Health Monitoring Application Based on Wireless Body Area Networks Using IOT

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Abstract- *An increase in world population along with a significant aging portion is forcing rapid rises in healthcare costs. The healthcare system is going through a transformation in which continuous monitoring of inhabitants is possible even without hospitalization. The advancement of sensing technologies, embedded systems, wireless communication technologies, nano technologies, and miniaturization makes it possible to develop smart systems to monitor activities of human beings continuously. Wearable sensors detect abnormal and/or unforeseen situations by monitoring physiological parameters along with other symptoms. Therefore, necessary help can be provided in times of dire need. This paper reviews the latest reported systems on activity monitoring of humans based on wearable sensors and issues to be addressed to tackle the challenges.*

I. INTRODUCTION

As of late, wearable gadgets got a great deal of interests and wide acknowledgment because of their little sizes, sensible calculation control, and down to earth control abilities. These wearable gadgets stacked with sensors (e.g. accelerometer, gyrator) give a decent contender to screen clients' every day conduct (e.g. strolling, running, and smoking). These days wearable gadgets are utilized in a few spaces (e.g. movement identification), were wellbeing observing is one of the conspicuous. Late progression of wearable innovation has brought about use of wearable and non-meddling frameworks for wellbeing and movement checking. Additionally, wearable innovation has enabled the client to measure, and takes control of their way of life. Over the long haul, such awareness among individuals will assist the general public with being solid and gainful. Keeping up such solid life will likewise lessen the expense of social insurance by enabling the general population to invest less energy in the doctor's facility or make fewer visits to the specialist. Wearable innovation faces three primary difficulties: correspondence limit, calculation power, and restricted vitality of the wearable gadget. In this paper, we propose a system to constantly screen client action utilizing wearable gadgets. The system gives a component to wearable gadget to diminish the overhead of information correspondence. Along these lines, it enables wearable gadget to deal with its capacity utilization in more proficient way. Moreover, the proposed structure lessens the run of the mill information handling overhead required by the checking applications. In addition, it gives greater adaptability to the applications to design their observing prerequisites. In the proposed system we split the action observing errand between both the wearable gadget and a comparing host, for example, the advanced cell. The wearable gadget is in charge of gathering, cleaning, and division of the crude information. Then again, the observing application on the host gadget will process these information fragments as indicated by its action recognition intrigue. Additionally, the system gives the application full control of the information gathering stage (e.g. sensor information determination, and sensor recurrence). We imagine this division way to deal with decrease the correspondence overhead in exchange of light calculation on the wearable gadget. The proposed work receives a design that can be effortlessly utilized by different stages (e.g. iOS, Android). As a proof of an idea, we preset two checking exercises: hand washing, and drinking.

II. EXISTING SYSTEM

Manually operating:

In the general, the people's health parameters are going monitored by manually then only we are going to take the necessary precautions based on those parameters. In all existing system there is need of man power in order to monitor a person's health conditions and give the necessary treatments for that by initiating or calling doctors. This process takes more time and also not easy for the people who are going regularly for their office in order to work.

And also they don't know about their kid's or parent's health conditions. If the kids or elderly peoples itself observe their health parameters changing, they don't have capability in order to inform to their parents or sons.

In Existing framework the health parameters are going to be measured and these parameters are going to send

the nearest hospitality or doctors in order to know the patient's health parameters. But here we should required man power to monitor the health parameters continuously and send that information to the nearer people and hospitality.

The Disadvantages of the Existing System is as follows:

1. Disconnected environments for patient disease management.
2. Computational overhead from large volumes of health information data.
3. Lack of support for user-centric customizable healthcare systems

III. PROPOSED SYSTEM

Human activity monitoring systems are picking up their significance as the quickly developing worldwide elderly population increases demands for care taking. These frameworks utilize remote advancements to transmit fundamental signs for therapeutic assessment. The aim of the project is to provide a better health care to people in more economic and friendly manner. The need of health monitoring system is increased now days because health care cost is increasing exponentially in last few decades.

In the proposed human health monitoring system using android smart phone includes the aspects of acquisition of medical parameters like Body temperature, Pulse rate and quantity of alcohol consumption. In this system we are using temperature sensor, Heart beat sensor and alcohol sensor for sensing the temperature, heart rate and alcohol consumption quantity of a particular person. Processing of a collected data using Arduino micro controller and processed data is then displayed on doctor's data base. Also the data can be displayed on personal computer.

The system is utilizing a low cost component to transmit data like to physician for monitoring; diagnosis and patients care at significantly low cost, regardless of patient's location. This system makes the human activity monitoring in a easy manner and also makes it flexible means transferring of the patient health parameters in a critical situations..

IV. WORKING OF THE PROJECT

The main aim of this project is to monitor the human activity for their health caring with wearable sensors. In this project we are using temperature sensor, heart beat sensor, alcohol sensor for monitoring their body temperature, heart rate and consumption of alcohol quantity. Then after based on threshold values the necessary action will be taken by the controller according to the coding in controller. In this project we are using Arduino microcontroller for controlling all the activities of human being. First the sensors such as temperature sensor DHT11 and the heart beat sensor sense the temperature and heart beat rate of patient. These sensing values are in analog form and these will be converted into analog to digital converter which is inbuilt in Arduino controller. Then these readings are compared with the critical values which are already mentioned in programming. Then based those criteria the controller sends the data to nearer hospitals, their relatives through the GSM module and Bluetooth. The alcohol sensor will detect if the person consuming any drink, then it sense and give that data to the controller. Then after the controller sends the SMS to their relatives or family members which mention that the person consuming alcohol more. Then the family members will alert that person regarding that reason. In this way this project will monitor the human activities and help in their health care.

Application:

Hospitals
Industries

Advantages:

Portable

SmartResults:

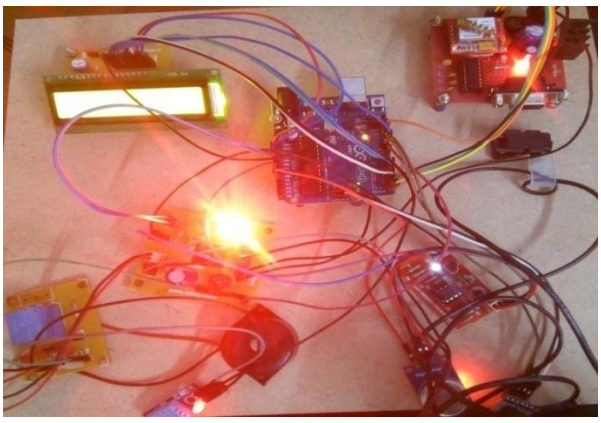

Fig1.1 : Hard ware setup of the project

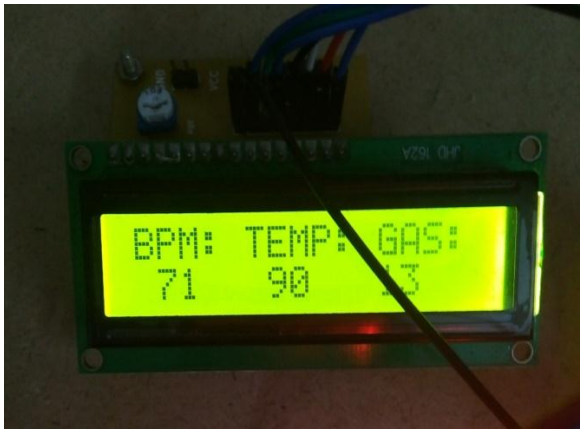

Fig1.2 : The BPM, temperature and gas values shown in LCD display.

Fig : Data is uploading in serer shown in LCD display.

Fig : Data uploaded in server.

Fig1.4 : The above figure shows BPM values updated in server

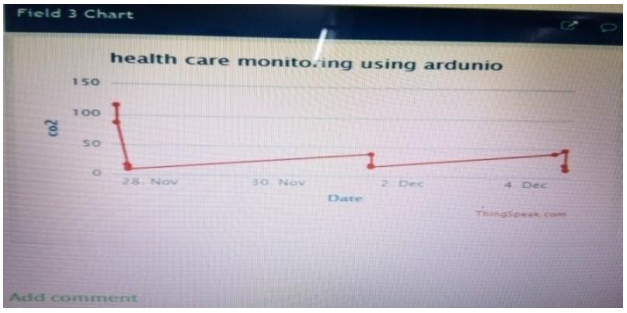

Fig1.5 : the above figure shows gas values updated in sever

Fig1.3 : temperature and heart beat values shown in figure.

The project consists of the gas sensor, heart beat sensor, temaprature sensor thes all are interfaced with arduino micro controller and LCD and GSM modules are used for monitor the system and send data to the server.Fig7.1 shows the hard ware setup of the system and fig shows the BPM , gas, tempartuere values in LCD dipslay.fig and fig represnts the data is transfering tio sever and results are shown in figure

V. CONCLUSION

This project states the state-of-the-art in human activity recognition based on wearable sensors. The main object of this project is to implement a system which can monitor the human activities with wearable sensors. Two-level taxonomy is introduced that organizes human activity systems according to their response time and learning scheme. Other systems are qualitatively compared in regards to response time, learning approach, obtrusiveness, flexibility, recognition accuracy, and other important design issues. The fundamentals of feature extraction and machine learning are also included, as they are important components of every human activity system. Finally, various ideas are proposed for future research to extend this field to more realistic and pervasive scenarios.

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