MEDI-AUTOMIZED SYSTEM APPLICATION

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Abstract—Our project is a working model which incorporates sensors to measure parameters like body temperature, heartbeat rate, respiratory rate and ECG. Health-care environment has developed science and knowledge based on wireless sensing node Technology Oriented. Patients are facing a problemistic situation of unforeseen demise due to the specific reason of heart problems and attack which is because of nonexistence of good medical maintenance to patients at the needed time. This is specially for monitoring the old age patients and informing doctors and loved ones. So, we are proposing a innovative project to dodge such sudden death rates by using patient health Monitoring that uses sensor technology and uses internet to communicate to the loved ones incase of problems. This system uses temperature and heartbeat sensor for tracking patients health. Both the sensors are connected to the Arduino-uno. To track the patient health microcontroller is in turn interfaced to a LCD display and wifi connection to send the data to the web-server(wireless sensing node).Incase of any abrupt changes in patient heart-rate or body temperature alert is sent about the patient using IOT. This system also shows patients temperature and heartbeat tracked live data with timestamps over the Internetwork. Thus Patient health monitoring system based on IOT uses internet to effectively monitor patient health and helps the user monitoring their loved ones dorm work and save lives.

Keywords—Speech to text converter, Text to speech, Speech Recognition

I. INTRODUCTION

In recent times, several systems have come up to address the issue of remote health monitoring. The systems have a wireless detection system that sends the sensor information wirelessly to a remote server. Some even adopted a service model the requires one to pay a subscription fee. In developing countries, this is a hindrance as some people cannot use them due to cost issue involved. There is also the issue of internet connectivity where some systems to operate, good quality internet for a real-time remote connection is required. Internet penetration is still a problem in developing countries. To reduce some of these problems there is need to approach the remote detection from ground-up approach to suit the basic minimal conditions presently available in developing countries. A simple patient monitoring system design can be approached by the number of parameters it can detect. Remote health monitoring can provide useful physiological information in the home.

an individual to use their voice instead of typing on a keyboard. Speech acknowledgment is the inter disciplinary sub-field of computational semantics that creates procedures and advances that empowers the acknowledgment and interpretation of communicated language into text by PCs.

2. Literature Survey

1.Remote control of a domestic equipment from an Android application based on Raspberry pi card.

Home automation has been recalled in the first stage.In the second stage an application has been developed based on the android system.The different diagrams have been presented.Different codes have been developed to allow the communication between the remote user,the web server,the raspberry pi card and the home com ponents.Also an interface card has been developed to assure the communication between the home components and raspberry pi card.The application has been installed on a Smartphone, a web server and a raspberry pi card to order the shutter of windows.

2.Smart Home Automation

This paper details the idea of using an adaptive control system for managing household electricity consumption. The proposed solution aims at reducing the overall electrical energy consumption per household, thus decreasing their monthly electricity bills. The solution is based on a component oriented architecture that provides a high degree of adaptability to different types of users in terms of ways to access the application, the interaction with the individual devices and independency from various types and configurations of devices. It leverages and benefits of available tools and technologies such as device controllers,web services, mobile platforms, together with well known concepts of artificial intelligence and some of the services that will be available in the near future, such as meter data management systems. Beside previously

mentioned decrease of energy consumption, this solution can manage and monitor grid energy storage and household renewable energy sources,if available, and therefore its application results in offloading power grid starting from the lowest level of granularity-the end user.

3. Renewable Energy Based home automation system using ZigBee

This paper identifies the reasons for this slow adoption and evaluates the potential of Zigbee for addressing these problems through the design and implementation of a flexible home automation architecture. A ZigBee based home automation system and wifi network are integrated through a common home gateway. The home gateway provides network interoperability, a simple and flexible user interface, and remote access to the system. A dedicated virtual home is implemented to cater for the system's security and safety needs. To demonstrate the feasibility and effectiveness of the proposed system, four devices, a light switch, radiator valve, safety sensor and ZigBee remote control have been developed and evaluated with the home automation system.

4.User-friendly smart home infrastructure:BeeHouse

This paper presents a user friendly smart home infrastructure that offers the base platform for modular wireless nodes which can collect data, send information and control almost any aspect of the house, as well as the ability to access those nodes and their information through a cross-platform graphical user interface. This system will be referred as ' BeeHouse ' in this paper. This paper will propose a possible solution for a wireless modular home automation system that is smart, user friendly and easy to setup.

5.Development of ambient environmental monitoring system through wireless sensor network using NodeMCU and WSN monitoring

In this paper they have developed a system for web-based environment monitoring using the WSN Technology. WSN sensor nodes transmit data to the cloud-based database via Web API request. Measured data can be monitored by the user anywhere from the Internet by using the Web Application which one is also compatible for mobile phones.If the data measured by sensor nodes exceeds the configured value range in Web Application, Web Aplication sends a warning e-mail to users for improving environmental conditions.

3.IMPLEMENTATION

We have proposed an intuitive structure which incorporates sensors to measure parameters like body temperature, heartbeat rate, respiratory rate and ECG
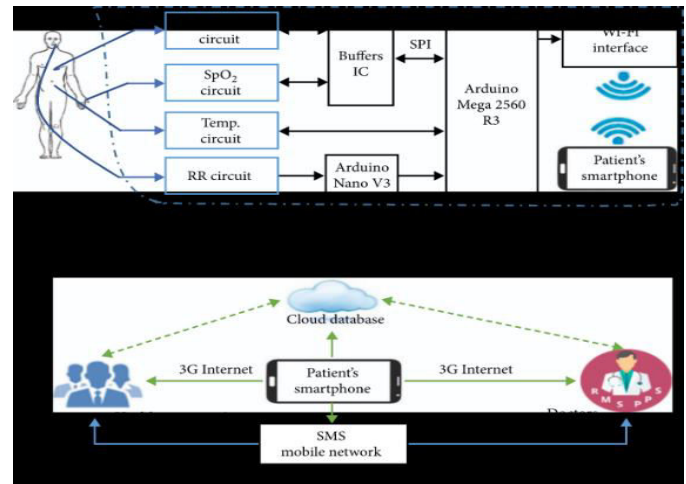
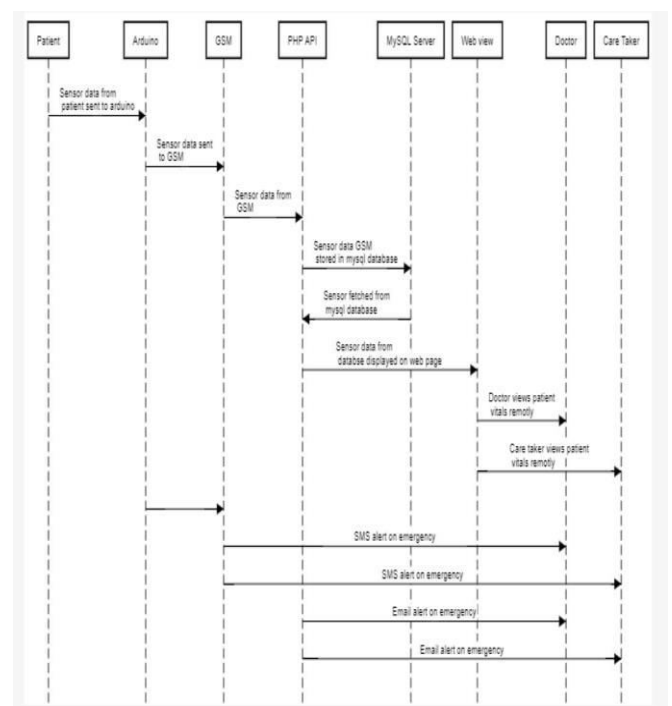Our architecture work flow diagram is given below.

Figure 3.1 Activity Diagram

Figure 3.2 Sequence Diagram

4.Proposed System

A. Design

Continuous glucose monitoring (CGM) provides information unattainable by intermittent capillary blood glucose, including instantaneous real-time display of glucose level and rate of change of glucose, alerts and alarms for actual or impending hypo and hyperglycemia, "24/7" coverage, and the ability to characterize glycemic variability. Progressively more accurate and precise, reasonably unobtrusive, small, comfortable, user-friendly devices connect to the internet to share information and for a closed loop artificial pancreas. CGM can inform, educate, motivate and alert people with diabetes. CGM is medically indicated for patients with frequent , severe, or

nocturnal hypoglycemia, especially in the presence of hypoglycemia unawareness. Surprisingly, despite tremendous advances, utilisation of CGM has remained fairly limited to date. Barriers to use have included the following: lack of Food and Drug Administration approval,to date , for insulin dosing in the United States and for use in hospital and intensive care unit settings; cost and variable reimbursement; need for recalibrations; periodic replacement of sensors; day-to-day variabilityin glycemic patterns, which can limit the predictability of findings based on retrospective, masked "professional" use; time, implicit costs, and inconvenience for uploading of data for retrospective analysis; lack of fair and reasonable reimbursement for physician time; inexperience and lack of training of physicians and other healthcare professionals regarding interpretation of CGM results.

B.Schematic

The main component is the Arduino UNO.Schematic is drawn by using Proteus.The main feature incorporated into the hardware is Tachometer. Each of the hardware is dissected and was designed /implemented separately for their functional and later incorporated as one whole application. This helped in the debugging process.

C.Simulation

The program code acts as the decision -maker embedded in the micro-controller deciding about the outputs for the particular sets of inputs. The program is coded using Arduino 1.65 and then compiled to form a ".hex" file which can then be burnt into the Arduino.
The ouputis also checked in simulation using Proteus.

5.Results and Discussion

Email alert: Here email alert has been sent to the registered email with the information about the patient vitals and link to the patient monitoring page.

Sms Alert: Here Sms alert has been sent to the registered email with the information about patient vitals

and link to page monitoring page.If the user chooses option 2, the system will login through the email then, it will give three informations namely total mails, unseen mails and latest mail. The total mails will give the total number of mails present in their email account. As for the unseen mails, it will give the number of the mail that has not yet been open since. For the latest mail, it will give the latest mail that the user has received along with the from and subject of the corresponding latest mail. At last, the mail will be logout.

6.Conclusion And Future Work

Our proposed intuitive system can be utilized to collect the personal physiological data from the patient thst simulates fall detection, heartbeat rate, temperature, humidity, toxic gas, air quality control, pressure. The designed system modules can further be optimized and produced to a final single circuit. more important fact that came up during project design is that all the mobile phones, and with circuit components used in the remote health detection system are available easily. With development in the integrated industry ,Micro Electro Mechanical systems(MEMs) and microcontrollers have become affordable, have increased processing speeds, miniaturized and power efficient. This has led to increased development of embedded systems that the healthcare specialists are adopting. These embedded systems have also been adopted in the Smartphone technology. And with increased internet penetration in most developing countries through mobile phones, and with the use of Internet of Things(Iot) will become adopted at a faster rate. The remote health Care system utilizes these concepts to come up with a system for better quality of life for people in society. From an engineering perspective, the project has seen concepts acquired through the computer science and embedded study period being practically applied. The Electric circuit analysis knowledge was used during design and fabrication of the individual modules. Electromagnetic fields analysis used in the wireless transmission between microcontrollers and the software programming used during programming of the microcontrollers to come up with a final finished circuit system.
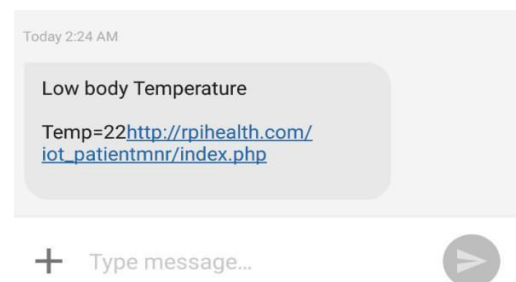
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