

and IR light is required for the contract and afterwards relaxes and the determination of heartbeat rate by expanding and diminishing of oxygenated blood.

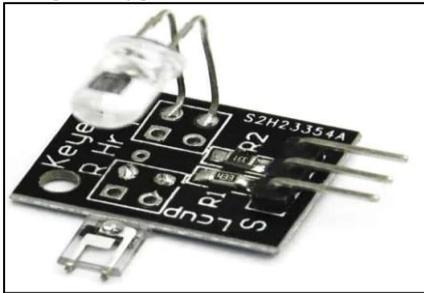


Fig. 2: Heart beat Sensor

V. EYE BLINK SENSOR

The Eye blink sensor sense the eye blink by using infrared source. The variation across the eye will vary as per the eye blink. There are two specific levels in the eye motion sensor that is opening and closing of the eye movement. If the eye is closed the output is high and the other one the eye is opened the output is low by these ways determine the development of closing and opening of eye.

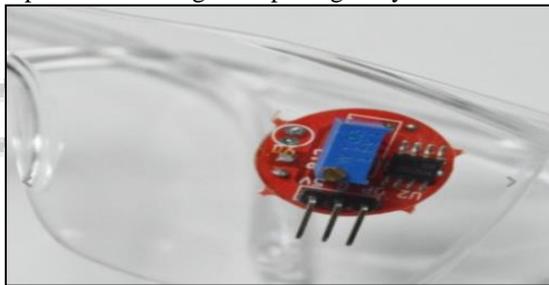


Fig. 3: Eye Blink Sensor

VI. BODY MOVEMENT SENSOR

Accelerometer is utilized as body movement sensor which is used to predict the motion tracking of the patients. It is the strategy for recording developments of individuals and objects. This sensor is a gadget which is delicate to the infrared radiation so then distinguishes the patient development whether to be moved as in right, left or straight position and these sensors are exceptionally created for information observing for the biophysical and the biochemical component.



Fig. 4: Body Movement Sensor

VII. SPO2 SENSOR

SPO2 sensors is peripheral capillary oxygen saturation sensor which measures the level of oxygen saturation of the patient blood and this sensor have an infrared light source

and photo detectors to transmit light and spo2 sensors have two methods transmitting and the reflecting method and this sensor is placed in the patient fingertip or earlobe.



Fig. 5: SPO2 Sensor

The framework consequently records normal glucose esteem at regular intervals for as long as 72 hours.

VIII. ARDUINO IDE

ARDUINO IDE is official and essential programming software. It is fundamental for Arduino-Uno devices. The open source Arduino Software (IDE) makes it very simple to compose program code and transfer it to the board. It runs on Windows, Mac OS X, and Linux. The Arduino Integrated Development Environment is a cross-stage application that is written in JAVA and development on preparing.

A. Installation of Arduino IDE

- 1) Step 1: Download the Required Software and Files
- 2) Step 2: Get the SD Card and the Card Reader
- 3) Step 3: Check the Drive in Which the SD Card Is Mounted
- 4) Step 4: Format the SD Card
- 5) Step 5: Write the OS on the SD Card

IX. EXISTING SYSTEM

The Existing framework gives the solution for just three wellbeing parameters of the trance like state patients. This existing work utilizes the results of heart beat sensor, Temperature sensor and body development sensor for detecting the health parameters such as heartbeat rate, internal heat level, patients body temperature and movements of the trance like state patients. In the event there is discover any variations from the health parameters of the patient the microcontroller sends an alarm message through the GSM module. It sends that information to the mobile phone of the patient's in charge person and guardian.

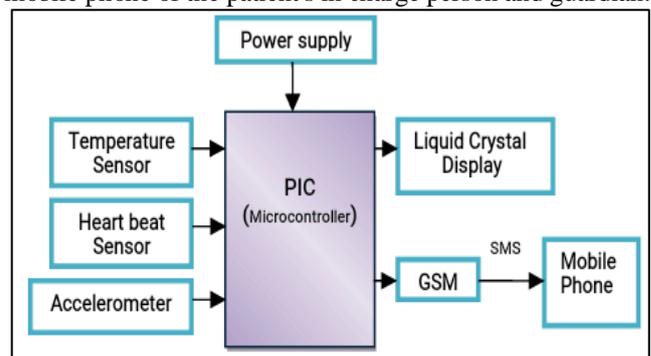


Fig. 6: Existing system

There is any irregular condition the message alert send through GSM module to the cell phone as SMS and also it showed in LCD board. These drawbacks could be overwhelmed by the proposed framework.

X. PROPOSED SYSTEM

The proposed system was implemented by using an IoT technique known as Thingspeak. This system uses additionally two sensors which are Eye blink sensor and, SPO2 sensor to monitor the eye blink and oxygen saturation percentage of the coma patients. All sensors of the proposed frame work and these sensors output values are used to checked health condition of the coma patients. These sensors are connected to the microcontroller to monitor the health parameters of the coma patients.

If there is find any abnormalities in any of the health parameters of the patient the microcontroller immediately sends an alert message through the GSM module and Wi-Fi module. The proposed frame work used Nemours health sensors such as temperature sensor, heart beat sensor, body movement sensor, eye blink sensor and SPO2 sensor. These sensors have been used for IoT so as to be transmitted using the ESP8266 Wi-Fi module and the patient's data can be saved, analyzed, displayed in forms of graphs and it can be viewed by using mobile application.

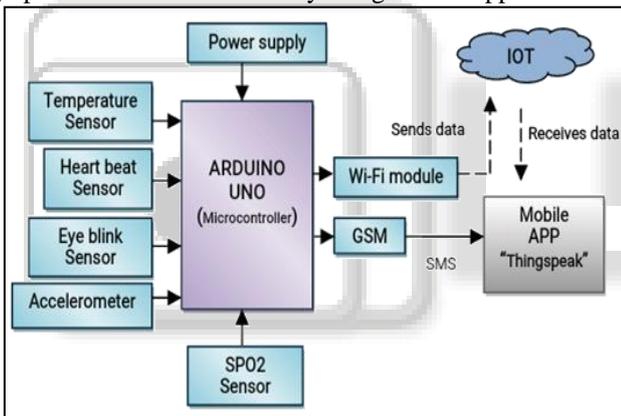


Fig. 7: Proposed system

The entire proposed work is autonomous hence there are requirement of clinical staff is decreased and if we used the monitoring system at home, the need of physical presence for monitoring will be reduced too. The cost of clinical staff is also reduced exponentially.

XI. RESULT & CONCLUSION

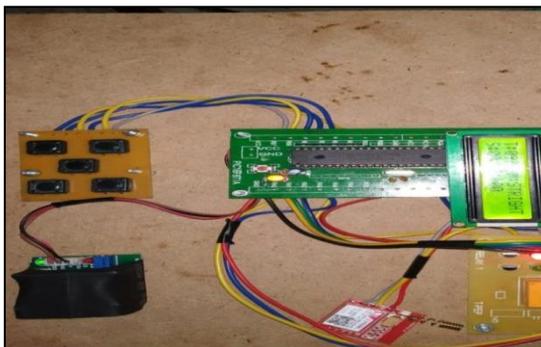


Fig. 8: Result

This system introduces an IoT based health care monitoring system for the coma patients along with GSM. The proposed system analyzes the health parameters values. In case those values are abnormal, GSM module will be triggered to send SMS message to predefined Smartphone number. The overall accuracy of the system is above 90% in different situations. However, we're looking for to enhance the overall accuracy of the project in the future

REFERENCES

- [1] S. Venkatraman and S. G. J. Yuen, Fitbit, Inc., "Wearable heart rate monitor", U.S. Patent Application 15/246, 387, 2019.
- [2] P. Mistry, S. Sadi, C. D. Aumiller and C. Wei, Samsung Electronics Co Ltd, "Wearable electronic device", U.S. Patent Application 10/194,060, 2019.
- [3] T. O. Prasetyono and N. Kusumastuti, "Optimal Time Delay of Epinephrine in One-per-mil Solution to Visualize Operation Field", Journal of Surgical Research, 236, pp.166-171, 2019.
- [4] P. M. McClatchey, F. Wu, I. M. Olfert, C. G. Ellis, D. Goldman, J. E. Reusch and J. C. Frisbee, "Impaired tissue oxygenation in metabolic syndrome requires increased microvascular perfusion heterogeneity", Journal of cardiovascular translational research, vol. 10, issue 1, pp. 69-81. 2017.
- [5] Mathusudhan S, Nilla A L, Pradeep A, Manibharathi S, Dr.J. Geetha Ramani, "Employ Health Legacy" Journal of Emerging Technologies and Innovative Research (JETIR) June 2019.