



SYSTEMATIC APPROACH FOR HEALTH MONITORING SYSTEM USING IOT

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Abstract

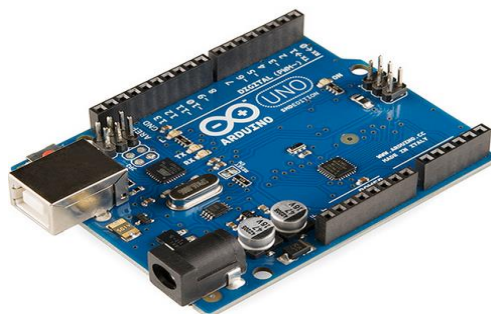
Wireless communication is among technologies biggest donation to humanity. It's enhanced to convey the information snappily to the consumers. In the ultramodern health care terrain, the operation of internet of effects(IoT) with global system for mobile communication(GSM) bring convenience of croakers and patients .The body detector networks is one of the core technologies of IoT developments in health care system. IoT and GSM grounded monitoring system is proposed for nonstop monitoring of cases health condition using detectors. This focus on the dimension and monitoring of colourful natural parameters using web garçon and android operation. Doctor can cover the patient condition on his/ her smart phone.

I.INTRODUCTION

The Internet of Things, or IoT, is a network of physical devices, vehicles, appliances, and other items that have sensors, software, and connectivity built into them. This makes it possible for them to connect to each other and the internet to exchange data. This innovation permits gadgets to convey and cooperate with one another, and it can possibly change the manner in which we live and work. Smart homes, healthcare monitoring, industrial automation, and transportation are just a few of the many uses for Internet of Things (IoT) devices. They are capable of gathering data in real time, analysing it, and making decisions based on that data. This has the potential to improve decision-making, productivity, and efficiency. However, concerns regarding security and privacy are also raised by the widespread use of IoT technology. There is a possibility that sensitive data could be hacked as a result of the increasing number of devices that are connected to the internet.

As a result, it is necessary for IoT devices to be built with security in mind and to have the appropriate safeguards in place to safeguard user privacy. The Internet of Things (IoT) works by connecting physical objects to the internet and allowing them to communicate with each other and with other internet-enabled devices. This is done through the use of sensors, processors, and communication hardware, which are embedded in the objects themselves. The basic IoT architecture involves four main components: the sensors or devices, the connectivity, the data processing, and the user interface or application. Here's a brief overview of each component: Sensors or Devices: These are physical objects that are equipped with sensors, processors, and communication hardware. These devices can collect data such as temperature, humidity, motion, and light levels, and send this data to other devices or to the cloud. Data Processing: Once the data is collected by the IoT devices, it needs to be processed in order to make it meaningful. This involves analyzing the data, applying algorithms, and making decisions.

User Interface/Application: The final component of IoT is the user interface or application, which allows users to interact with the IoT devices and access the data they generate. This can be a mobile app, a web application, or a dashboard that displays real-time data.



II. LITERATURE SURVEY

Connor, Stephen B., Timothy J. Quill, and James R. Jacobs. "Accuracy of drug infusion pumps under computer control." *Biomedical Engineering, IEEE Transactions on* 39.9 (1992): 980-982.

Goepel, Ernst. "The ink drop sensor—a means of making ink-jet printers more reliable." was published in 1994 in the *Journal of Imaging Science and Technology*.

Sankara Narayanan, Sriram, et al. "A model-based approach to synthesizing insulin infusion pump usage parameters for diabetic patients." *Communication, Control, and Computing (Allerton), 2012 50th Annual Allerton Conference on. IEEE, 2012.*

Testing of Droplet-Based Microelectrofluidic Systems Fei Su, Sule Ozev, and Krishnendu Chakrabarty Das, Alok K., Anup K. Mandal, and Sadhan Banerjee. "Measurement of liquid droplet parameters using optical fiber." *Light wave Technology*.

III. PROPOSED SOLUTION

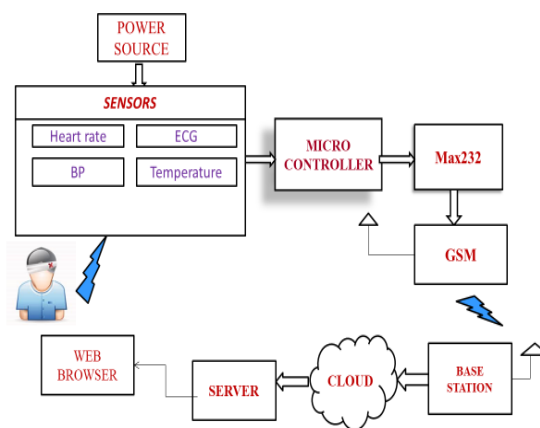


Fig 1. Technical Architecture

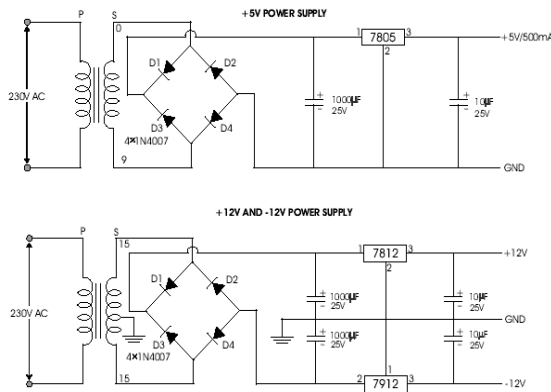
The Internet of Things (IoT) replaces GSM technology in the proposed system, which logs patient health data in the cloud. Whenever the patient need crisis care, the proposed framework alarms the predefined clients and furthermore it finds the close by crisis contacts like rescue vehicle. The internet is used by the IoT technology to continuously transfer the patient's medical data. In order to keep an eye on the body's functions and the environment around it, intelligent, low-power sensor nodes can be embedded in, on, or around the human body using the Body Sensor Network (BSN). It has attracted a number of researchers from academia and industry in recent years and has the potential to revolutionize healthcare technology. For the most part, BSN comprises of in-body and on-body sensor organizations. The communication between invasive or implanted devices and the base station is made possible by an in-body sensor network. On the other hand, non-invasive or wearable devices and a coordinator can communicate through an on-body sensor network. Now, our BSN-Care BSN architecture includes sensors that can be worn or injected. Bio-sensors like the electrocardiogram (ECG), blood pressure (BP), and others are integrated into each sensor node. The physiological parameters that these sensors collect are sent to a coordinator known as a Local Processing Unit (LPU), which can be a mobile device like a PDA or smart phone, among other options. Utilizing mobile networks like 3G, CDMA, and GPRS, the LPU serves as a router between the BSN nodes and the central server known as the BSN-Care server. In addition, the LPU immediately notifies the wearer of the biosensors if it detects any abnormalities.

IC VOLTAGE REGULATORS

Voltage regulators are a subset of ICs that are utilized frequently. The control device, overload protection, reference source, comparator amplifier, and circuitry for regulator IC units are all housed in a single integrated circuit. An adjustable voltage, a fixed negative voltage, or a fixed positive voltage can all be controlled by IC units. Load currents of hundreds of milli amperes to tens of tens of amperes—corresponding to power ratings of milli watts to tens of watts—can be selected for operation by the regulators.

MICROCONTROLLER

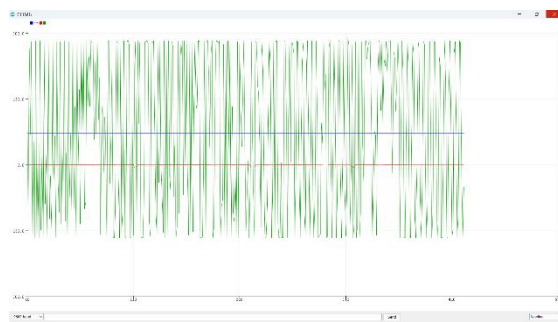
Microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical world are designed and manufactured by ARDUINO Arduino, a company, project, and user community that specializes in computer hardware and software. The task's items are disseminated as open-source equipment and programming, which are authorized under the GNU Lesser Overall population Permit (LGPL) or the GNU Overall population Permit (GPL),[1] allowing the production of Arduino sheets and programming dispersion by anybody. Pre-assembled Arduino boards can be purchased commercially or as DIY kits.



Result:

ECG Signal

Pulse signal passes through the electrode and reaches the Arduino Atmega Micro Controller and it generates the wave

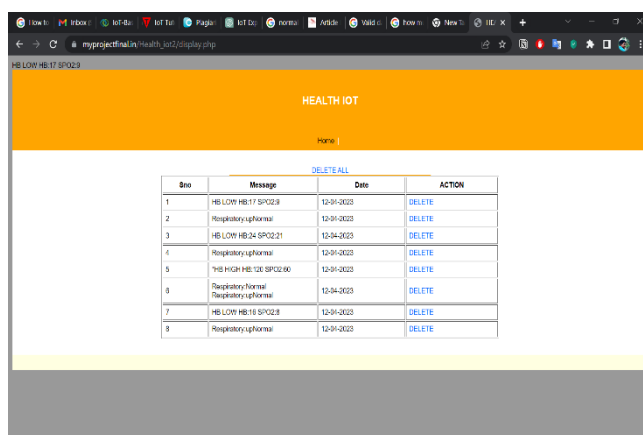


Temperature :

By using Temperature Sensor ,Temperature can be sensed and the output will be shown in the Website using IOT module .

Respiratory :

By using Respiratory Sensor, the level of oxygen inhale and exhale will be monitored and the output will display in the LCD display and in the web site



CONCLUSION

We found that even though most of the popular BSN based research projects acknowledge the issue of the security, but they fail to embed strong security services that could be preserve patient privacy. Finally, we proposed a secure IoT based healthcare system using BSN, called BSN-Care, which can efficiently accomplish various security requirements of the BSN based healthcare system. All the sensor which is connected in the body is used to collect the ubnormal symptoms of the human body and then it is collected back to the doctors through the IOT technology.

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