Design of Healthcare System Using IoT Enabled Application

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Abstract

Increase in the usage of wearable sensor nodes and advanced communication helps to progress diagnostic methodology in improving the quality of human life. Virtual monitoring of patients through wearable sensors nodes can avail the services of experts to the region with scarcity of medical facility hence medical services in those areas can be enhanced. The medical facility available to rural India is considerably lacking certain amenities. The Conventional practice of medicine and healthcare is mostly heuristic driven Knowledge of regular monitoring of vital health parameter helps the patients to take precautionary measure at the early stage. Medical App is necessary to avail quality services of IoT. The proposed system has three major basic blocks. The first being body sensor sensing the data from the body, second is sending data to cloud and the last part is to provide the data to an expert using designed APIs. The placement of sensor nodes on human body and selection of communication protocol plays an important role in designing the system. Sensors placed on the body are noninvasive sensors they collect the vital parameters. Sensors used in this research are body temperature sensor, blood glucose sensor, blood pressure and Electrocardiogram sensor (ECG) Sensor node records the data and transmits it to the cloud using coordinator node. The communication between body coordinator node and the cloud is established using ESP-8266 Wi-Fi Module. Data received is stored in Thing speak Cloud. The user friendly application programming interfaces (APIs) helps to provide early assistance of the doctor. The APP designed at the destination point can view the parameter of the patient and communicate message to the patient or user about the status of the health parameter, prescribe the medicine, sends an alert message during critical condition and provides with assistance. Research finds to develop low cost user friendly health monitoring application to receive the information from the patients and recommend appropriate service at the early stage of diagnosis.