
Smoke and Fire Detection

The slide features a light blue background with decorative elements. At the top, there are two horizontal lines: a thick teal line followed by a thin light blue line. At the bottom, there are also two horizontal lines: a thin light blue line followed by a thick teal line. Additionally, there are two short, thick olive-green horizontal bars, one on the left and one on the right, positioned below the main title.

Supervised By

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Team Members

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Updates

1. Components Required for smoke detection is on its way.
2. Wrote the arduino code for smoke detection and alarm system.
3. Email response system.
4. Built Neural Network for fire detection
5. Successfully completed image extraction from video
6. We could not integrate model with image extraction and are working on it

Neural Network Model

The screenshot shows a Jupyter Notebook window titled "Untitled6.ipynb". The interface includes a menu bar (File, Edit, Selection, View, Go, Run), a search bar, and a status bar at the bottom indicating "Restricted Mode". The notebook content displays the summary of a Keras sequential model named "sequential_1".

Model: "sequential_1"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 195, 195, 128)	1664
conv2d_1 (Conv2D)	(None, 194, 194, 64)	32832
max_pooling2d (MaxPooling2D)	(None, 97, 97, 64)	0
conv2d_2 (Conv2D)	(None, 96, 96, 32)	8224
max_pooling2d_1 (MaxPooling2D)	(None, 48, 48, 32)	0
flatten (Flatten)	(None, 73728)	0
dense (Dense)	(None, 128)	9437312
dense_1 (Dense)	(None, 1)	129

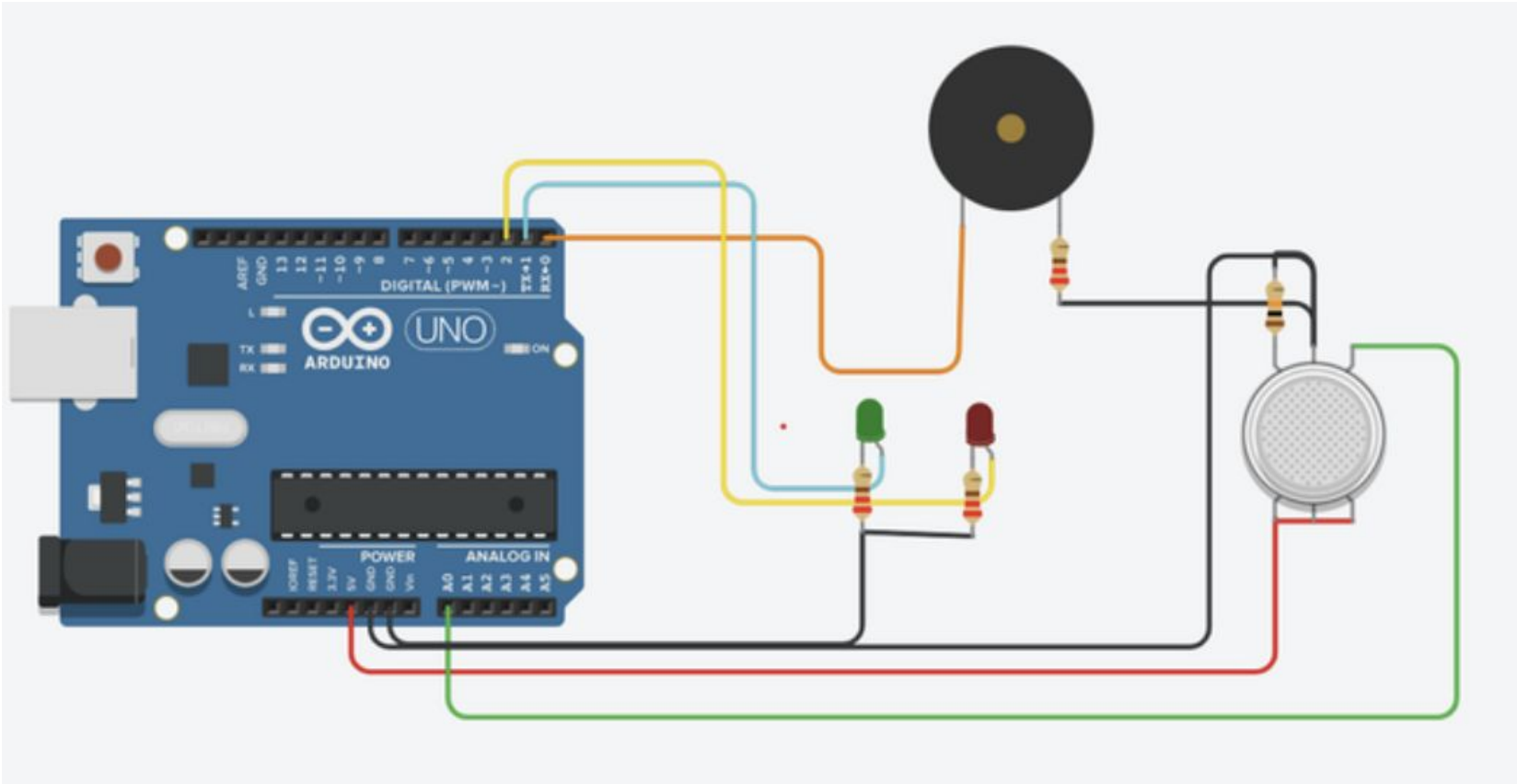
=====
Total params: 9480161 (36.16 MB)
Trainable params: 9480161 (36.16 MB)
Non-trainable params: 0 (0.00 Byte)

A notification box in the bottom right corner asks: "Do you want to install the recommended 'Python' extension from Microsoft for the Python language?" with buttons for "Install" and "Show Recommendations".

Parts Ordered for Smoke Detection Model

- Gas Sensor : MQ2 (Rs 320)
- Arduino Uno/ ESP8266 (Rs 285)
- Power Supply
- Led (Rs 63)
- Buzzer Alarm (Rs 10)
- Jumper Wire (Rs 29)
- Breadboard (Rs 126)
- Gas Lighter (for testing purpose) (Rs 20)

Proposed Model



Arduino Code

```
#define gasSensor A0
#define buzzer 0
#define ledGreen 1
#define ledRed 2
#define HIGH 600

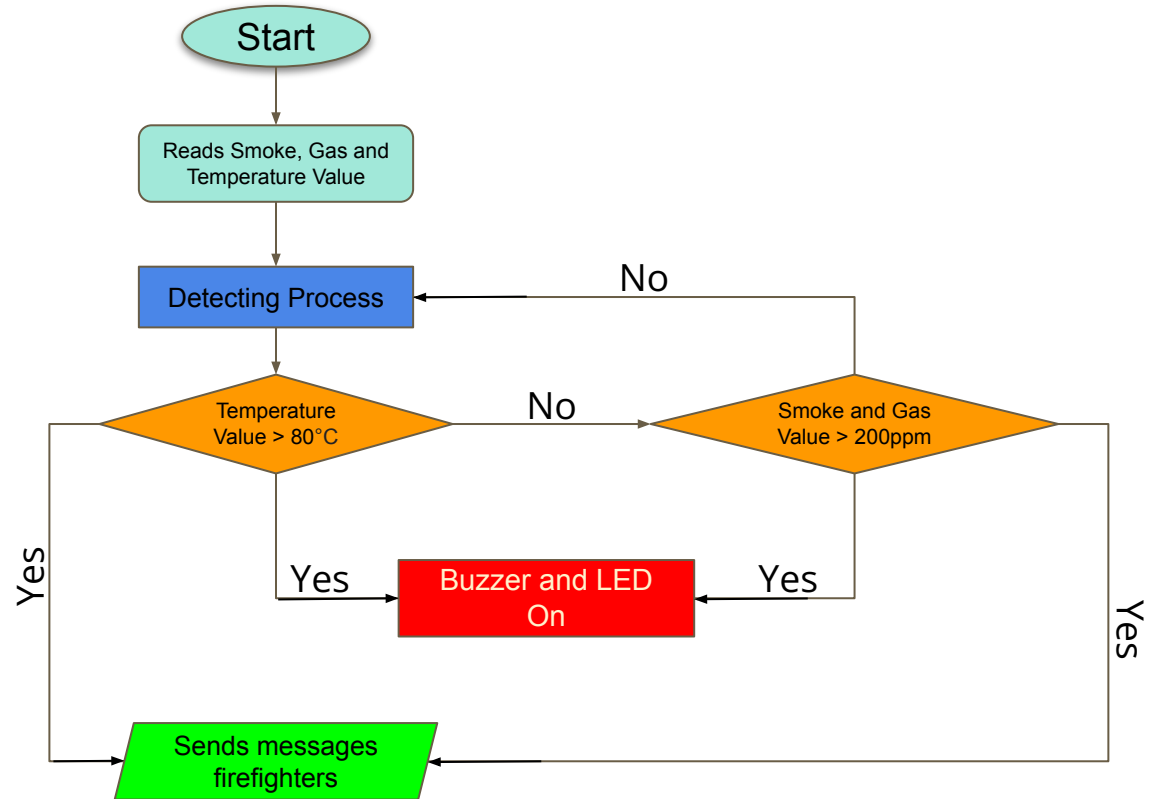
void setup() {
    //Initialising the pins
    pinMode(gasSensor, INPUT);
    pinMode(buzzer, OUTPUT);
    pinMode(ledGreen, OUTPUT);
    pinMode(ledRed, OUTPUT);
}
```

```
void loop() {  
    //reads data from the sensor  
    int gas_value = analogRead(gasSensor);  
  
    //checks data from sensor  
    if(gas_value > HIGH)  
    {  
        tone(buzzer,1000,500);  
        digitalWrite(ledRed, HIGH);  
        digitalWrite(ledGreen,LOW);  
    }  
    else {  
        noTone(buzzer);  
        digitalWrite(ledGreen,HIGH);  
        digitalWrite(ledRed, LOW);  
    }  
    delay(200);  
}
```

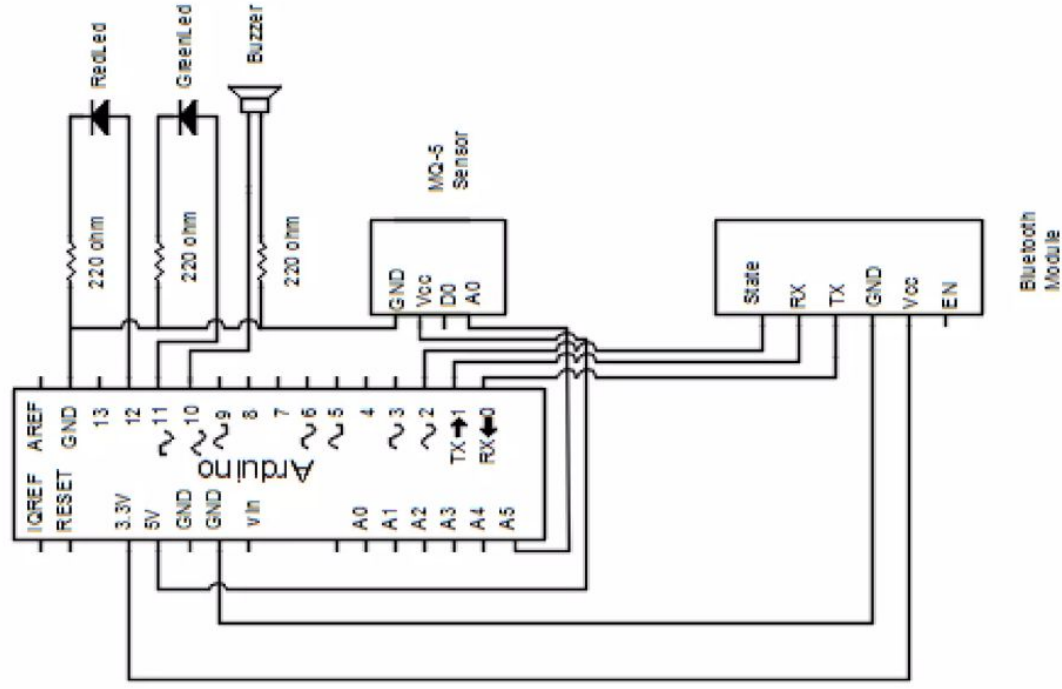

Email Response System to be added

- Fire detection event
- Threshold detection
- Alert trigger
- Email Notification Request(Using SMTP)
- SMS/ SOS Alert system

Flow Chart



Circuit Diagram



Contributions

Suryansh Sharma - Built the neural network model, video integration with model in addition to ppts and write up

Priyanshu Ranjan - Hardware part of fire detection system and arduino coding in addition to ppts and write up

Debayan Biswas - Image Extraction Code and Steps needed for Email Response System in addition to ppt slides

Kabir Hooda - Preparation of Budget and Steps needed for Email Response System in addition to ppt slides