where the rest of the corridor is mounted. The Palpitation Detector can be connected to an Arduino, or plugged into a breadboard.

4.3 CK101 BLOOD PRESSURE SENSOR working:

Figure 4.1 Blood Pressure sensor

CK101 is a personal handheld blood pressure monitor powered by 2xAAA batteries. CK101 has a built-in LCD and an RT inflatable wristband. The user can wear CK101 on his wrist, and then press the power switch to start the blood pressure measurement.

V. RESULT:

> PERSON REQUIRES HEALTH ASSISTENSE : TEMPERATURE: 101
> SPo2: 91
> HEART RATE: 92
> http://maps.google.com/?q=16.511457,80.62457

So we obtain the person's health assistance temperature, spo2, heart rate, and the current location of the person by using the automatic health monitoring system by doing these projects this is the final output we get with good output, and when the temperature of the person increases The servo motor release the oxygen to the person it can helpto save his life.

VI. CONCLUSION

Modern technologies have developed that promote a comfortable and better life that is disease-free. The project provides a low-cost solution to enhance the remote monitoring capability of an existing health care system by using an Arduino and a WiFi module. It uses sensors to measure pulse rate, blood pressure, and body temperature. The sensorsare operated and vital information is transmitted to the microcontroller.By using this prototype circuit, the hardware circuit, messages can be transmitted in case the value of any parameter falls below a

predetermined value to the corresponding medical expert so that necessary medications can be given to the patient.

The data is collected from the sensors and sent to the server using IoT.An ESP8266 module is used, which acts as an IoT. The existing modeluses the Zigbee protocol, which is applicable only within a respected range. Advancement in the existing system has been made using IoT. The MQTT dashboard app is used to which the data is pushed, and thisacts as a server.

The proposed system can be used at home and in hospitals. This systemcan be further used to monitor more than one patient's health information.

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