INTELLIGENT HELMET

For Coal Miners using Xbee

Under the Guidance of

Ms. P.B. Kambale (Assistant Prof.)

By

Bhagirath V. Shelar
(211457)

Introduction :

- The persons who are working in the coal mining has to face various environmental parameters in their mining.
- They have the danger from the methane, carbon monoxide, and temperature.
- So we need to provide a strong security for the people who are working in the coal mining.
- The purpose of this project is to provide a solution to mining by wireless communication and safety monitoring. The person must use the helmet while working in the coal mining.

Aim & Objective :

Aim :

- Our project focuses on a mine supervising system which is based on the cost effective IOT system. Our project aims at developing a sensor networks, realized real-time surveillance with early-warning intelligence on harmful gases and be easily available for the help of miner in panic situation.

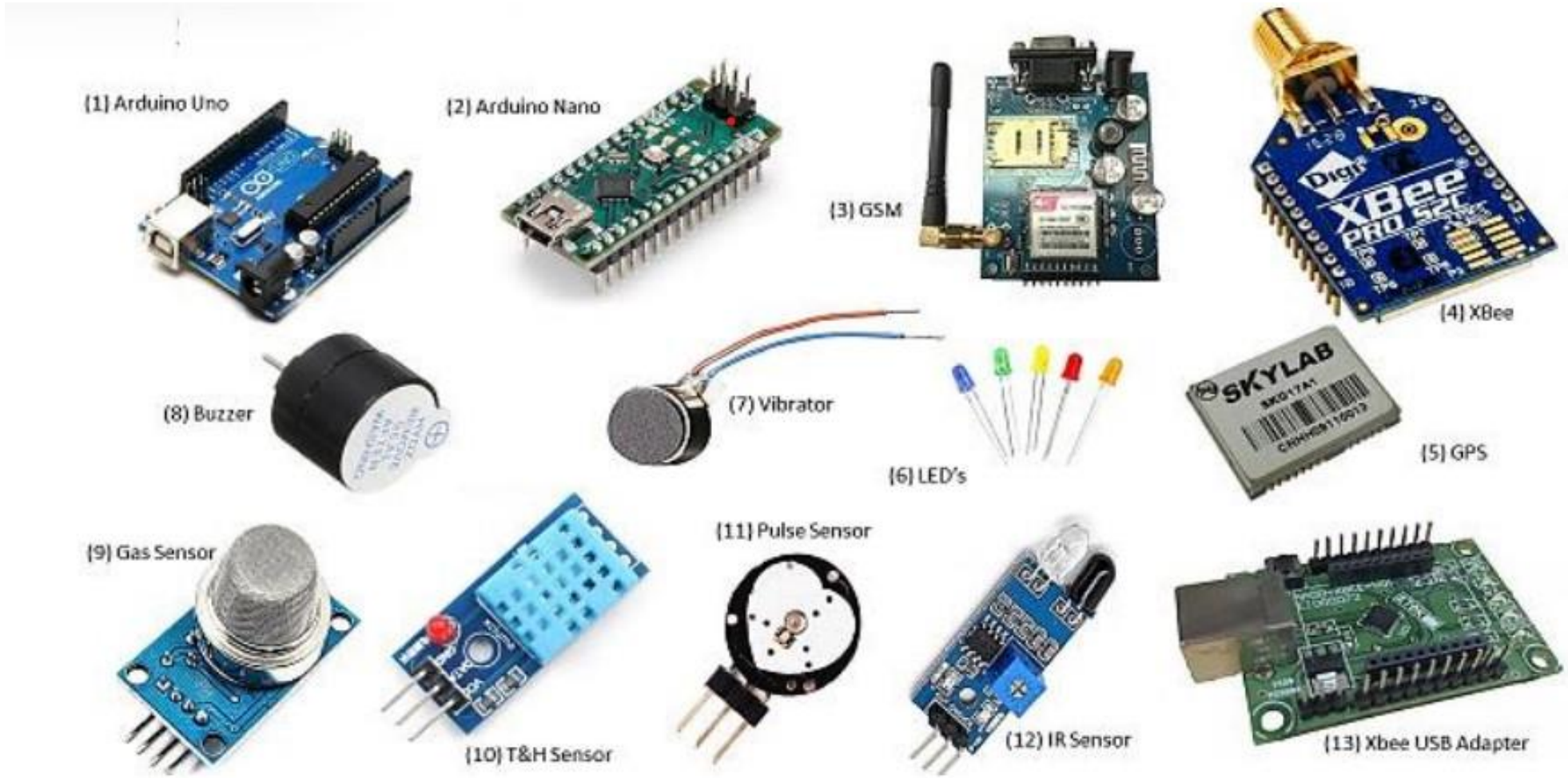
Objective :

- Detection of different environmental parameters in their mining.
- Communication establishment between sensors and Zigbee.
- Establishment of Wireless Sensor Network .
- Design of a real-time monitoring system.

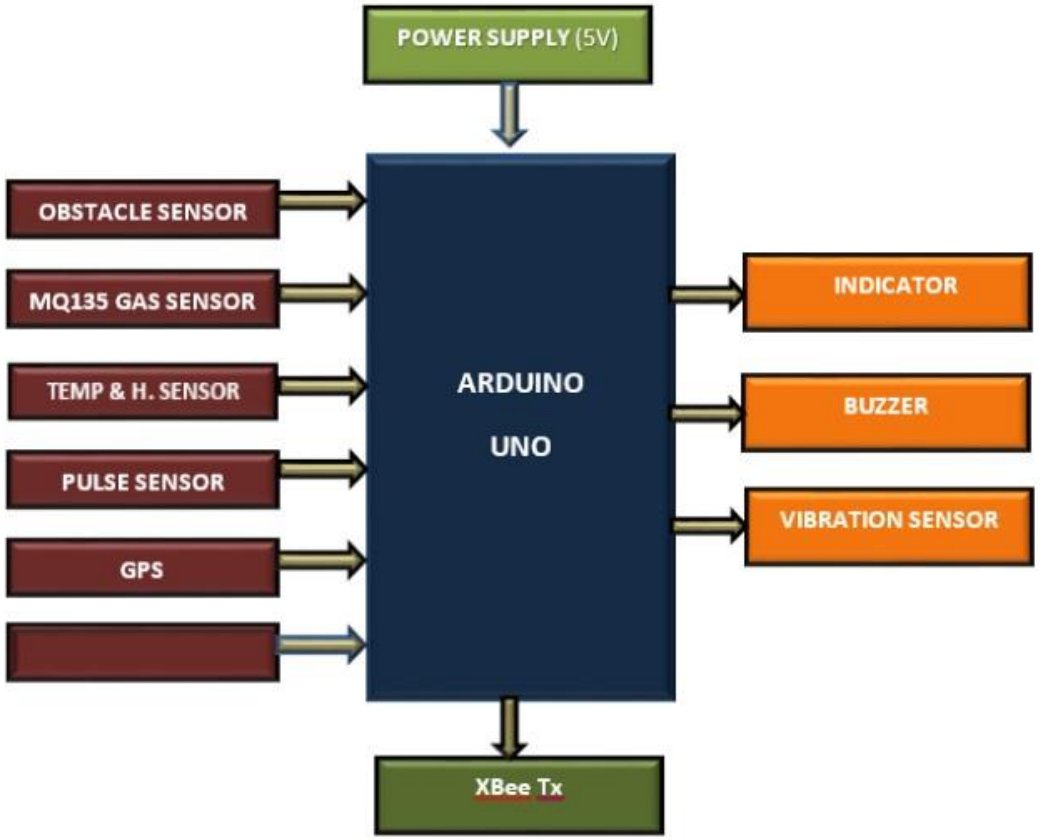
Why we need smart helmet ?

- Undergroung mining operations posses to be adventure as for because the security and health of workers are concerned.
- Coal has proven to be very dangerous and has caused many accidental deaths over the year. Keeping this in mind we have designed an intelligence system.
- It will help the worker to predict the future hazards & let him get the workers time cycle to get prepaire & if any accident happen it will help.

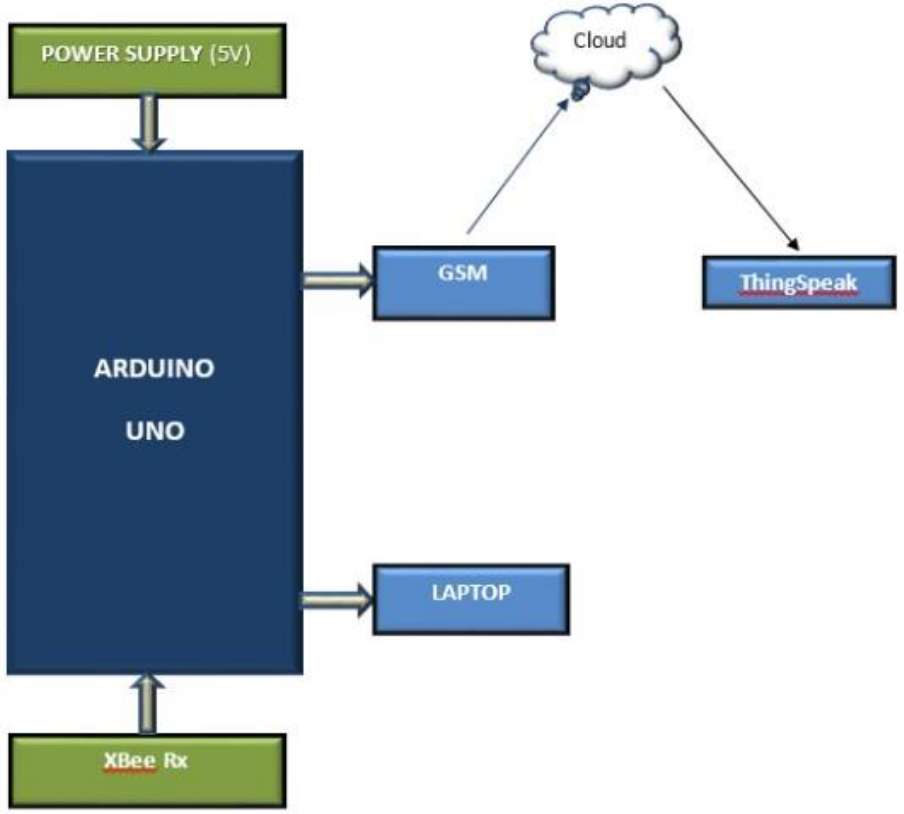
System Specification



Block Diagram :

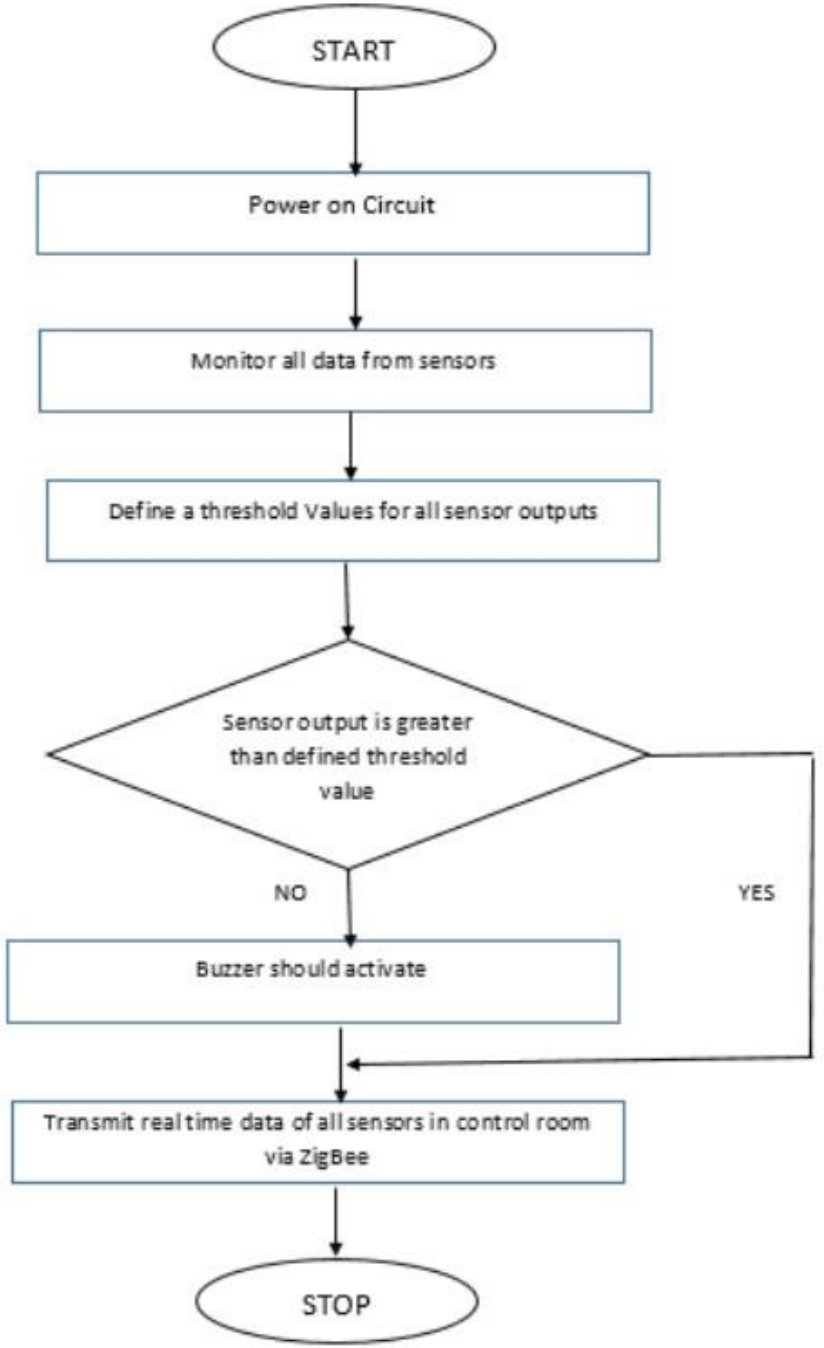


Transmitter Section



Receiver Section

Operational Flow



Result & Conclusion

Result :

- This section discusses the results of the proposed system. The sensors sense the environmental conditions around the miner working in underground mining. All the real time data is display on screen, and also updated on the web by using IoT with the help of Thing speak. If any of the environmental parameters exceeds its standard value the miner, co-miners, supervisor and the control station get notify by buzzer. If any hazardous event occurred in the mine in such case the control station will be able to provide the rescue team as early as possible

Conclusion :

- The system can be improved by adding more measuring devices to check the miner’s blood pressure and other. Gas concentrations can be measured as well. In future, it could also be considered if such modules can also be used for secondary services, such as localization of workers relative to each other. In future using additional sensors all possible safety issues could be monitored such as dust, vibration, water leakage etc. Also we can use number of salve and improve the data transmission distance. The control can be governed from the surface itself as the system provides easy access

Applications and Advantages:

- **Applications :**

“Intelligent Helmet for Coal Miners project” can be used in various coal mines for detecting the dangerous environment situations.

- **Advantages :**

“Intelligent Helmet for Coal Miners” provides an automatic safety system for coal miners and other workers or engineers entering into coal mine.

Thank You..!