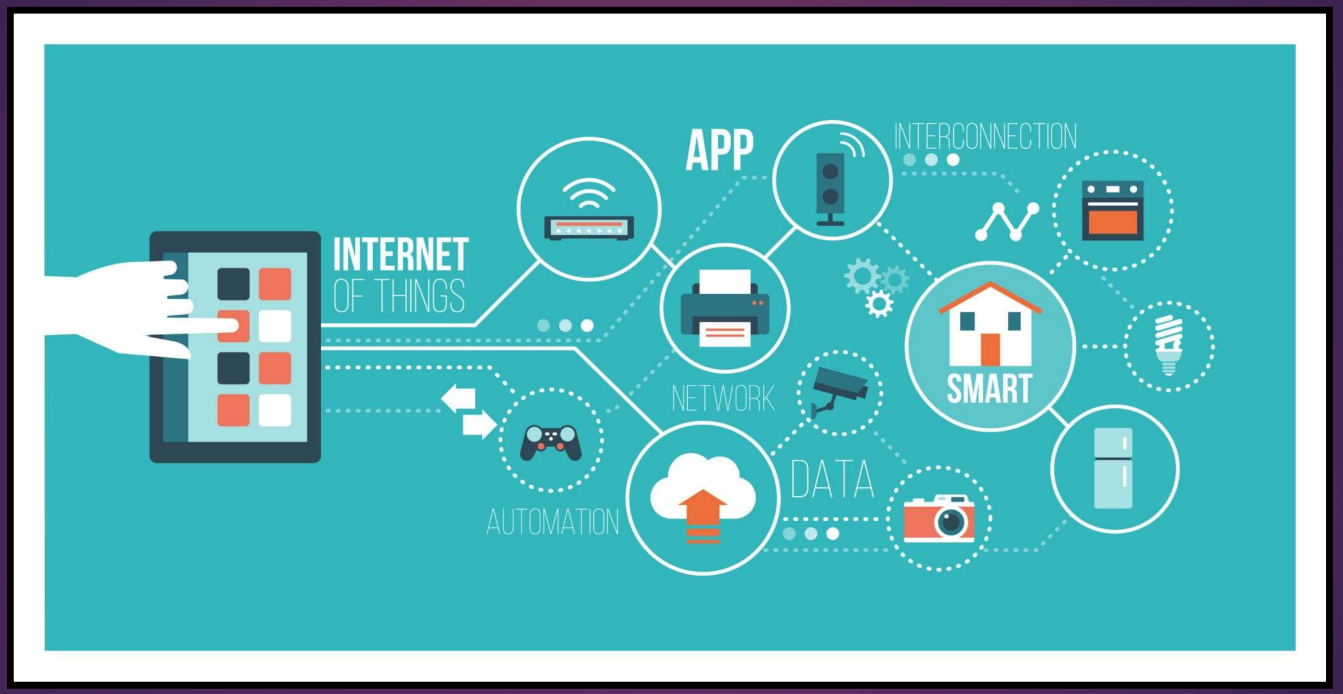
INTERNET OF THINGS



OVERVIEW

- Introduction
- Aim
- Requirements
- Circuit design
- Working
- conclusion

INTRODUCTION

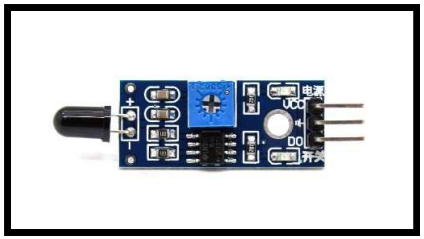
- The Internet of things is the connection of physical devices using internet network.
- Now a day's all the devices are becoming internet connected. Internet provides facility to connect a different kind of devices such as sensors, fitness devices, CCTV Cameras etc.
- The design of a home fire alarm with Arduino-based system
- The project purposely is for house safety where the main point is to avoid the fire accidents occurred to the residents and the properties inside the house as well
- This will eventually allow the users to protect their lives and the properties as well from the disaster.

AIM

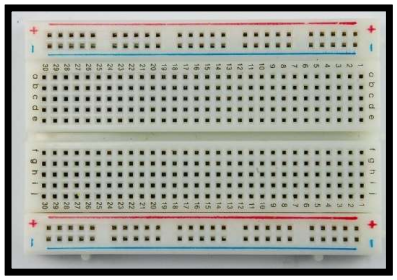
- Aim : To Develop an IOT based fire detect using flame sensor and sms system by using Arduino Uno Board.
- To overcome disadvantages and looking for implementation of fire automatic fire detection

Requirements

Arduino Uno



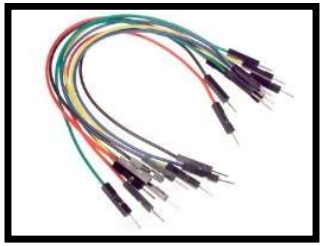
Flame Sensor



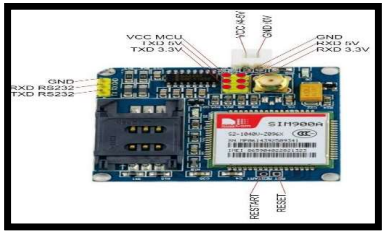
BREAD BOARD

Buzzer

Resistor



jumper wire



GSM Sim900A

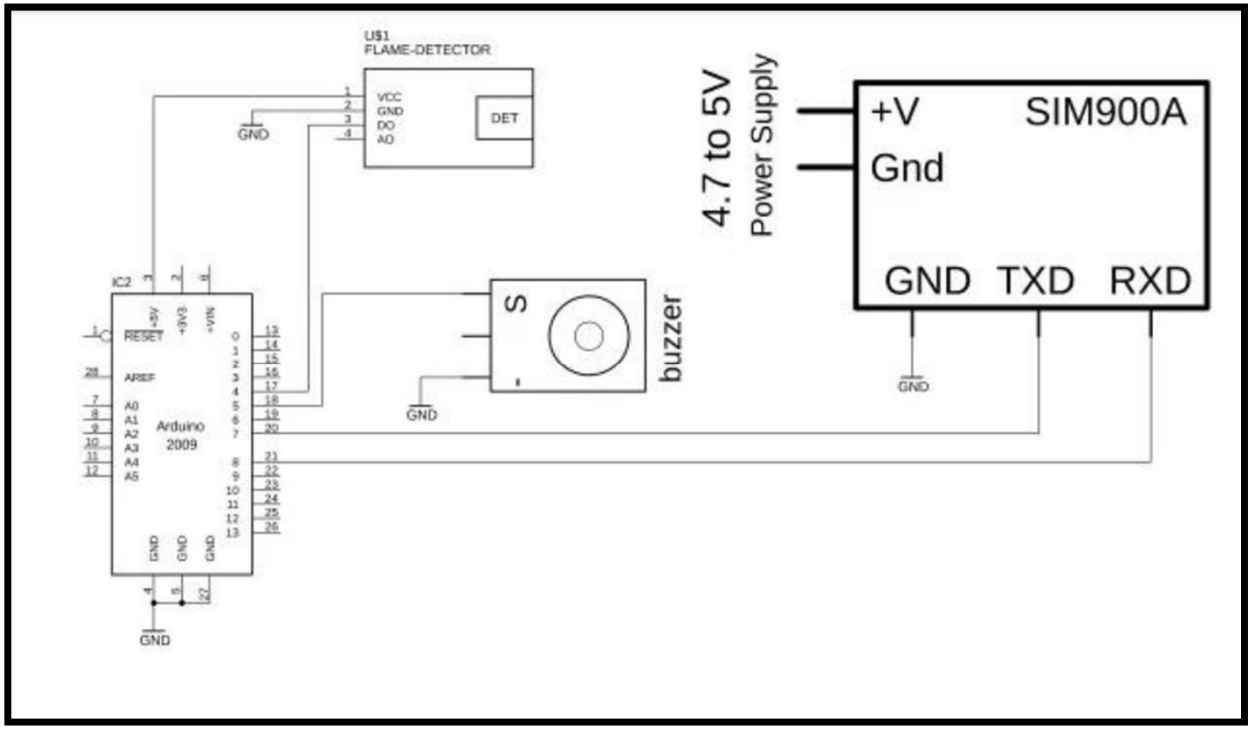
FLAME SENSOR

- This is the Flame Sensor Module which is also known as the Infrared IR Fire Sensor Detector.
- This Flame Sensor is extremely sensitive to IR wavelengths between 760-1100nm light.
- This flame sensor is ideal for short-range fire detection and can be used to monitor projects or as a safety, precaution to cut devices OFF / ON or to turn ON buzzers
- This Flame sensor module is also provided with a Potentiometer which can be used for adjusting the Fire Flame detection sensitivity.
- The Flame sensor module is also provided with two LEDs L1 and L2. One LED is turned ON when you power up the Flame Sensor module while the other LED only lights up when it detects the flame.

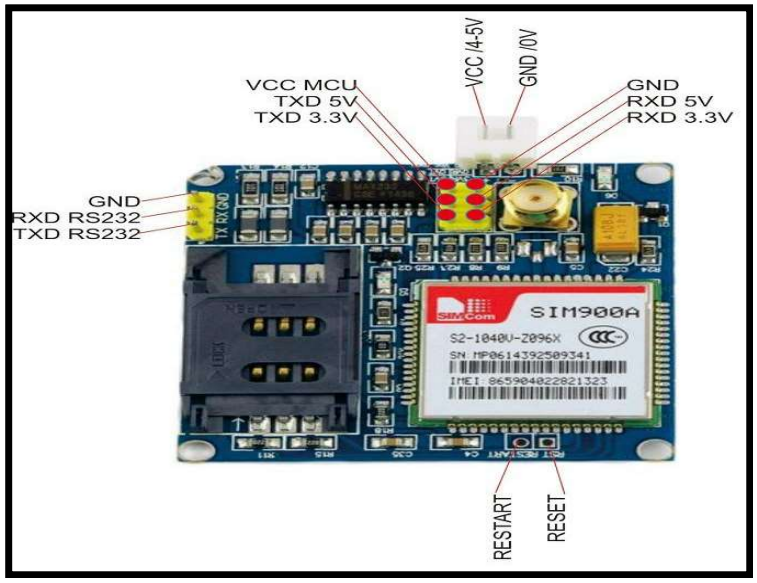
GSM Sim900A

- This is the cheapest GSM module available on the market.
- Another cool thing is, it can be easily interfaced with 5V supported controller boards like Arduino Uno
- Use in the area of full signal strength
- When modem is powered up, network LED blink every second and after network registration it will start to blink after every 3 seconds. This shows that the modem is registered with the network

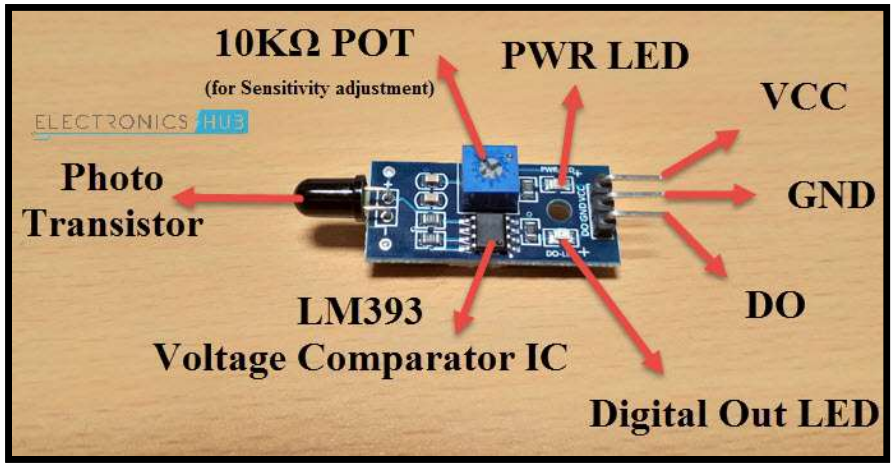
CIRCUIT DESIGN



PIN CONFIGURATION



GSM Sim900A Pinout



- Flame sensors

WORKING

- The flame sensor detects the presence of fire or flame based on the Infrared (IR) wavelength emitted by the flame. It gives logic 1 as output if a flame is detected, otherwise, it gives logic 0 as output. Arduino Uno checks the logic level on the output pin of the sensor and performs further tasks such as activating the buzzer and LED, sending an alert message.
- **Step 1** : Connect a flame sensor to Arduino with a Digital Pin
- **Step 2** : Connect the gsm module to Arduino
- **Step 3** : Next, connect a Buzzer to Arduino to make an alarm sound. There is no need to use a resistor for the Buzzer connection.
- **Step 4** : Connect Led bulb to Arduino for a flashing light for the fire alert warning.

APPLICATIONS

- THIS PROJECT WILL BE APPLICABLE IN DIFFERENT FIELDS SUCH AS :

- BUSSES,TRAINS
- FORESTS
- INDUSTRIES
- RESIDENTIAL AREAS
- COMMERCIAL AREAS

CONCLUSION

- This system presented the development of a fire alarm system using the Arduino UNO.
- This system undoes the need of a person to continuously monitor the area.
- The monitoring will be done with the help of sensors.
- Buzzer and Message alerts are used to alert the required authorities.
- This system is a low cost, power efficient and based on the instruments that reliable as well as durable.
- Many future works are also possible in this system design.

THANK YOU