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A Smart Child Safety Based Monitoring and Indication System

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Abstract: This paper discuss about the safety of the children. It is known that the technological advancements are increasing at a faster pace. But the utilization of technologies in various sectors is very low. We know that people of different age group faces different difficulties. But the security for children's is very low. There is lot of cases registered regarding child safety. So we propose a system to continuously monitor the parameters of the child and also their location. The system provides smart child tracking and monitoring system. The health status of the children is monitored by using temperature sensor. By using heart beat sensor the heartbeat of the children is monitored. And all these details are continuously send to the microcontroller and if any value goes abnormal then the alert message will be provided to the parents through GSM and location of the children will also be send using GPS.
Keywords: Wi-Fi module[node MCU], temperature, heartbeat, location, SMS, child safety.

I. INTRODUCTION

The motivation for this system comes from increasing need for child's safety. In present scenario, the usages of mobile phones are gradually increasing and thus the wide knowledge and information is handy. The platform on which this project will be running on is the IOT. It refers to the set of devices that stay interconnected to the internet. Some devices like smart cars, wearable devices, human implanted devices, home automation systems, smart phones which are widely increasing to measure the information around them. The node MCU micro controller boards based on ESP8266 and functions of receiving SMS provided by GSM module using IOT. Also, additional modules are implemented which will provide the current location of the child to parents via SMS and the measures added are temperature sensor, heart rate sensor that will be programmed with node MCU to display continuously to the parent.
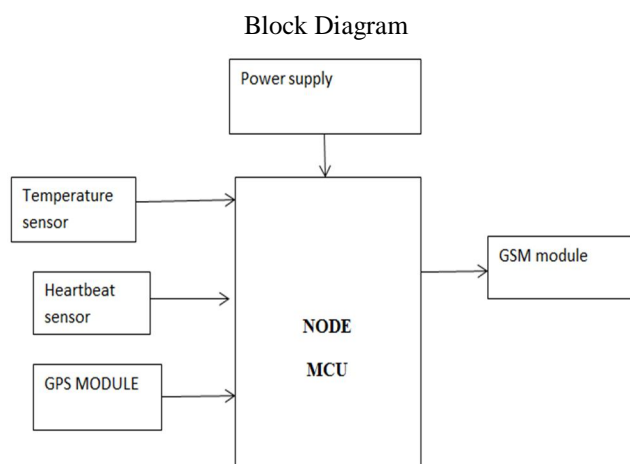
Block Diagram

A. Block Diagram Description

An ESP8266 micro controller controls the system architecture. A 5V power supply circuit using LM7805 IC, a famous positive voltage regulator comes in three terminal provides 5V DC output. The node MCU controls various types of data from different modules interfaced to it. The IOT is used as an interface to send the dat received by the node MCU via SMS to a smart phone over GSM/GPS module. Once the node MCU has received the information, it will process that information and transfer it to the IOT cloud server, which then sends via SMS to the user's smartphone. The user can just tap on the default GPS application installed in mobile phone and it will show the child's location, heartrate when in abnormal state and the temperature variation.

1) Temperature Sensor
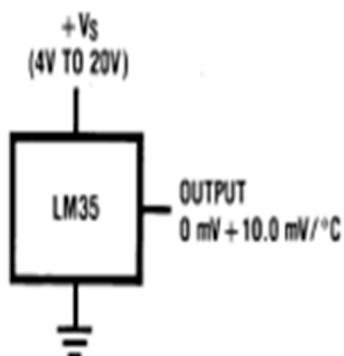
The first slave connected to a temperature sensor LM35.This senses the temperature of an engine and provides the level of temperature.

Some of the features are Calibrated directly in ° Celsius (Centigrade), Linear + 10.0 mV/°C scale factor, 0.5°C accuracy guarantee able (at +25°C), Rated for full −55° to +150°C range.

2) Heart Beat Sensor: HEART BEAT sensor is designed to give digital output of heart beat when a finger is placed on it. When the heart beat detector is working, the LED flashes in each heart beats.This digital output can be connected to the microcontroller directly to measure the Beats Per Minute (BPM)rate. It works on the principle of light modulation by the flow of blood through finger at each pulse.


Fig:Heart beat sensor

B. Experiment Setup
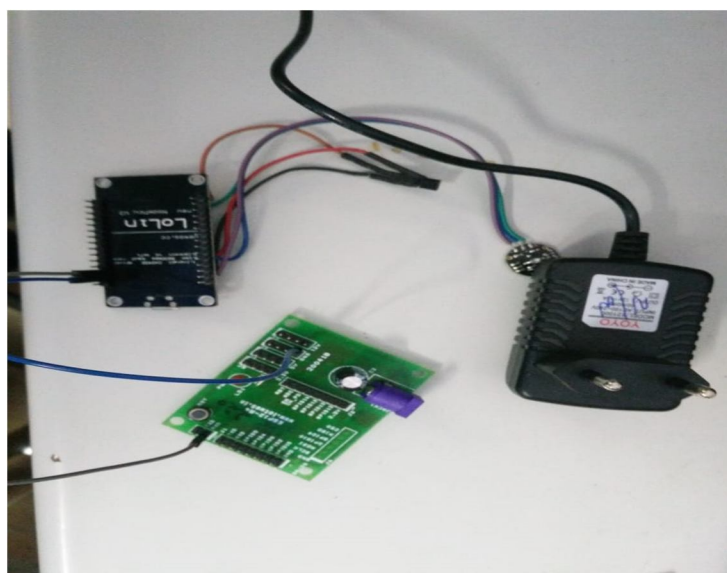
II. CONCLUSION

The smart child safety based monitoring system is very helpful specially for working parent. It ensures the parent the child's safety using IOT technology. The parent can monitor the child's actions by this system. The GSM technology is used to send message,along with the GPS it is used to locate the child accurate position and sends location via GSM and also the child temperature and heart rate is monitored using such sensors. Thus, this system is very much relaible.

A. Result
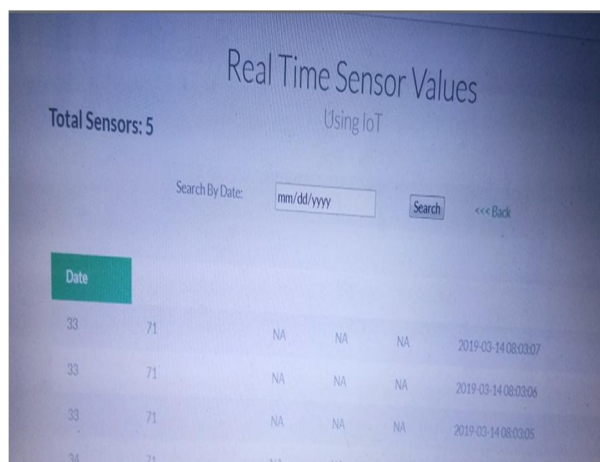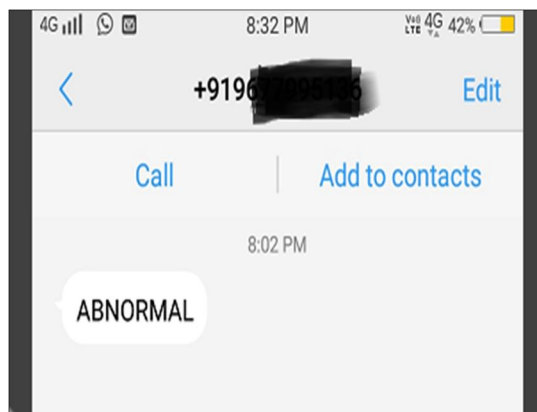
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