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IOT-Based Wearable Health Care System

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ABSTRACT: *A wearable sensor network system for Internet of Things (IoT)-connected safety and health applications is presented in this research. Workers' health and safety are crucial for industrial workplaces, thus an IoT network system that can track both physiological and environmental data can significantly increase workplace safety. The suggested network architecture uses a variety of wearable sensors to track physiological and environmental variables. The wearable sensors on various people can communicate with one another and send data to a gateway via a wearable network, which creates a heterogeneous IoT platform with a secured medical signal detecting network based on spread spectrum. When dangerous situations are identified, the sensor node will offer the users a reliable notification and warning system. To provide data processing, a local web server, and a cloud connection, a smart IoT gateway is created. The gateway will transmit the data it gets from wearable sensors to an IoT cloud for additional data storage, processing, and visualisation.*
KEYWARDS: *Wearable Gateway With IP, Interface Circuit, Battery, Alarm.*

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I. INTRODUCTION:

The use of wireless technology for various health monitoring systems has been made possible by technological advancements in the fields of illness prevention and patient health maintenance. The soundness of the human cardiovascular system is directly correlated with heart rate, which is an extremely important health measure. It represents a variety of physiological states, including biological workload, stress at work, difficulty focusing on activities, sleepiness, and an active autonomic nervous system. Both the ECG waveform and the pulse, which is the rhythmic expansion and contraction of an artery as blood is pushed through it by the heart's regular contractions, can be used to measure it. . According to a recent report, cardiovascular disease is among the

leading causes of death in many nations. In addition, cardiovascular disease disables several million people. This is a result of the delay in giving afflicted patients their medication. Therefore, there is a prospect for a decrease in fatality related with cardiac disease as well as enhanced care following hospitalisation if resources are allocated for early detection and treatment of heart disease. Therefore, new approaches are needed to shorten the period before treatment. One potential remedy is patient monitoring. The demand for has also increased as a result of the trend towards an independent living. Heart disease issues frequently cause harm to the elderly. They frequently live alone since nobody wants to keep an eye on them around-the-clock. In this paper, the actual deployment of IoT system using Wearable technology with the combination of Wi-Fi technology(1). In this paper, we report signal strength measurements for the in-building and inter-building Wearable links and provide insights on factors that affect signal quality such as the spreading factor and antenna orientation(2). Finally, an outdoor long-range performance test is performed as a proof of concept(3). This paper presents a review of the challenges and the obstacles of IoT concept with emphasis on the Wearable technology(4).In this paper, we evaluate the BER performance of Wearable modulation when affected by different types of ISM interference(5).In this paper, the capacity of Wearable networks is evaluated with joint noise and interference considerations(6).

II.PROPOSEDSYSTEM:

Battery Power:

Given the system's wearable nature, it is key to pick a good battery size and type that is mobile tough, and rechargeable. This ensure as the device runs for what is needed of time before needs charge. A weak chip and/or microprocessor design must be used to cut energy use.sensor and Interface.

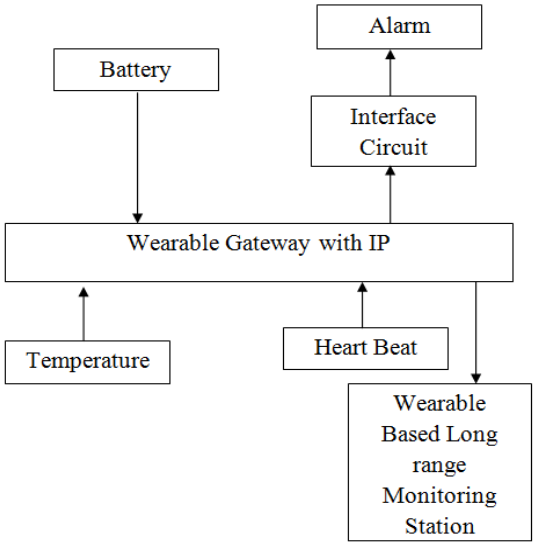
Circuit:

To alert users and medical experts to must events, such as an unusual high or low heart rate, the system should have a fear or news line. To aid in lower power consumption and offering a safe interface to the sensors, an easy interface capacitor circuit may also be got.

Wearable Gateway with IP:
Before offer data to the cloud, the gateway takes and runs data from wearable sensors. A small, portable device with wireless connectivity, such as Wi-Fi, Bluetooth, or 4G/LTE, is needed to keep the gateway wearable. Doing this, the gateway are able to use the internet to send data to the cloud server for old and study.

Temperature and Heart Rate Monitoring:
The wearable should have sensors to track temperature and heart rate. More complex sensors, such as Body Sensor Networks (BSN) or Conductive Fabrics, can be used. Such data will be always tracked and sent by the sensors to the wearable gateway.

Block Diagram of the Proposed System



Long Range Monitoring Station:
To avoid any communication gaps, the long range monitoring station should be set so it will have an open clear view of the wearable gateway. It will serve as the receiver, using in real-time data from the wearable's sensors and giving it to the cloud for more storage and analysis.

III.CONCLUSION

One of the major organs in the human body is the heart. Normal cardiac function is necessary for a sound and healthy person. Cardiovascular disease is killing more people every day. Therefore, maintaining a healthy body requires monitoring of the heart and body temperature. To enhance patient care and people's quality of life, biomedical engineering (BME) blends engineering design and problem-solving skills with medical and biological sciences. By taking time on patients' heart issues and telling their data to the right people by IoT devices, this project gives a full solution. The patient gets the primary medication based on current state at health. Thus, giving the system fixed can save a life. It's a setup can be used in hospitals to track the patient's data from a single place, giving for the parallel surveillance of many patients.Here, the setup of the project is proposed in Lara Module & Google Assistant.

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