

IOT ENABLED HEALTHCARE WEARABLES FOR REAL TIME MONITORING BODY VITAL CONDITIONS

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The internet of things (IoT) has been widely identified as the best solution to alleviate the pressures on healthcare systems which improve the access and quality of care and essentially reduce the cost of care. The development of IoT makes the remote health monitoring easier and usage of health wearable become more popular with its accuracy and comfortability. With the use of IOT in the field of healthcare systems, reliability of data and data storage can be vastly improved compared to current methods. Also, the powering of medical devices is a problem that's affecting the development of the IOT based medical devices and implantable devices such as pacemakers. This paper proposes a design to real time monitor healthcare wearables such as heart rate meter, body temperature meter and blood oxygen level meter with the use of wireless power technology. Proposed product is implemented with two health wearables and a main communication hub. The two wearables are contactless temperature sensor and heart rate measuring sensor. The health wearables are powered by rechargeable batteries. The patient must wear the equipment on his triceps. The measuring instrument relates to the NodeMCU microcontroller (built with microprocessor ESP 8266) which has embedded Wi-Fi facility. This structure makes easier to transfer the data to the cloud data base. "Google Drive" is used as the free data cloud. Medical officer can access to the data in the cloud. Two mobile applications were created to get access to the cloud data base and control the device using open source mobile applications such as "Appsheet" and "Blynk". Also, a website with logging facilities was created to get access to the patients' data. Main communication hub is implemented with a Wi-Fi router, Raspberry Pi 3 module and an HMI (Human Machine Interface). HMI can display the past measured data as a graph.

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