



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 7 Issue: V Month of publication: May 2019

DOI: <https://doi.org/10.22214/ijraset.2019.5229>

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Smart Doctor Patient System

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Abstract: In This Project we have a tendency to ar implementing a heartbeat observance and attack detection system victimization the web of things. These days we've got associate degree enhanced range of cardiopathy enclosed enhanced risk of heart attacks. The user might set the high in addition as low level of heart bit limit. once settings these limits the system starts observance and as before long because the patient heart goes higher than an exact limit, the system sends associate degree tuned in to the controller that then transmits this over the web and alerts the doctors in addition because the involved users. Also the system alerts for low heartbeat.

Whenever the user logs on for observance, the system conjointly displays the live pulse of the patient. Thus involved ones might monitor pulse in addition get associate degree alert of attack to the patient like a shot from anyplace and therefore the person is saved on time.

The main purpose of this project —Heart attack observations system|| is to develop a wireless device network system that may endlessly monitor and detect attack malady expertise in patients at remote areas, A wearable wireless device system is intended to endlessly capture and transmit the signals to the patients device. The quickest alert can endlessly capture and transmit the signals to the patient's device. The quickest alert are issued to the doctors relatives, and hospitals, victimization the planned processing rule enforced within the patients device. The advantage of this methodology is that the user doesn't want specialized hardware and he/she in just about any place underneath virtually any circumstances.

Keywords: Body temperature Sensor, oxygen value, Doctors, Patient

I. INTRODUCTION

We are designing a smart doctor patient system to provide a platform for doctors to easily look after a patient's health and monitor their activities. This is designed in a system that includes a smart watch. This smart watch has sensors to detect heart rate, temperature, pulse rate, oxygen levels and sudden movements like tripping or slipping. All of the data from the smart band would be sent to a server. This will be very useful for doctors to keep a track of patient's health and make treatment.

Health monitoring is the major problem in today's world. Due to lack of proper health monitoring, patient suffer from serious health issues. There are lots of IoT devices now days to monitor the health of patient over internet. Health experts are also taking advantage of these smart devices to keep an eye on their patients. With tons of new healthcare technology start -ups, IOT is rapidly revolutionizing the healthcare industry. The IoT technology can provide a large amount of data about human, objects, time and space. While combining the current Internet technology and IoT provides a large amount of space and innovative service based on low-cost sensors and wireless communication. Cloud computing promote the development of integration of Internet and IoT. It is providing more possibilities of data collecting, data processing, port

management and other new services. Every object which connects to IoT requires a unique address or identification with IPv6.

There are so many people in the world whose health may suffer because they do not have proper access to hospitals and health monitoring. Due to the latest technology, small wireless solutions which are connected to IoT can make it possible to monitor patients remotely instead of visiting the physical hospital. A variety of sensors which are attached Hand band of a patient can be used to get health data like Hart beat, Pulse rate, temperature, acceleration, Oxygen level and the collected data can be analyzed and sent to the server Wi-Fi which is connected to the Internet. All the medical professionals can access and view the data, take decision accordingly to provide services remotely.

Health monitoring is important to be checked regularly in order to make sure our body constantly maintain in healthiness and excellent condition. Generally the vital parameters observed for health monitoring such as Hart beat, Pulse rate, temperature, acceleration, Oxygen level etc. These parameters will interpret some important information regarding to body health, for example high temperatures indicate someone having fever while unstable heart rate is sign to heart problem. One of the methods to do health monitoring is to use the smart watch of patient. This device operates by collecting the data and sends data to a monitoring station or a website for display, interpretation and storage for patient history record.

While technology can't stop the population from ageing or eradicate chronic diseases at once, it can at least make healthcare easier on a pocket and in term of accessibility.

II. INTERNET OF THINGS (IOT)

The Internet of Things (IoT) is the novel paradigm which has rapidly spread in the scenario of the emerging modern wireless communication. IoT represents a target and vision to extend the internet into the real world by embracing the everywhere and everyday object. Physical device are no longer disconnected from the virtual world but it can be controlled remotely from anywhere and the capability of device and physical item can act as physical access point to the internet service provider. Unquestionably the main consistency of the IoT idea is the collaboration in high impact for several aspects of everyday-life and manner of potential user. The most signally effectiveness of IoT in point of view is introduction domestic fields in the subject, assisted living, e-health, industrial, social internet of Things, agriculture and transportation. Home automation also rise of learning a few instance of possible application scenario and achieve to the new paradigm will be useful for role of the IoT in near future. Similarity, from another perspective for business users, the most obvious resultant will be light way in such as automation in individual and logistic, business management also for smart transportation of assets and goods. McKinsey global institute announced by 2025 internet endpoint will touch every physical thing around, furniture, cars, personal device and more, it's highlight future will be arise by combined the technology with the interactive of human environment and extension diffusion of the internet of things. —Smart object plays the main roles in the IoT vision. Whereas the information technology and embedded technology would have potential to revolutionize the uses of this object. Using the sensor, they are capable to understand the context and would be to communicate with each other —digitally upgrading —ordinary of object in this way should enhance their physical function by adding ability to digital object. Precursor development are more and more obvious today such as washing machines, exercise bike, electric toothbrushes also electronic metric that all occupied with the network interface. In other application domain in IoT, will estimated the network connectivity of everyday objects can be used and track remotely from anywhere and collect-up-the information from the smart object from anytime to analyze the data as cloud smart device. This interface has many aspects of real world can be observed at unattained case at trivial cost. The use of word internet of things, which stands for vision above can be seen either simply a metaphor- in the direction way will be soon communicate with each other, uses service, purvey information and generate value- or explanation in several technical sense, IP protocol stack will be used by smart objects. The term of IoT was published by work of Auto-ID center at Massachusetts institute technology (MIT), which in 1999 started the prototype of RFID infrastructure at 2002 the co-founder and former head Kevin Ashton touched it —we need an internet of things to standardization of computer to realize the real world. Nowadays the phenomenon of IoT is rapidly increase and academic, industrial and people know this is the emerging and phenomenon of new IT technology. European Union and politicians initially used the term in the context of RFID technology that they tried to link the RFID with the internet of things as key component of IoT. Finally, in 2009 the EU commission alluded to action plan ultimately Internet of Things as general evaluation forum for network of interconnected computers to the physical cyber world as interconnected objects.

III. BACKGROUND

Medical diagnostic consumes a large part of hospital bills. Technology can move the routines of medical checks from a hospital (hospital-centric) to the patient's home (home-centric). The right diagnosis will also lessen the need of hospitalization.

A new paradigm, known as the Internet of Things (IoT), has an extensive applicability in numerous areas, including healthcare. The full application of this paradigm in healthcare area is a mutual hope because it allows medical centers to function more competently and patients to obtain better treatment. With the use of this technology-based healthcare method, there are unparalleled benefits which could improve the quality and efficiency of treatments and accordingly improve the health of the patients.

A. Existing System

This system can detect pulse, temperature regularly with the help of sensor. Doctor can set the threshold for all parameters. If these parameters cross the maximum limit, System send notification on server through Wi-Fi.

In the new era of communication and technology, the explosive growth of electronic devices, smart phones and tablets which can be communicated physically or wirelessly has become the fundamental tool of daily life. The next generation of connected world is Internet of Things (IoT) which connects devices, sensors, appliances, vehicles and other —things. The things or objects may include the tag, mobile phones, sensors, actuators and much more. With the help of IoT, we connect anything, access from anywhere and anytime, efficiently access any service and information about any object. The aim of IoT is to extend the benefits of Internet with remote control ability, data sharing, constant connectivity and so on. Using an embedded sensor which is always on and collecting data, collecting, data processing, port management and other new services. Every object which connects to IoT requires a unique address or Identification with IPv6. There are so many people in the world whose health may suffer because they do not have proper access to hospitals and health monitoring all the devices would be tied to local and global networks.

B. Problem Definition

The earlier system is a good example of doctor patient system. But it only monitors the heart rate and displays current heart rate to the hospital server. This system can be modified in several ways. In proposed system we make use of a smart watch that has heart rate sensor, oxygen meter and a motion sensor. It can easily track all the movements and store the data which will be sent to the website via a server and a website will store all the data. Every patient can store their data on their own particular accounts. Doctors can track their reports via website itself with a password to approve authority. If a patient is showing sudden health changes, doctors can be given an alerting notification.

C. Working Methodology

SDPS Band - reads the patients data and sends to the server. The SDPS smart band system software reads patients data using embedded C . Sends data to the configure ip address of the SDPS server. The band continues to emit the data to the server unless it is on state.

SDPS Server- Receive patient's data from the SDPS band. Receive patients data sent over the internet for its IP ADDRESS saves to the respective database for the patient. Server continues to listen for the data all the time. Process required made by the web portal. The server processes all the request made by a doctor or patient to fetch the data from the database

Web Portal Can be used by a Doctor. The web portal for doctors can be used to see the real time data of the patients. It also can be used to write a prescription for the patient and to save it to the servers' database. Can be used by a Patient. The web portal for patient to see the real time data of himself/herself. Can be used to request a prescription from the doctor or from the servers database.

D. Proposed System

We are designing a smart doctor patient system to provide a platform for doctors to easily look after a patient's health and monitor their activities. This is designed in a system that includes a smart watch. This smart watch has sensors to detect heart rate, temperature, pulse rate, oxygen levels and sudden movements like tripping or slipping. All of the data from the smart band would be sent to a server. This will be very useful for doctors to keep a track of patient's health and make treatment. This chapter will cover the specifications and designing and working part of the project. Monitors patient's health and their activities. System is in the form of smart watch. System detects heart rate, temperature and pulse rate. Data from the smart band would be sent to the server. It is useful for doctors to keep a track of patient's health and makes treatment

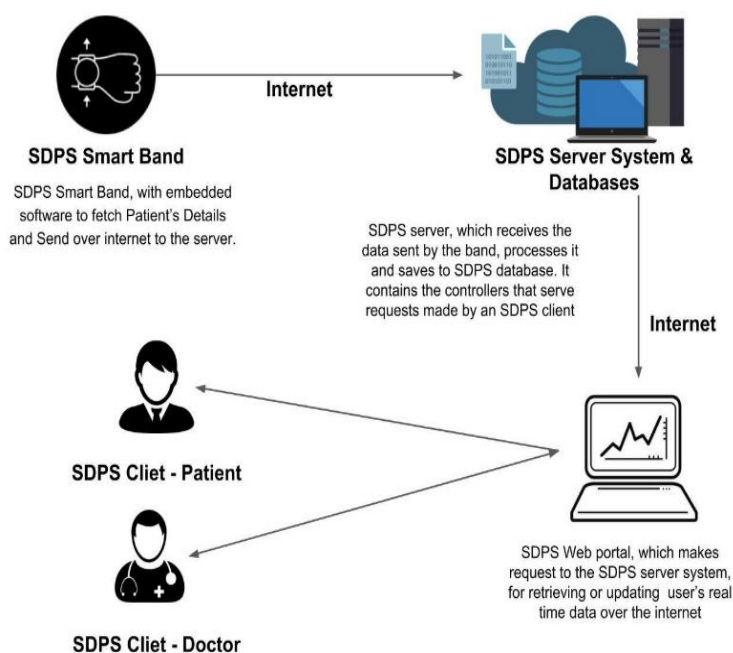
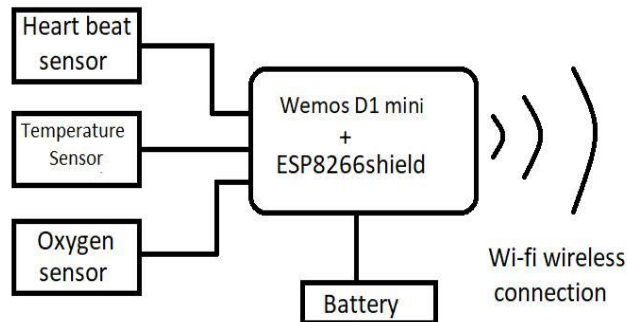


Fig. Architecture of SDPS

IV. SYSTEM CONFIGURATION:

A. Hardware Components

- 1) Wemos D1 mini(ESP 8266 based)
- 2) MAX30100 (Pulse Oxymeter, Heart-Rate Sensor & Temperature sensor).
- 3) Wemos D1 mini battery shield
- 4) Lipo Battery.
- 5) Push button.
- 6) Male-female wires.

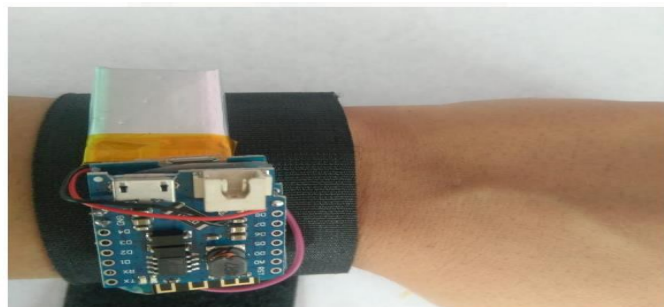
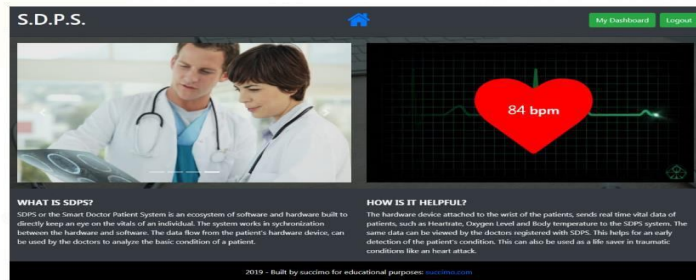


B. Software Requirements

- 1) Visual Studio 2008
- 2) My SQL

V. OUTPUT AND RESULTS





VI. CONCLUSION & FUTURE SCOPE

IoT changes the way the facilities are delivered to the healthcare industry. These technologies improve the product, causing a larger effect by bringing together minor changes. Thus we are designing and developing microcontroller-based real-time processing heart rate counting system which is able to detect any heart anomalies and heart attack and other various parameters by tracking heartbeat of a user.

VII. FUTURE SCOPE

In coming future as the technology gets advance more feature will be added to the smart bands. This proposed system will help people to track their health and it will notify the doctors and emergency contact. This can be used as an alternative to the regular check-ups for heart-attack patient. In future, some emergency medicine can be automated in the band itself using some mechanism like tiny hydraulic system for case of emergency.

AI can be integrated with the band to actually decide whether it is an actual heart attack or not. Some people like athletes can actually use this band as a fitness product.

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