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Hybrid Watch Using Internet of Things

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ABSTRACT

Internet-of-Things (IoT) is the expansion of internet services. Uses of new technologies in IoT environment are increasing rapidly. The approach starts from the insight of smart-watches for taking care of personal health and smart homes are those where household devices/home appliances could monitor and control remotely. When these household devices in smart homes connect with the internet using proper network architecture and standard protocols, the whole system is called as Smart Home in IoT environment or IoT based Smart Homes. If the web affiliation is down, the embedded system board manages and operates the appliances domestically. In this paper, the integration of smart watch and smart home is done with help of IoT, its called hybrid watch.

Keywords: Hybrid Watch; Internet of Things (IoT); Smart Home; Healthcare

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Abstract

Internet-of-Things (IoT) is the expansion of internet services. Uses of new technologies in IoT environment are increasing rapidly. The approach starts from the insight of smart-watches for taking care of personal health and smart homes are those where household devices/home appliances could monitor and control remotely. When these household devices in smart homes connect with the internet using proper network architecture and standard protocols, the whole system is called as Smart Home in IoT environment or IoT based Smart Homes. If the web affiliation is down, the embedded system board manages and operates the appliances domestically. In this paper, the integration of smart watch and smart home is done with help of IoT, its called hybrid watch.

Keywords: Hybrid Watch, Internet of Things (IoT), Smart Home, Healthcare

1. Introduction

Today, technology has become an integrated part of people's lives. It influences in many aspects of daily life and has allowed better social interaction, ease of transportation, the ability to indulge in entertainment and in media and it has helped in the development in medical field and automation. The Internet might even be utilized in home automation that offers several decisions from economical use of energy to additional console, protection and safety [1]. Even over great distances the user monitors and manages their various home appliances and turn on/off the T.V without any human intervention. Despite these advantages, home automation has however received extensive approval and an attention owing to its high significance and complexness. Hybrid watches are about to extend the scope of support for people, who want to stay in their familiar home in a safe and self-determined way, as long as this is justified by medical reasons [2]. In addition to usual diseases, the health of people is threatened in multiple ways:

1. By tumbles
2. Getting lost during an absence from home

3. Dehydration due to insufficient liquid ingestion

In these situations, a suitable Hybrid-watch developed to provide effective assistance in the home and health care.

2. Literature Review

This paper summarized enabling technologies developed over the past decade and put a great deal of emphasis on surveying studies focused on the deployment of wearable sensors and systems in the context of a concrete clinical applications, with main focus on rehabilitation [1]. In this paper optimizing the care model and by improving the access to significant patient health information [2]. The implementation of the smart home application and of the physical prototype based on the Link Smart Internet of Things framework has satisfied the development requirements and eased the development process as a whole [4]. IoT based smart home controlling using GSM and web interface. Prototype operates for data gathering and transmission using GSM-SMS [5]. Prototype is capable of monitoring and controlling the devices in the deployed environment [6].

3. Research Methods

The research method covers elaboration of the conceptual framework, research design, utilized method, analytic approaches and validation phases. In present scenario, hybrid watches have almost all the features which are very much important in a daily routine basis. We have so many features similar to smart phones such as call forwarding, messaging, browsing etc. In addition we have introduced a new innovation which compromises health condition of a person and automatic control of home appliances. Earlier these were performed by the aid of certain features available in smart phones which could be transmitted to the watch for further performance. When it comes to healthcare each and every individual is very conscious. In the present prototype that we have designed the PIC Microcontroller collects information of a person's heartbeat and temperature and transmits it to gateway through the GSM. After this process the information is carried to the cloud through message queue telemetry transfer protocol (MQTT) and this is then further moved to the doctor's clinic. So, this feature invariably monitors person's health condition disregarding all other factors. The next innovation is that controlling home appliances in the same hybrid watch using IoT. The measurement of the intensity of the light using LDR sensor and by the temperature, the collected information is sent to the GSM which is further transmitted to the PIC micro controller. This provides a digital feedback in the hybrid watch and the relay control every appliance in the home.

4. Discussion and Conclusion

The ultimate outcome of the study is the promising potential of a hybrid watch is to monitor patients health and automatic control of home appliances. The wireless communication protocol has security problems that could be solved and additional features like an alert notification system, GPS functionality, and a local

database with limited access could be implemented as part of a future certified/standard hybrid watch.

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