Heart Attack Detection System Project

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ABSTRACT

"Detecting heart attack symptoms" If you're in an emergency setting for symptoms of a heart attack, you'll be asked about your symptoms and have your blood pressure, pulse and temperature checked. The hours following a heart attack can be scary and confusing. Doctors are busy, but they really want to help you. You can help them do so by coming to each appointment prepared. Bring any questions you may have about your diagnosis, your treatment or other elements of your medical care. You'll be hooked up to a heart monitor and have tests to see if you're having a heart attack.

1 INTRODUCTION

Heart attack is a global leading cause of death for both gender and the occurrence is not always known to us. Heart Rate Calculation has traditionally been conducted using specialized hardware or device. It used most commonly in the form of pulse oximeters or Electrocardiogram devices. though these devices have higher method and they are reliable to normal user. However, these devices require users to perform their process. In this paper, we propose a system capable of estimating the heart beat rate using just a electronic device just keep in in bag and travell with any where .We all know heart attack can kill your life in 3 attempts but now a days it can be dangerous in first attempt also. If checking our health regularly on daily basis then we can detect so many different diseases by detecting them previously, Life is precious. Many people among us lose their life to heart attack. This is because of their diet, age, less physical activity and many other factors. Heart attack is not easy to detect

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The sensor is then interfaced to a microcontroller that allows checking heart rate readings and transmitting them over Internet. The user may set the high as well as low level of heart beat limit. After setting these limits, the system starts monitoring and also alerts for lower heartbeats. For this the system uses two circuits. One is the transmitting circuit which is with the patient and the other is the receiver circuit which is being supervised by the doctor or nurse. The system makes use of heart beat sensor to find out the current heart beat level and display it on the LCD screen.

In our paper, we are trying to detect heart attack by IOT device. The mechanism our research is, place index finger on senser, which is shown with a picture below.

Specially Watch out for these problem

•	Chest Discomfort. It's the most common sign of heart danger.
•	Nausea, Indigestion, Heartburn, or Stomach Pain.

- Pain that Spreads to the Arm.
- You Feel Dizzy or Lightheaded.

2 PROPOSED WORK PLAN

The sensor shines a light lobe (a small very bright LED) through the ear and measures the light that gets transmitted to the Light Dependent Resistor. amplified signal gets inverted and filtered, in the Circuit. In order to calculate the heart rate based on the blood flow to the fingertip, a heart rate sensor is assembled with the help of LM358 OP-AMP for monitoring the heart beat pulse. A Heartbeat sensor is a monitoring device that allows one to measure his or her heart rate in real time or record the heart rate for later study. It provides a simple way to study the heart function.

Technology that we are going to use are.When the sensor is working, the beat LED flashes in units on with each heartbeat. This digital output can be connected to the microcontroller directly to measure the Beats per Minute (BPM) rate. Temperature sensor is analogue quantity with the range 0-135 degree. All the data can detected by sensor and give display which is LCD of 16*2. Simultaneously we these data goes on server and display on control room. We make this system universal for all the hospital rooms. Operator can seat in single place and able to monitor all the patients.

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Proposed Work Plan

Phase 1:

- Arduino is connected with laptop.
- Now the check the arduino COM PORT is added in tools option
- **Make physical connection now arduino with heart rate sensor also connect lcd display** for Deploy the code into the arduino Uno IDE platform and upload it into arduino UNO

Phase 2:

- When device is ready to run now put the finger of a person to heart rate sensor.
- Now monitor the LCD display is working or not.
- Now for a test put this device on your hand and make run up for about 100m and then monitor the heart rate sensor again.

- Now if device is showing high heart rate which is obvious after a run up hence therefore device working fine.
- Hardware: Arduino Uno,Heart rate sensor, Jumper wire,16*2 LCD Display
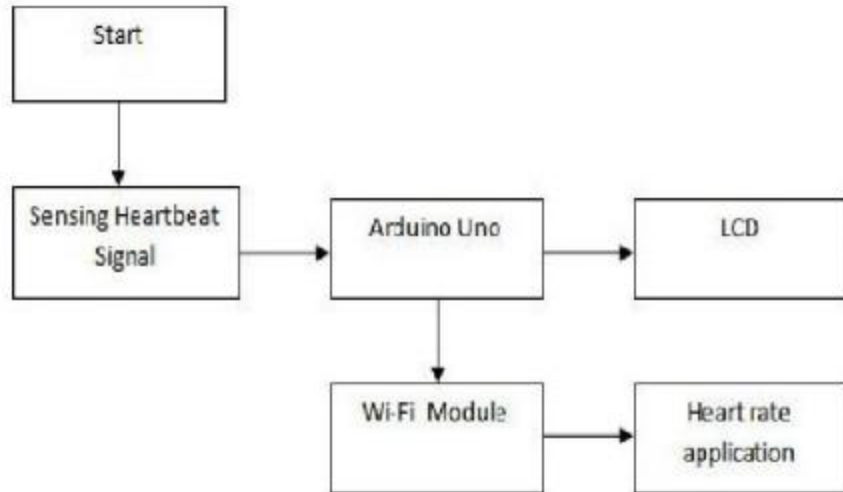- Software platform programming language: Ardunio Uno IDE Platform

Fig. 1: Flow chart

3   EXPERIMENTAL RESULT ANALYSIS:

We have observed heart rate in different age group so to measure and prevent from heart attack in random fashion. You can see in Fig.3 full detail of observation. [4,5] After setting up the system, check all the connections. Once the system is ready upload the source code. After uploading the code place the index finger on the heartbeat sensor. The heartbeat sensor will start monitoring the pulse rate. LCD is used for displaying the calculated pulse rate.

Fig.2: Arduino device

Blood pressure is the most important for a human body. It is a force produce by blood on the side of arteries, veins and the chambers of the heart and it varies between a maximum pressure called systolic pressure and a minimum pressure called diastolic pressure [13].

Age	Heart Rate (Beats/min)	Respiratory Rate (Breaths/min)
Newborn	100-160	30-50
0-5 months	90-15	25-40
6-12 months	80-140	20-30
3-5 years	80-120	20-30
6-10 years	70-110	15-30
11-14 years	60-105	12-20
14+ years	60-100	12-20

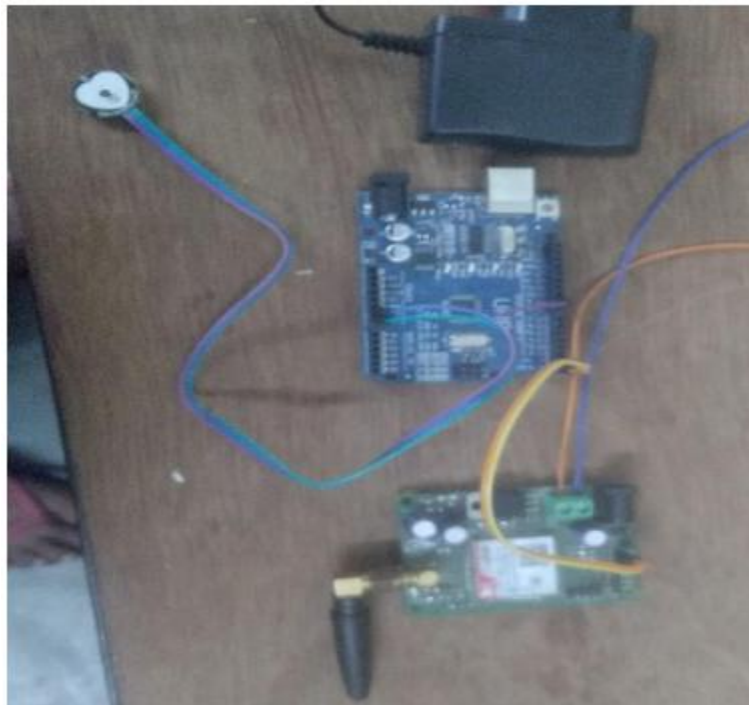**Fig .3: Observe table in different age group**

Fig.4: complete setup

CONCLUSION

- To make a application which will help heart patients and normal healthy people.
- This application will work for rapid detection of heart attack.
- This can be easy to carry in daily lifestyle.
- Save lives and improve quality of living.

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