IOT Based Pollution Monitoring system

(using Raspberry PI)

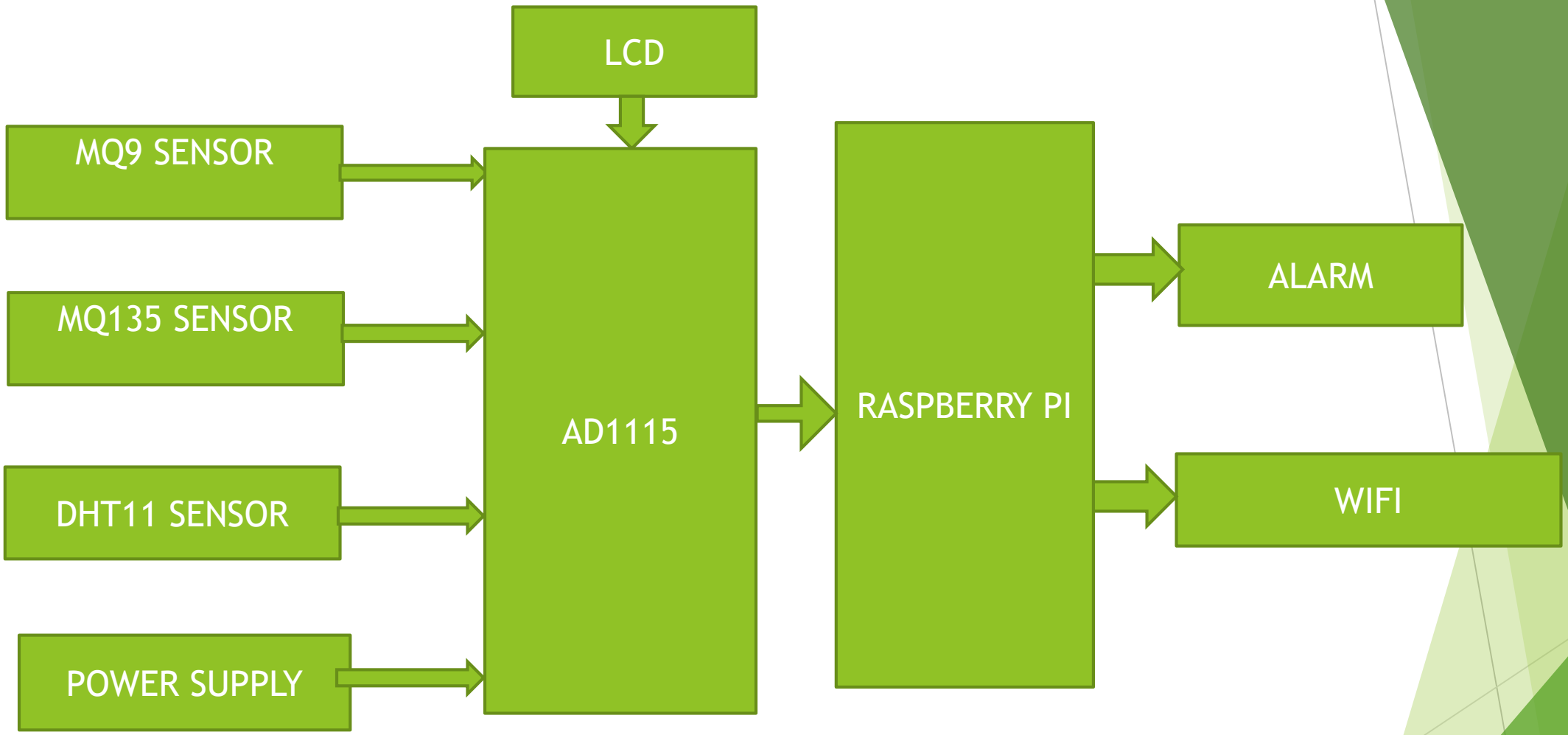
Keywords – Raspberry pi, Internet of things, Thing speak platform, python coding, gas sensors.

Abstract

- With the tremendous increase in the level of population and mechanization pollution has increased many fold. This results in deterioration of individual health thereby by directly affecting health of entire population.
- An IOT Based Air Pollution Monitoring System is proposed which will monitor the level of pollution and Air Quality over a webserver using internet. Sensors can be deployed at various locations which can sense and collect the data.
- The big data can be uploaded on the Google cloud which facilitates monitoring from any part of the globe.
- The presence of harmful gases like CO2, Smoke, CO, Butane and LPG above a particular limit may turn fatal which can lead to severe accidents. This type of accidents can be prevented by implementing an effective pollution monitoring system.
- The air quality can be displayed on the LCD and as well as on webpage which makes environment monitoring easy. An alarm can also be triggered when the air quality goes down beyond a certain level.

INTRODUCTION

- The main objective of IoT Pollution Monitoring System is that the Air pollution is a rising issue these days. It is compulsory to monitor air quality and keep it under control for a healthier future and healthy living for all.
- Internet of things (IoT) is gaining popularity day by day as it can transform life making it easier for human beings .With the growth of population and with the increase in the automobiles and industries the atmospheric conditions are considerably deteriorating day by day.
- Risky effects of pollution include several allergic reactions causing irritation of the eyes, nose and infections of the throat. It can also lead to inflammation inside lungs paving way to problems like bronchitis, heart diseases, pneumonia, lung and aggravated asthma .
- These pollution related issues can be addressed by having an efficient monitoring system. Observing gives measurements of air pollutant concentrations, which can then be examined, interpreted and presented.


LCD
MQ9 SENSOR
MQ135 SENSOR
DHT11 SENSOR
POWER SUPPLY
AD1115
RASPBERRY PI
ALARM
WIFI

Hardware

1. Raspberry Pi Zero W
2. 16X2 LCD
3. MQ 9 sensor
4. MQ 135 sensor
5. DHT11 sensor
6. 5V buzzer
7. 5V power supply

Software

1. Python 3
2. Putty
3. Proteus 8.0

Advantages

1) Easy to Install

2) Updates On mobile phone directly

3) Accurate Pollution monitoring

Applications-

1) Industrial perimeter monitoring

2) Indoor air quality monitoring.

3) Site selection for reference monitoring stations.

4) Making data available to users.

5 The system can be used to monitor and control industrial process.

6 The system can be used to continuously monitor patients from anywhere in the world.

7 The system can also be used to monitor and control a greenhouse.

Conclusion:-

The system to monitor the air of environment using Raspberry pi microcontroller, IOT Technology is proposed to improve quality of air. With the use of IOT technology enhances the process of monitoring various aspects of environment such as air quality monitoring issue proposed in this paper. Here, using the MQ135 and MQ9 gas sensor gives the sense of different type of dangerous gas and Raspberry PI is the heart of this project. Which control the entire process.