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REVIEW ON IoT BASE E-HEALTH MONITORING SYSTEM

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Abstract- Monitoring your beloved ones becomes a difficult task in the modern day life. Keeping track of the health status of the patient at home is a difficult task. Especially old age patients should be periodically monitored and their loved ones need to be informed about their health status from time to time while at work. So we propose an innovative system that automated this task with ease. Our system puts forward a smart patient health monitoring system that uses Sensors to track patient health and uses internet to inform their loved ones in case of any issues. Our system uses temperature, humidity & heartbeat rate sensing to keep track of patient health. The sensors are connected to a microcontroller to track the status which is in turn interfaced Wi-Fi connection in order to transmit alerts. If system detects any abrupt changes in patient heartbeat rate, respiration & body temperature and humidity, the system automatically alerts the user about the patient's status over IOT and also shows details of heartbeat, heart rate and temperature of patient live over the internet. Thus IOT based patient health monitoring system effectively uses internet to monitor patient health stats and save lives on time. A micro-controller board is used for analyzing the inputs from the patient and any abnormality felt by the patient causes the monitoring system to give an alarm. Also all the process parameters within an interval selectable by the user are recorded online. This is very useful for future analysis and review of patient's health condition. For more versatile medical applications, this project can be improvised, by incorporating blood pressure monitoring systems, dental sensors and annunciation systems, thereby making it useful in hospitals as a very efficient and dedicated patient care system.

Keywords - *IOT Internet of thinks, Adriano, WI-Fi, Signal Conditioning unit (SCU)*

I INTRODUCTION

A Patient E- Health Monitoring System is an extension of a hospital medical system where a patient's vital body state can be monitored remotely. Traditionally the detection systems were only found in hospitals and were characterized by huge and complex circuitry which required high power consumption. Continuous advances in the semiconductor technology industry have led to sensors and microcontrollers that are smaller in size, faster in operation, low in power consumption and affordable in cost. According to research, we found that approximately 2000 people died monthly due to the only carelessness of their health. This is because they don't have time for themselves and forget about their health management due to a heavy workload. The reason behind to make this project is the growing world of technology and people forget their health checkup which is needed to be done monthly or quarterly. As we all know that internet of things make our life easier.

So, we have decided to make an internet of things based healthcare project for people who provide them all the personal information about their health on their mobile and they can check their all historical health data. The best part of this project is that it can be used by everyone and make our health management easier than available systems. It provides a solution for measurement of body parameters like, Temperature, Moisture, and pace maker and respiration. It also detects the body condition and location of the patients. This system also generates an alert when it required that means at the time of any critical conditions and notifications about the medicines, location change, conditions etc.

II PROPOSED WORK

Introduction In this proposed work the vital parameters such as temperature, Pace maker, humidity, Respiration sensor and readings which are monitored using Arduino Uno. These sensors signals are send to Arduino Uno via amplifier circuit and signal conditioning unit (SCU), because the signals level are low (gain), so amplifier circuit is used to gain up the signals and transmit the signals to the Arduino Uno. Here patients body temperature , Pace maker heart rate is measured using respective sensors and it can be monitored in the screen of computer using Arduino Uno connected to a cloud database system as well as monitored anywhere in the world using internet source. The proposed method of patient monitoring system monitors patient's health parameters using Arduino Uno. After connecting internet to the Arduino uno, it is connected to cloud database system which acts as a server. Then the server automatically sends data to the receiver system. Hence, it enables continuous monitoring of the patient's health parameters by the doctor. Any abrupt increase

or decrease in these parameter values can be detected at the earliest and hence necessary medications can be implemented by the doctor immediately.

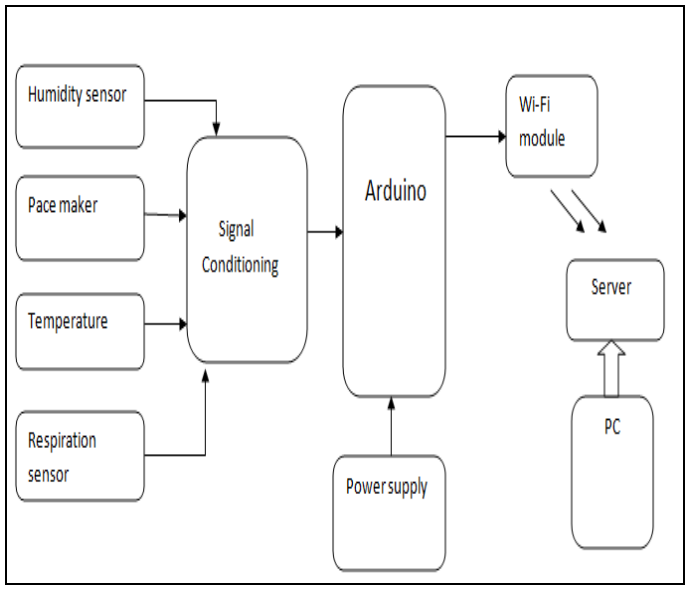
III SYSTEM DEVELOPMENT

It is the future technology of connecting the entire world at one place. All the objects, things and sensors can be connected to share the data obtained in various locations and process/analyses that data for coordinating the applications like traffic signaling, mobile health monitoring in medical applications and industrial safety ensuring methods, etc. As per the estimation of technological experts, 50 billion objects will be connected in IOT by 2020. IOT offers a wide range of connectivity of devices with various protocols and various properties of applications for obtaining the complete machine to machine interaction. The traditional technologies like home automation, wireless sensor networks and control systems will become more efficient and smarter due to involvement of IOT. IOT is having a wide range of application areas. Such as Medical applications for monitoring the health of a patient and sends the information wirelesses. The present developing Wearable instrumentation is also based on IOT. The example wearable instrumentation is Smart wrist bands, navigation pills, etc. All this methods require an internet interface to update the health info or to control the device with a smart phone. The IOT also plays a vital role in media applications for advertising and exchanging the information worldwide. The manufacturing processes also require IOT for supply chain management, digital control systems for monitoring the manufacturing processes. The space requirements of IOT technology, the geographical specifications are always important in case of tracking applications. The geographical dimensions of objects are also important while obtaining the data from the objects. IOT in automobile applications and traffic maintenance became a most using area of automation. The automated devices in a vehicle should be connected to a cloud to update the car health within a period of time. By connecting the vehicles and traffic signaling systems to the internet, people can easily find the shortest path for their destination from the traffic monitoring systems and can navigate automatically by checking all other directions.

IV WORKING

The implemented system consists of an Arduino as a main processing unit for the entire system and all the sensor and devices can be connected with the microcontroller. The sensors can be operated by the controller to retrieve the data from them and it processes the analysis with the sensor data and updates it to the internet through Wi-Fi module connected to it. Wi-fi module through information goes to the server and patient condition or sensor information display on PC.

V BLOCK DIAGRAM



VI BENEFITS OF SYSTEM

The patient can monitor their health conditions at any time from any locations continuously and not required to visit hospitals all the time. So the status can be determined from any place of the world online and the doctor can examine the patient health conditions all the time by using different smart devices such as tablets, smart phones, and laptops. The family members can also track patient's health in an emergency situation. The illness people are not required to stand in a long queue for doctors, thus save more time and cost. Through this system distance barrier is eliminated.

VII CONCLUSION

The proposed system of patient health monitoring can be highly used in emergency situations as it can be daily monitored, recorded and stored as a database. In future the IOT device can be combined with the cloud computing so that the database can be shared in all the hospitals for the intensive care and treatment

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