DESIGN AND DEVELOPMENT OF HEART ATTACK DETECTION AND HEART RATE MONITORING

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Abstract

While most current health monitoring devices monitor heart rate, body temperature, and falls, very few are available for asthmatic wheezing, which largely due to the difficulty of filtering the frequency of wheezing. In this project design and development of heart attack detection & heart rate monitoring system is implemented.By using arduino the entire system is controlled. Herat beat sensor will be detected whenever there is change in heartbeat. Similarly, SMS and location is shared to the corresponding phone number. Hence this project gives effective results.

I.INTRODUCTION

A physician, or medical doctor, leads the medical team in caring for patients as the primary healthcare provider. A doctor diagnoses and treats diseases and conditions, as well as provides treatment in many forms including medication, procedures, surgery, or therapy.

As a hospital doctor, you'll examine, diagnose and treat patients who've been referred to the hospital by GPs and other health professionals. You will need to apply your medical knowledge and skills to the diagnosis, prevention and management of disease emergency medicine. A physician, medical practitioner, medical doctor, or simply doctor is a professional who practices medicine, which is concerned with promoting, maintaining, or restoring health through the study, diagnosis, and treatment of disease, injury, and other physical andmental impairments.

An approach has been developed to know the heart beat rate and temperature by using sensors without involving doctor. A new technology is developed to know the temperature, heart beat rate. In the new technology temperature and heart beat sensors are used. Sensors are used to identify the temperature and heart beat rate. If temperature and heart beat rate are above the predefined value, it is intimated to the user by using speaker.

SYSTEM HARDWARE

1. ARDUINO:

Arduino UNO is a microcontroller board based on the **ATmega328P**. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a

USB cable or power it with an AC-to-DC adapter or battery to get started.

2. PULSE SENSOR

The basic heartbeat sensor consists of a light emitting diode and a detector like a light detecting resistor or a photodiode. The heart beat pulses causes a variation in the flow of blood to different regions of the body.

3. GSM Module 800L

In the system hardware, The GSM Plays one of the unique and important roles which fulfil the desired objective of the System. GSM mainly used for triggering and transferring the Short Message Service (SMS) to corresponding parent in case of absence of the student to the educational Institution.

4.MAX232:

For the quick and rapid transmission of the information from the GSM Module of the system to the network or service provider the MAX232 is utilized.

5. LCD DISPLAY:

We use a traditional Display used for the prototypes which is a 16*2 Segment display for convenience of the Client. And entire information required for the client to know of can displayed over the LCD.

6. Power Supply:

For the working of the entire system a regulated and an uninterrupted power supply was provided. In order to regulate the power supply, we maintain a regulator namely 7805/7812 in the system to provide a constant voltage of +12V or -12Vto the board.

7. GPS

It is abbreviated as global system for positioning system.

The GPS provides geo-location and time information to GPS receiver anywhere on or near the Earth.
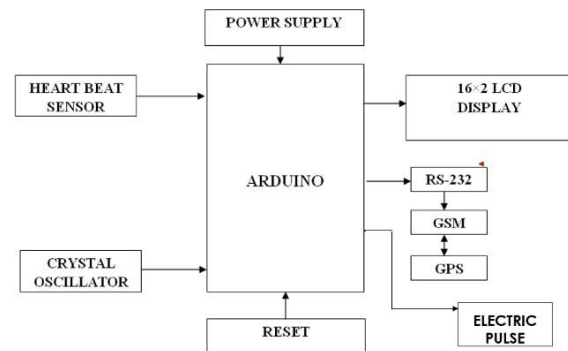
Block Diagram:

FIG: BLOCK DIAGRAM OF DESIGN AND DEVELOPMENT OF HEART ATTACK DETECTION AND HEART RATE MONITORING

II. WORKING

Sensors can increase the intelligence of life-supporting implants as well as enable new types of monitoring to support more independent patient lifestyles. Patients need to be monitored pre-hospital, in-hospital (before, during, and after procedures), at home, in long-term care, and in other locations. It is this constant need for patient monitoring that drives sensor usage because sensor devices can be programmed to process vital-sign data and alert medical personnel when a particular vital sign, such as heart rate, falls outside of normal parameters.

In this project design and development of heart attack detection & heart rate monitoring system is implemented. By using Arduino, the entire system is controlled. Herat beat sensor will be detected whenever there is change in heartbeat. Similarly, SMS and location is shared to the corresponding phone number. Hence this project gives effective

results.

III. RESULTS

As we conclude to the results, as an end result is displayed in the user's applications. Such as mobile, LCD, Etc.

IV. CONCLUSION

Patient monitoring device has become increasingly important in Hospital wards to record real-time data for better treatment. Hence proposed design and development of heart attack detection & heart rate monitoring system is used for enhancing the reliability, flexibility by improving the performance. The patient health is continuously monitored and the acquired data is transmitted to a centralized Arduino controller. The sensor networks for in-home patient monitoring together with the electronic patient records and information security are subject to recent research. The efficiency of examining ward will be improved by making the system more real-time and robust.

V. REFERENCES

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