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Smart Health Monitoring System for Elderly and Disabled People

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ABSRACT: The objective of the project is to design a smart health monitoring system for patient based on internet of things. In this project we are monitoring a patient full time through IOT using different parameters of patient health level. For each parameter different sensors are used to monitor patient health level in real time we are using IOT. We are using sensor like heartbeat sensor for monitoring a patient pressure level, temperature is used to monitor patient body temperature. ECG sensor is used for monitoring blood pressure level and Heartbeat flow level. All these parameters are stored in Arduino microcontroller and then it will be uploaded in IOT server in case of emergency IOT server monitored by doctor he will prevent the treatment for the patient.

KEYWORDS: Automation, IoT, Monitoring System

I. INTRODUCTION

In this 20th century there is a drastic change InTechnology as well and in the field of wireless networks and automation which seems to be huge wave before decades. Internet has grown everywhere to access the services and smart things from anywhere on anytime at anyplace. In this internet of things (IOT) is playing an immense role in the field of automation and wireless technology for a decade. The Internet of Things (IOT) can fully exploit the potential of networking and an alter the device of innovative services to over-scale scenarios such as home automation, building automation, intelligent cities, and healthcare. For using technology, the healthcare monitoring is important for saving patient life. For this purpose, our projects is smart to way monitor patient health. IOT is real-time technology to monitor every field. For that different sensors are used to sensor values are monitor real time in IOT server. It will monitor individual patient and in case of emergency the doctor alerted by IOT and required treatment is given to that patient.

II. WORKING PRINCIPLE

The objective of the project is to design a smart health monitoring system for patient based on internet of things. In this project we are monitoring a patient full time through IOT using different parameters of patient health level. For each parameter different sensors are used to monitor patient health level in real time we are using IOT. We are using sensor like pressure sensor for monitoring a patient pressure level, temperature is used to monitor patient body temperature. ECG sensor is used for monitoring blood pressure level and Heartbeat flow level. In case of abnormal status of patient emergency message intimated via IOT server or android app to the doctor o and its relatives. All these parameters are stored in Arduino microcontroller and then it will be uploaded in IOT server in case of emergency IOT server monitored by doctor he will prevent the treatment for the patient. In this way efficient to monitor patient real-time. Using this technology, we can monitor the patient wherever in the world we can monitor patient health level.

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A. LCD Display

A liquid crystal display (LCD) is a thin, flat electronic visual display that uses the light modulating properties of liquid crystals (LCs). LCs do not emit light directly. They are used in a wide range of applications including computer monitors, television, instrument panels, aircraft cockpit displays, signage, etc.

They are common in consumer devices such as video players, gaming devices, clocks, watches, calculators, and telephones. LCDs have displaced cathode ray tube (CRT) displays inmost applications. They are usually more compact, lightweight, portable, less expensive, more reliable, and easier on the eyes. They are available in a wider range of screen sizes than CRT and plasma display, and since they do not use phosphors, they cannot suffer image burn-in. LCDs are more energy efficient and offer safer disposal than CRTs. Its low electrical power consumption enables it to be used in battery powered electronic equipment.

Figure:1 LCD Display

B. Pressure Sensor

A pressure sensor measures pressure, typically of gases or liquids. Pressure is an expression of the force required to stop a fluid from expanding and is usually state in terms of force per unit area. For the purposes of this article, such a signal is electrical.

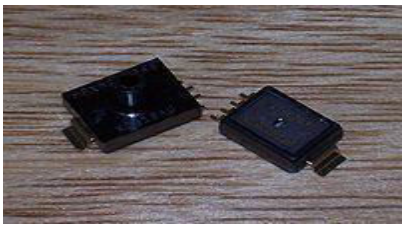

Figure:2 Pressure Sensor

Pressure sensors can vary drastically in technology, design, performance, application suitability and cost. A conservative estimate would be that there may be over 50 technologies and at least 300companies making pressure sensors worldwide.

C. Electrocardiogram

An electrocardiogram (ECG or EKG, abbreviated from the German Electrocardiogram) is a graphic produced by an electrocardiograph, which records the electrical activity of the heart over time. Analysis of the various waves and normal vectors of depolarization and repolarization yields important diagnostic information. It is the gold standard for the evaluation of cardiac arrhythmias It guides therapy and risk stratification for patients with suspected acute myocardial infarction. It helps detect electrolyte disturbances.

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III. SIMULATION OF PROPOSED METHOD

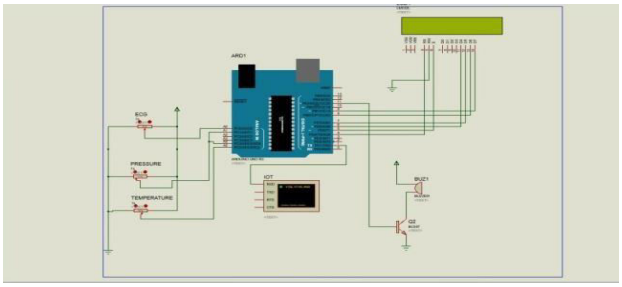

Figure:3 Simulation of proposed Method

The Proteus Design Suite is a proprietary software tool suite used primarily for electronic design automation. The software is used mainly by electronic design engineers and technicians to create schematics and electronic prints for manufacturing printed circuit boards.

IV. HARDWARE IMPLEMENTATION

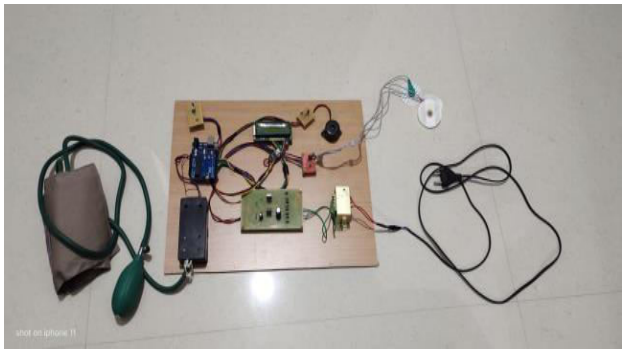

Figure:4 Snap shoot of hardware implementation

You can tinker with your UNO without worrying too much about doing something wrong, worst case scenario you can replace the chip for a few dollars and start over again. "Uno" means one in Italian and was chosen to mark the release of Arduino Software (IDE) 1.0. The Uno board and version 1.0 of Arduino Software (IDE) were the reference versions of Arduino, now evolved to newer releases. The Uno board is the first in a series of USB Arduino boards, and the reference model for the Arduino platform; for an extensive list of current, past, or outdated boards see the Arduino index of boards.

V. CONCLUSION

Using this project doctor can monitor his patient everywhere in the world using IOT server and required treatment or medicine is prescribed. Everyone can use this project even patient attainder also monitor patient blood pressure level and flow heartbeat using ECG interface with the microcontroller.

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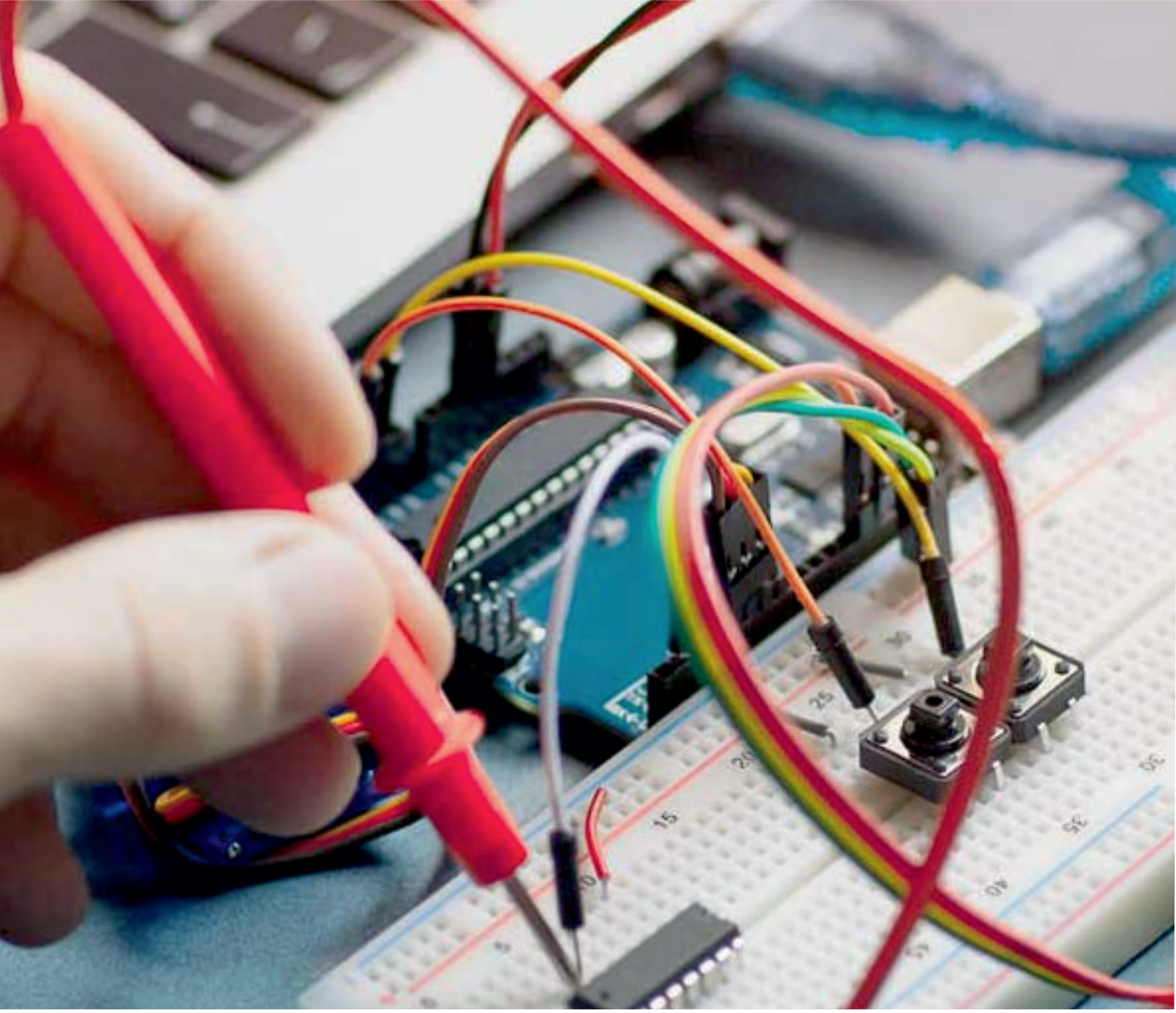

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